Adina Kalet
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Editors

Remediation in Medical Education

A Mid-Course Correction

Springer

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To Celia Kalet, who would have understood this work.
I do it in her honor.

A.K.

To our learners, past and present, who challenge
and inspire us to be better educators and physicians.

C.C. and A.K.

Foreword

For those who live by the adage "Impossible is only an opinion," intolerable conditions lead to action. In 1988, Dr. Arnold Gold, a Pediatric Neurologist and Professor at the Columbia University College of Physicians and Surgeons with an optimistic, dedicated group of activist colleagues, medical educators, and community leaders established the Arnold P. Gold Foundation (APGF; http://www.humanism-in-medicine.org). They acted in response to the glorification of technology as a replacement of the medical profession's historic dedication to caring for people who were ill and suffering. As a consummate clinician, Gold was excited to see improved diagnostic and treatment opportunities for his patients, but he was profoundly disappointed in the medical profession's growing disinterest in patient-centered care. In his experience, young physicians were losing their desire and ability to establish the trusting relationship with patients essential to optimal healthcare.

The initial Gold Foundation goals included nurturing and preserving the tradition of the caring physician to improve the patient experience and reemphasizing that the standard of excellence in medicine demands that physician trainees become as caring and compassionate as they are scientifically proficient and technically well-trained. A corollary was that compassion and empathy had to be taught explicitly within the core medical curriculum.

Against the odds, happily, "humanism in medicine" is now encoded in the core competencies assessed by the MCAT and required for medical licensure in medical school and residency programs globally. The Gold Foundation's heart-shaped logo is a familiar sight at white coat ceremonies throughout the nation and abroad, prominently featured on the label pins worn by students and faculty at 96 % of our country's accredited schools of medicine. There are Gold Humanism Honor Society chapters at 104 medical schools and has approximately 18,000 members. The coveted, internationally competitive Gold Professorship has produced a cadre of extraordinary, humanistic faculty members throughout North America. This past year, the Gold Foundation's *Research Institute for Humanism and Professionalism*, was established to:

- Create a national agenda for disseminating published peer-reviewed research on the impact of humanistic medical practices
- Encourage and support the development of new valid and reliable assessment instruments
- Improve the quality of research projects on humanistic practice
- Assess the impact of the Foundation's work on education, practice, and the practitioner's professional life

That first autumn of 1988, the APGF Board of Trustees formulated a strategic plan and set forth to answer the following questions: is it possible to identify candidates for medical schools who are both scientifically proficient and compassionate? Are we already selecting idealistic and humanistic young people for medical schools and then, through the medical education process, discouraging their spirit of caring? And last, if young doctors are not naturally sensitive or humanistic, can we teach them to be so?

As coeditors of *Remediation in Medical Education: a mid-course correction*, Drs. Calvin Chou, Professor of Clinical Medicine and Academy Chair in the Scholarship of Teaching and Learning at UCSF, and Adina Kalet, Arnold P. Gold Professor of Humanism and Professionalism and Professor of Medicine at NYU School of Medicine, address all three of these questions and more critically and with the wisdom that this difficult topic requires. Their book stimulates awareness that the awesome imperative for the medical profession—to uphold the highest professional standards through diligent monitoring and self-regulation of its members—has been hindered. For to be most effective, the process must begin during medical school, before doctors are entrusted the care of patients as licensed practitioners! This book will assist medical schools to engage in a process of assessment, reflection, and remediation so graduating students will be humanistic and competent practitioners.

Some percentage of students in every medical school class will be incapable of meeting the competencies required for skillful patient care without specialized faculty intervention, but unfortunately, many of these students will not be identified until they have invested many years and dollars pursuing a medical career. By and large, these students are "passed along" for a variety of reasons described in this book. The authors speak frankly to the dearth of objective, validated and reliable assessment instruments with which to identify those who are not meeting patient care competency standards. Clearly, there is also a relative lack of comprehensive, effective programs embedded in curricula that offer the possibility of acquiring the necessary skills. Though aware of the problems these students pose to themselves and vulnerable future patients, medical school faculty and administrators have not had the tools, training, mandate, or urgency to address the issue. This new book, which should be on any faculty member's shelf, can rectify some of that resistance.

With compassion for trainees and teachers and great respect for the medical profession, Drs. Chou and Kalet have assembled a diverse group of contributing authors, many of whom are leaders in humanism in medical education. They challenge readers to consider where the "problem lies" when an individual medical student, resident, fellow, or colleague appears clinically incompetent. This volume provides a wide range of evidence and experience-based advice and new perspectives on this issue. The voices in this book include "front line" medical educators working daily to ensure we have future humanistic physicians, as well as mental health and teaching experts that support them. Unique perspectives are articulated by scholars studying learning, moral development, and race-related anxiety, as well as educational program leaders, entrusted to ensure all graduates are prepared to practice in this evolving healthcare environment, who poignantly express conflicts engendered by their competing responsibility to the trainee, to the institution, and to society.

Remediation is an interesting and important lens on the current controversies and innovations in medical education. To engage with learners who don't meet set competencies, educators require in-depth understanding of what these standards are and the creativity and optimism to work in a complex system so that goals and potential are met by both the student and the profession. The book is filled with stories of difficult and interesting challenges, as well as creative solutions. By defining an important research agenda in the concluding chapter, the editors may attract and inspire medical education scholars. In *Remediation in Medical Education*: *a mid-course correction*, readers will find examples of trainees, teachers, and scholars working together to ensure that competent and caring physicians are available in the future. Above all, the authors provide readers the means and preparation to follow their advice and positive example in order to personally be capable of accomplishing that shared goal. The book is a virtual road map to a successful educational experience for teacher and pupil alike. We suggest that it become required reading.

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Foreword

When encountering a learner who is not thriving, it is often difficult to figure out what is wrong and how to help. And when confronted with a serious violation of professional ethics or a repeated threat to patient safety, it is equally unclear what to do. Most medical school faculty members, deans, and residency program directors have limited experience dealing with such challenges, so there is a feeling of uncertainty about how to diagnose the problem, how to support the learner, and how much to invest before dismissing them. Each step in this process is unclear, appears to lack an evidence base, and sometimes fails to garner needed institutional support. Left on their own, faculty members and program directors often hope that the problem will go away, that the learner will succeed, and that no harm will come to patients. Unfortunately, problems often become worse, and if uncorrected, result in harm to patients, disruption of the healthcare team, and occasional dismissal from the program.

I struggled with all of these challenges as a vice dean for education at the UCSF School of Medicine. The remediation programs and the procedures for dismissal and appeal were within my jurisdiction, and I drew upon the expertise of learning specialists, associate deans for curriculum and student affairs, and attorneys—all of whom were on speed dial. I have also been involved in trying to synthesize what is known about remediation strategies and their outcomes across the continuum of medical education [1–3]. For these reasons, I was excited to read this book, which is a treasure trove of useful information about every aspect of remediation and dismissal.

This book offers practical tips grounded in theoretical frameworks and empirical research, where it exists. Because remediation encompasses so many issues and considerations, a very broad-based approach is required— and fortunately this book delivers.

In order to help correct deficiencies and offer the right kind of support, a detailed needs assessment is required. This in turn sometimes makes possible an appropriate educational or mental health diagnosis. It is important to know if the problem is within the learner or the environment. If within the individual, then is it a cognitive, metacognitive, or affective problem? Is it a learning disability or a mental health issue? If in the environment, is the problem rooted in the family or a significant relationship? Is it a hostile learning environment? These and other considerations are examined in depth in this book. The authors offer their creative inventions, conceptual models, educational strategies, and expertise derived from research and experience in education,

psychology, psychiatry, learning sciences, administration, and law. All of these perspectives enhance our understanding of remediation on both the individual and programmatic level.

A remediation program, however, does not exist in isolation but must be embedded in a curricular context that has clear learning objectives, competencies, milestones, and performance assessments. Accreditation standards for both medical students and residents (e.g., LCME and ACGME) stipulate that these be clearly spelled out for the learners and the faculty members. By standardizing on learning outcomes, the learning process can then be more individualized—either for advancement or for remediation. This was a key recommendation of our Carnegie book, *Educating Physicians: A Call for Reform of Medical School and Residency* [4], and a central premise of this book.

To implement a competency-based curriculum and/or remediation program, faculty members need to be knowledgeable and skilled in their area of expertise and in pedagogy and assessment. This in turn requires a robust faculty development program, which can create a "teaching commons," a place where people come together to discuss important issues related to teaching and learning [5]. Faculty development can also change the community of teaching practice in classrooms and clinical settings, and ultimately improve clinical practice [6].

Remediation programs are sometimes seen as a necessary but isolated compartment of student academic affairs. Some resources are committed to working with struggling students, but it is not perceived to be a major component of the academic program. This book helps place remediation at the heart of academic progress, suggesting that supporting students as they progress is an essential component of institutional capacity building and vitality. Everyone stumbles somewhere along the way and needs support in order to achieve academic excellence and demonstrate professional competence. Suggestions for how to create such a learning climate are found in this volume.

I was also pleased to see chapters on administrative leadership, and the legal and procedural due process aspects of grievances and dismissals. Deans and residency program directors often feel alone and are unwilling to take on the difficult confrontations that accompany dismissal proceedings, and grievance and appeal procedures. While few students go through such processes, it is important to understand what is expected and why it is important to uphold high academic standards and follow institutional policies and procedures [7–9]. The chapters in this book illuminate these issues and offer clear guidance on how to proceed in a fair and equitable manner.

If you have ever found yourself in the land of remediation uncertainty, or if you are or aspire to be an educational leader in the health professions, I enthusiastically recommend this book to you.

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References

1. Hauer KE, Teherani A, Kerr KM, Irby DM, O'Sullivan PS. Consequences within medical schools for students with poor performance on a medical school standardized patient comprehensive assessment. Acad Med. 2009;84(5):663–8. doi:10.1097/ACM.0b013e31819f9092.

2. Saxena V, O'Sullivan PS, Teherani A, Irby DM, Hauer KE. Remediation techniques for student performance problems after a comprehensive clinical skills assessment. Acad Med. 2009;84(5):669–76. doi: 10.1097/ACM.0b013e31819fa832.

3. Hauer KE, Ciccone A, Henzel TR, Katsufrakis P, Miller SH, Norcross WA, Papadakis MA, Irby DM. Remediation of the deficiencies of physicians across the continuum from medical school to practice: a thematic review of the literature. Acad Med. 2009;84(12):1822–32. doi: 10.1097/ACM.0b013e3181bf3170.

4. Cooke M, Irby DM, O'Brien BC, Carnegie Foundation for the Advancement of Teaching. Educating physicians: a call for reform of medical school and residency. San Francisco: Jossey-Bass; 2010. p. 304.

5. Huber M, Hutchings P. The advancement of learning: building the teaching commons. San Francisco: Jossey-Bass; 2005.

6. O'Sullivan P, Irby DM. Reframing research on faculty development. Acad Med. 2011;86(4):422–8.

7. Irby DM, Milam S. The legal context for evaluating and dismissing medical students and residents. Acad Med. 1989;64(1):639–43. PubMed PMID: 2803418.

8. Irby DM, Fantel JI, Milam S, Schwarz MR. Faculty rights and responsibilities in evaluating and dismissing medical students. J Coll Univ Law. 1981;8(1):102–19.

9. Irby DM, Fantel JI, Milam SD, Schwarz MR. Legal guidelines for evaluating and dismissing medical students. N Engl J Med. 1981;304(3):180–4.

Preface

Happy families are all alike; every unhappy family is unhappy in its own way

Leo Tolstoy, *Anna Karenina*

Remediation is the action taken to remedy a situation.

Sailors make many course corrections; they are constantly recalibrating their navigational systems so as to ensure they arrive where they are going at the expected time. They tack back and forth, rarely heading directly toward their final destination. Medical training (and life) can be like this. The metaphor suggests an aspirational reference point even though you are almost always off course. It also implies a need for exquisite awareness of your current location, your strengths, vulnerabilities and foibles, and an ability to collect and digest a wide array of information. Guidance—the sun, the stars, GPS, or a good mentor—is a must, particularly when navigating in unfamiliar waters. All this is essential to safe passage for you and those for whom you are responsible.

Taking this metaphor a bit further (although neither of us sail!), remediation in medical education is the act of facilitating a correction for trainees who started out on the journey toward becoming a physician but have moved off course. As assessment of clinical competence and professionalism in medical training has become more sophisticated and ubiquitous, educators continue to struggle to find effective and respectful means to work with trainees who don't meet standards, the *vast majority* of whom will become practicing physicians. Society allows and expects the medical profession to regulate ourselves, and we must do so as a routine part of medical education. Over the past several years, as a result of a great deal of work on high stakes performance-based assessment of clinical skills, we have spent a great deal of time working with "failing" students and residents. These students underperform on combinations of medical knowledge, communication, history gathering, physical exam, and clinical reasoning skills compared to their peers. In addition, we have worked with a large number of trainees whose behavior is perceived as unprofessional. These students who do not "make the grade" comprise a heterogeneous group who present a broad array of fascinating challenges to educators and raise fascinating issues for the health professions. During the process of remediating these learners, we have come to realize that medical education needs frameworks for understanding, diagnosing, and addressing the at-risk, "incompetent," or disruptive trainees who distress training programs and drain resources and good will. In this book we set out

to provide an evidence and theory-based, practical approach to identifying and remediating students who cannot perform to standards. The writing and editing of this book was literally an 18-month long conversation among 34 committed professionals, each with substantial experience working with at-risk and struggling trainees (in one case, being one). It has been a great privilege to facilitate such productive and meaningful discussions with both those who have done and published the seminal scholarly work in their fields and those from the "trenches" of medical education. We take special pride in eliciting the contributions of those dedicated educators and educational administrators who otherwise might not be given a platform to share their hard-won wisdom or receive any recognition for their innovative and committed work with individual learners.

We have also undergone our own course corrections along the way, realizing the value of diverse perspectives on certain topics such as unprofessional behavior and for further treatment of previously unforeseen topics such as burnout, resilience, and reflection. Like most complex subjects, there is no single valid point of view. We tried to include as many as possible, but we are certain we missed a few; for this we take sole responsibility.

As Tolstoy reminds us (with a quotation that is admittedly a bit of a stretch), the majority of medical trainees are "doing fine," but those who struggle do so in his or her own unique way. Everyone brings his or her own history to the table, in the personal, educational, cultural, psychological, physical, and self-awareness realms, among many others. This richness makes our interactions endlessly fascinating. It also brings a great deal of complexity to the remediation process, where several individual factors may conspire with the environment to cause a trainee to veer off course. Sometimes, even in the setting of complex causes, the fix is straightforward and behavioral (e.g., "just make flash cards!"). Other times, the problems are simple, but the fixes are almost impossible to enact (e.g., time accommodations on medical board exams). In the end, we strive to ensure that all physicians, present and future, meet the highest standards.

Discussions about this subject with medical educators from around the world confirm that the issues from the educator and administrator points of view are similar, independent of the particular cultural context. Because they typically complete a university degree before entering medical school, medical students in the United States are older and presumably more mature compared with their European and Asian colleagues. However, from our experiences and discussions with our own international counterparts, the "presenting issues" in remediation remain similar. That is to say, in broad strokes, students struggle with basic knowledge, skills attainment, and issues of professional development; residents struggle with clinical reasoning, decision-making, time management, and professionalism; and practicing physicians come to our notice for poor communication skills, lack of maintenance of expertise, lack of emotional self-management, and unethical behavior. It is with utmost respect that we have attempted to digest great swaths of work done in all corners of the world to translate it for those new to the field. We also fervently hope our international colleagues will forgive our provincialism.

A review of the list of authors reveals that most of us are physicians who practice in a range of specialties (internal medicine, emergency medicine, pediatrics, psychiatry, and surgery), teach in a range of venues, and lead a variety of programs. On the team are also social and behavioral science researchers, educators, clinicians from an array of disciplines within psychology and education, a physician assistant, and three trainees. We believe that many, though likely not all, of the approaches and underlying theory that our authors present apply to learners in diverse health science training programs, not just in the training of physicians. We have attempted to indicate clearly throughout the book where research has been based solely on medical learners. We enthusiastically invite our colleagues from other professions to adopt what they can and work with us to both deepen the work and make it even more broadly generalizable. The context of this book is clearly physician training in the United States, but we hope we clearly communicate how much we value the work being done by those in other domains of medical education research and learning sciences around the globe.

Part I of this book begins with defining competencies and the science behind a fundamental shift in the way medical education is delivered and assessed. As this process of "assessment for learning" will invariably detect trainees needing extra work, we follow with a description of a remediation program and then march through the core clinical skills competencies, using performance-based assessment data to diagnose "failing students" and empirical strategies to put them back on course. Authors in this section use conceptual models that provide frameworks and strategies, including cognitive and learning science as it applies to expertise development, critical thinking, and diagnostic decision-making. In Part II, authors explore a range of issues that provide context for remediation, including professional identity formation and moral reasoning, verbal and nonverbal learning disabilities, attention deficit disorders in high functioning individuals, issues of diversity, and often-missed educational and psychiatric issues. In this section, we chose depth of coverage over breadth. For instance, to discuss diversity, Brondolo and Jean-Pierre used as a case example race, ethnicity, and what is known about the influence of racism on the practice of remediation. We recognize that it is not possible to address nuances particular to other areas, including gender, sexual orientation, spirituality, among others; we trust our readers to be able to make the leap. In Part III, authors describe the resources needed to remediate students: an overview of metacognition and learning science as it applies to expertise development, followed by specific skills and tools useful for any remediation situation, including reflection, feedback, and coaching. Part IV zooms out to a systems-level viewpoint: a dean and program directors write about the policy and leadership challenges, we write about faculty development, and in the final chapter we nominate a research agenda in the study of remediation. We end with an epilogue, a reflection by a former student at high risk who underwent a remediation process, which shows not only the internal emotional turmoil that arose when external performance data blatantly did not match his view of himself, but also that a well-structured remediation process can be satisfying and successful.

It is not surprising that since most of our authors are clinicians and/or educated medical learners, an "illness-model" approach to remediation predominates in this book. Accordingly, most approached the concept of competence as the property of individual learners. Detection of deficits occurs through lack of attainment of competence, and then learners undergo individualized treatment. This is a very useful paradigm, but it has its limits. There are other ways to view competence and incompetence. In this book, as we focus overall on the individual-based clinical approach, we point out the unintended consequences of this orientation and in Part IV discuss potential alternatives.

We encouraged the chapter authors to use cases to illustrate their ideas. Most of these cases are composites of multiple trainees, and all were carefully de-identified by the chapter authors and then again in the editing process. We even went as far as providing cases to each other so that even the institutional affiliation of the case authors could not be traced. As they say in the movies, all characters appearing in this work are fictitious, and any resemblance to real persons or real events is purely coincidental.

We intended that this book would assimilate a wide range of perspectives and experiences into a single resource. However, given that each chapter was written to stand alone (digital copies can be purchased separately), there is some duplication of content. We did our best to cross-reference the material as much as possible, manually hyperlinking to the location of additional discussion of related topics. We encourage you to skip around to appreciate the different points of view and reach out to us with stories, comments, and questions. In particular, although the tone of the book is optimistic, with many of the chapters detailing successful remediation strategies, not all trainees who require remediation should continue on into training (Chap. 20). We also wish to point out strenuously that much more research is needed in this area (Chap. 21).

There is an old joke that goes something like this: what do you call the graduating student ranked at the bottom of his medical school class? Answer: Doctor. This joke, like most, is funny because it reflects something true about medical training: it is harder to get into medical school (acceptance rates are low) than to stay in (dismissal rates are even lower). As you read this book, we invite you to consider why this is and what it means. What is the faculty's responsibility to remediate trainees? Does this idea arise from the existence of different properties in medicine (and possibly other health professions) compared to educational programs in other professions, and if so, what are those properties? What about the culture of medicine dictates that most people who get into medicine should graduate, and it is the responsibility of the program to ensure that happens? If this assumption constitutes a professional value, then what does this mean for how student assessment is conducted and how we set our standards?[1] In this book, we mostly address when and how we should remediate. But maybe we should also be talking about why we remediate, and why we seemingly spend more time doing so and with more passion than other professions.

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[1] We thank Professor Glenn Regehr for raising many of these questions in a personal communication.

Despite a lack of systematic long-term follow-up studies, we have heard from many trainees whom we worked with in remediation, and the reports are encouraging. The vast majority has succeeded and deeply appreciated the time, effort, and sacrifice (and sometimes blood, sweat, and tears) that we have shared with them. Ultimately, we want this book to be a resource for those training the next generation of physicians. We hope it will also be useful to those responsible for establishing and administering policy as well as an inspiration for scholars who are looking for a difficult and thorny problem to solve. Though our role may not be to make every unhappy student happy, at least we can use our resources (many of them listed in this book), commitment, and creativity to do our best to put them back on course.

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and sister-in-law Lorna, Lisa and Danny and Lisa and Leon, sisters and brothers of another mother and Esty Stein who made it possible for me to both write a book and have a family and home life. We have had very painful losses this year and much sweetness. As I am learning life is like that.

When it is needed, everyone deserves to have a caring and competent physician. I am optimistic we can make this a reality; we are not there yet. It is with great honor that I have had a part in the education of thousands of physicians. Thank you for the privilege. Now pay it forward.

New York, NY, USA   Adina Kalet

Acknowledgments

People who know me know that I love watching the Oscar and the Tony Award ceremonies. In particular, I can't get enough of watching those beautiful people clutch those bizarre statuettes, say things like "I can't believe they pay me to do this," and inspire children who fervently wish to act to follow that dream.

Remediation is not like that at all. They definitely don't pay me to do it, and I certainly never aspired to the role nor dreamt that I would count learner remediation among my job duties.

But doing this work is an outgrowth of the bottomless interest I have in developing expertise in interpersonal communication skills, and as such, remediating learners is one of the activities that challenges me most, that impels me to discover more, go deeper, figure out how to reach different kinds of learners, and broaden my horizons and my range of skills. There are no glitzy award ceremonies for this work, thank goodness, because they probably would cheapen the nobility of what we do.

And then there are the thanks. Fortunately, I won't embarrass you by standing at a podium reading off a list of people that I ought to know off the top of my head, and hopefully I won't have to worry about an orchestra drowning out my last appreciative words.

First of all, to Adina Kalet, my guide in the Facilitator Training Program of the American Academy on Communication in Healthcare (AACH) over 10 years ago (back when it was the American Academy on Physician and Patient) and who brought me on to this project: what a fabulous, wild, wonderful, at times strange, but always entertaining and deepening ride this has been. Your extraordinary diligence, mastery of a broad range of material, quick thinking, and persistence inspired me when I trained under you and continue to inspire me now. Writing and co-editing this book in many ways has paralleled the immense professional growth I garner from doing remediation work, so I have such gratitude to you for inviting me along, and for converting me over to the MacBook Air. I'm never going back. We also truly could not have done it without the magic of the internet. What was it like before the days of Dropbox and Skype? I would not have seen, nor virtually worked in, Dubrovnik (where I must go one day).

Amy Wolfe—these last couple of months with your tireless work in the background saved us from hours of last-minute arduous toil. Thanks for catching the important details and for saving us from hugging Buddha's feet.

Janet Foltin and the folks from Springer—you are making this happen. Grateful for your support.

There are so many people from whom I have learned over these years: students, residents, participants in courses I have facilitated, formal and informal trainees in many different types of programs—I have learned something from each of you, either about you or myself, or in the most memorable instances, both simultaneously. My colleagues at UCSF, wonderful all, but for this book in particular those incredible collaborators who have labored, discovered, laughed, and cried with me in the work of remediation and feedback: Anna Chang, Marieke Kruidering-Hall, Karen E. Hauer. And Denise Davis, who spans my UCSF family and my AACH family, whose welcome, nurturing, patience, dedication, and wisdom have made me a better person (such a cliché, but never truer): again, I am indebted to all in the community, but specifically for this work, Maysel Kemp White, Auguste Fortin, and a special shout out to my other two musketeers (or maybe my fellow Charlie's Angels?), Ellen Pearlman and Cathy Risdon, whose many brilliant ideas I have shamelessly commandeered as my own in this book, with hopes that memories of bootleg Scotch, the angel Amina, potted meat, and uber debriefing will soothe the disbelief of my robbery.

And before the orchestra starts, last but not the least, to my family: to my parents, Chris and Shufen, role models for unconditional positive regard, who instilled in me a work ethic and the belief that I could do anything I wanted (and apparently, given what I wrote in that second paragraph, also things I didn't want) as long as I ate well, slept well, and exercised; to my siblings Homer and Carol, who probably think I ought to be reading some of what I've written about communication and remediation a little more closely; to Lisa Murphy and Beth Weise, who are doing the heavy lifting of raising our two most precious girls, which freed me to do a huge project like this; to those girls, Eleanor and Margaret, who keep me grounded, humble, and constantly growing in the most unexpected ways; and finally to my husband, Craig Kliger, who is there with beaming smiles in goodness, and who tolerates my quirks and strange estimations with grace and humor.

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Part III   Resources

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Part I

Presenting Problems and Symptoms Leading to Remediation

Defining and Assessing Competence

1

Adina Kalet and Martin Pusic

Abstract

The ability to conduct effective clinical skills remediation has been greatly enhanced by an emerging consensus on the definition of medical competence and the consequent development of information-rich strategies to assess competence. In this chapter the authors describe how the definition of medical competence has evolved from a vague, intuitive impression toward a more analytic articulation of areas of competence with well-defined expectations within each area. They describe debates and present key concepts that greatly influence the practice of remediation in medical education such as entrustment, expertise development, deliberate practice, learning curves, and assessment for learning. Finally they describe an example under development of assessment for learning.

"Competence is not an achievement but rather a habit of lifelong learning." [1]

1.1 Introduction

Sara passionately wants to become a physician. She is admitted to a prestigious medical school. She soon learns that adequate performance in medical school means not failing any of the 35 high-stakes, multiple-choice question (MCQ) exams in the pre-clerkship phase or any of seven

clerkships. She is forewarned by upperclassmen that clerkship grades are largely influenced by how well she does on National Board of Medical Examiners (NBME) subject exams because faculty and resident feedback is "useless."

In the preclinical curriculum she gets little feedback except for exam scores. Hers hover just below the class mean, which worries her. She starts to strategize so that she doesn't study material she knows will not be highly emphasized on the exams in order to focus on material favored by the course directors.

When Sara struggles with a personal problem and fails an exam, she is given opportunities to retake it until she passes. She is aware that if she needs to, she will be allowed to repeat the year. The faculty have been very supportive and the Student Affairs Office arranged for mental health support. She is reassured that to protect

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her privacy, academic performance information is not shared or "fed forward" to other course or clerkship directors.

As she moves into her clerkship years, she is becoming uneasy that she is left alone to define medical competence for herself. She does her best, basing her goals for learning on her own moral compass and by observing role models, both good and bad. She is enjoying her clerkships and is learning a great deal from her patients and house officers. However, she has a "sinking" feeling that her teaching attending doesn't think she is doing well. When she asks for feedback, he tells her, "you are doing fine, just read a little more." She asks one of her clerkship directors what she is doing wrong and is told she is "doing fine" but should "speak up more on rounds and take more initiative." This makes her self-conscious and she becomes less certain how to approach learning on her clerkships. Her NBME exam scores are at the national mean and she receives pass or high pass grades on all clerkships. Over 80 % of her classmates receive honors grades on at least two clerkships. This too worries her.

What she does not know is that the Dean of Curriculum and Dean of Student Affairs track students who struggle academically, but she is not on their radar. If a student passes all exams, they move on to the next stage of training, even when faculty members are concerned about the student's competence. The only person who has a complete record of the student's academic performance in medical school is the Registrar.

When Sara talks with her career advisor about residency, she is discouraged from applying to major university programs because her academic record is "not good enough" and encouraged to apply only to community hospital programs, which will rank her to match because she is from a prestigious medical school. She is embarrassed, shocked, and devastated by this advice.

1.2 We Are Training Physicians: Missed Opportunities

This scenario describes the experience of a North American medical student as recently as 10 years ago. What were the problems? First, there was the wasteful misdirection of energy as highly motivated and well-prepared students crammed to pass poorly designed tests and strategized to impress their supervisors rather than engaging directly and diligently in becoming excellent physicians. Some faculty even quipped that we chose our students so that they could "learn despite the formal curriculum." Second, students were left on their own to divine the implications of their grades for their ultimate goal of being a physician. Third, expectations and standards were so vaguely defined that faculty and students could not say what they were and often complained that there did not seem to be any. Fourth, although well intentioned, the lack of educational handoffs compounded these problems because of the lack of continuity in student learning and assessment. Finally, since most of the school's energy concentrated on the identification and monitoring of students who struggled the most, students in the middle of the pack who could improve with effort, like Sara, lost real opportunities to improve: schools did not ensure the highest overall achievable level of competence. In this chapter we will review the progress that has been made in the past decade, transitioning from a time when assessing students was viewed as a secondary process to ensure they had merely learned the material toward an era where programs use strategies that harness the power of assessment to drive learning.

Medical education is a high-stakes endeavor. All our graduates are expected to use powerful cognitive, procedural, technological, and pharmacologic tools under complex and uncertain circumstances, with life and limb in the balance. Furthermore they are expected to do so nearly perfectly for a lifetime. Mistakes can be very consequential. This is not for the faint of heart. We are training physicians.

Sara would have likely benefited from regular feedback on her strengths and weaknesses. She would have, especially early on, enjoyed seeing how she progressed step by step toward medical competence. She might have felt greatly relieved had she received coaching in how to use a range of assessment information to manage her own learning. A long-term relationship with a faculty mentor with access to her academic

record could have illuminated blind spots about her performance. And a lower threshold for instituting learning support would have kept her on course toward her goals before significant difficulties presented.

Knowing her wishes and desires, and understanding her strengths and limitations, with the support of her faculty mentor, she could have made an informed career choice, finding a "best-fit" residency program rather than compromising. Under these circumstances Sara might have gone on to residency training with the lifelong, self-directed learning skills needed to stay at the "top of her curve" for her career. Here we will look at what has changed to make this approach more likely and what more needs to be done to fully shift the paradigm of educational assessment.

1.3 What Is Medical Competence?

Enacting a program based on competencies requires clear definitions of the domains, explicit standards, and an understanding of how to maximize the learning value of assessment. In the past, this has been very difficult due to the complex nature of professional education and medical practice, the rapidly changing landscape of medical science and health-care delivery, the imperfect assessment measures, and the fact that competence is contextual, experience-based, and developmental. However, without explicit standards, how do we identify trainees that are struggling and how do we know when remediation is indicated? Fortunately there has been a lively and productive debate, which has led to important innovations in assessment in medical education.

1.3.1 Discourses on Medical Competence Lead to Defining Competencies

As Hodges and Lingard point out, the definition of medical competence has been greatly influenced by our ability and willingness to delineate educational outcomes and to assess learners against those desired outcomes [2]. These discourses or "conversations" among stakeholders from differing backgrounds and academic traditions each represent a different perspective on measuring competence. How these discourses align with definitions of competence is illustrated below:

Discourse	Competence as measured by
Knowledge	Knowledge tests scores or other demonstrations of fund of knowledge
Performance	Demonstration of skills in either authentic or more recently standardized environments
Psychometric	Reliable test score and reduced variability of performance
Reflection	Evidence of being self-reflective, self-aware usually through narrative
Production	Direct impact on improving patient outcomes (emerging discourse)

These discourses will continue to evolve as we move from what has been a time-defined course of study (e.g., 4 years of medical school, 3 years of residency training) toward one defined by attaining competence however long it takes [3].

With this "competency movement," initially encoded in our accreditation standards in the 1980s [4] came an increasing expectation that we define competencies—areas of competence—and develop outcome measures for each competency. Accreditation organizations in the USA and abroad have taken the lead in this effort [5–7].

In the competency-based medical education paradigm, trainees become competent physicians, capable of independent practice, by demonstrating adequate performance of the ultimate "goal state" usually categorized into competencies (e.g., Patient Care, Medical Knowledge, Professionalism, Interpersonal Communication, Systems-Based Practice, Practice-Based Learning). The goal state is an ability to function in a realistic setting and is not based on the norms for a peer group in a particular course or clerkship. In this model, competency measures focus on the trainee, rather than on the curriculum, and assess learning individually and longitudinally and inform learners and teachers about the expectations.

The recent report by the Carnegie Foundation, commemorating the 100th anniversary of its Flexner Report, called for fundamental reform of medical education and recommended that we *standardize outcomes and individualize the curriculum* [8]. In this new model, how we assess competence takes priority over how we teach the curriculum. Assessment drives curriculum and learning. The challenge is to align assessment with the desired competency outcomes.

Medical training program accreditation bodies in Western Europe, the USA, Canada, the Middle East, and Asia have defined and operationalized the general domains of medical competence, and a global consensus is emerging [5–7, 9, 10]. Initially, analytic approaches were taken—breaking competencies down into specific objectives or standards within each core competency within domains of knowledge, skills, and attitudes. In parallel, Pangaro and colleagues introduced a more synthetic competency framework, the Reporter-Interpreter-Manager-Educator (RIME), which has been embraced for clinical clerkship and residency assessments of competence because this higher level approach enabled a fair process for making promotion decisions [11]. Emerging models include developmental approaches to identify milestones for each training stage [12] and more holistic and pragmatic approaches in which educators identify meaningful, "entrustable professional activities (EPAs)" [13].

EPAs are observable, measurable, learnable, and independently executable professional activities in a given context and timeframe that reflect one or more competencies. These EPAs are authentic work activities, (e.g., performing a venipuncture, obtaining informed consent), rather than a personal characteristic of the trainee (e.g., professionalism). Once a set of EPAs for a training stage is chosen, and defensible measures are designed, competency decisions are made based on increasing trust in the trainee to perform the activity with concomitant decreasing levels of supervision until he or she is able to do it independently or to supervise others. The Dreyfus and Dreyfus five-stage developmental model of skills acquisition has been applied extensively by health professional educators because it is a model fit to the purpose of determining thresholds of competence, which define levels of progressively independent practice [14] (see Fig. 1.1). This Dreyfus model describes the evolution of a medical learner from novice to deliberate expert and embraces the wisdom of well-accepted and trustworthy, traditional models of clinical medical education while enabling better articulation and communication about competence than was previously possible. It also helps address the complaint about the over-specification of competence, which keeps residency program directors mired in paperwork but doesn't facilitate meaningful decision making [15].

A major drawback of the "competency movement" is that in practice we measure competence infrequently. As a result, competence continues to be viewed as a static achievement rather than the dynamic growth process it actually is. In the following section we discuss two important learning frameworks that are useful tools to guide remediation efforts: deliberate practice and learning curves.

1.4 Expertise Development and Deliberate Practice

We expect physicians to be experts. A salient difference between novices and experts is *not* the mere possession of more knowledge, but the organization of that knowledge, refined through deliberate practice, to be instantly retrievable and accurately applied. Deliberate practice is key to expertise development. It is the process of effortful repetition with tailored feedback done over an extended period of time, and is key to expertise development. In now classic studies, Ericsson demonstrated that it is the hours spent per week in deliberate practice that reliably predicted the final level of performance in musicians, professional athletes, and chess masters [16]. Once a basic level of competence is achieved, continued refinement of expertise results from not only frequent practice but also focused attention and mindfulness. From a cognitive perspective, as certain tasks become more automatic with practice, some of the brain's limited attention capacity is freed up. Experts may use this capacity to
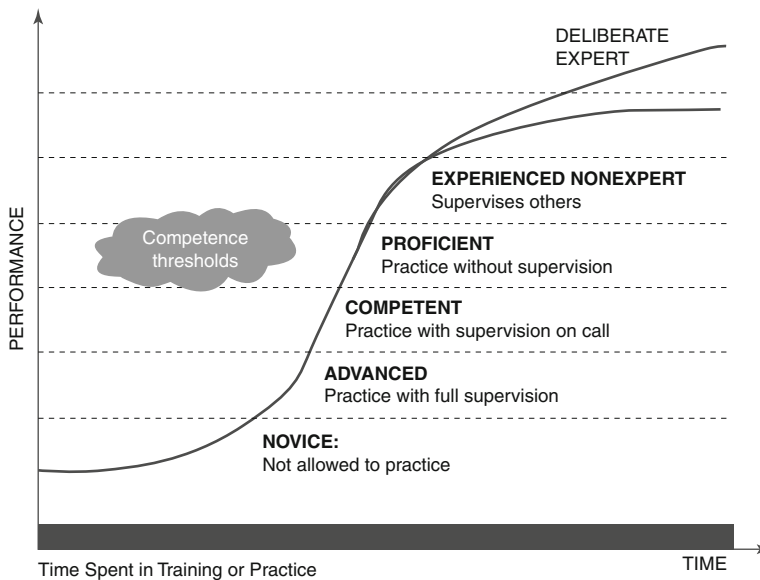
Fig. 1.1 A generic learning curve demonstrates the relationship between time spent in deliberate practice and quality of performance. Competence thresholds can be illustrated using the Dreyfus and Dreyfus model of skill acquisition, extended to incorporate Ericsson's concept that some experts accept the stage of *automaticity* and stop improving, while others continue to seek out opportunities to improve in a *deliberate* manner. Incremental improvements are hard-won at the expert stage as demonstrated by a plateau over time

consciously attend to refining their practice. Those who do not expend the effort may not improve their competence and can be thought of as "experienced nonexperts" (see Fig. 1.1 plateau phase). In this way ongoing competence is a habit of mind [17].

Deliberate practice requires sources of high-quality feedback. Research suggests that self-assessment of competence is frequently inaccurate and that learners should be taught to "recognize with humility that we are not uniquely privileged in understanding the strengths and limits of our own behavior" and seek trustworthy sources of assessment [18]. While for many aspects of medical competence this assessment should be provided by a trusted mentor or coach [19] (see also Chaps. 13 and 15), educational and health informatics will likely have an important role to play in expertise development in the near future. Recent advances in linking diverse data from various educational environments (e.g., authentic clinical work, simulation based, knowledge testing) into education databases will greatly simplify the collection of data on the quality and

outcome of procedural skills that will enable frequent measurements over a long period of time. At this time, most academic medical centers have not yet implemented such databases, though many are working toward developing this infrastructure [20]. With these databases, a new kind of medical education and assessment framework will become possible, based on deliberate practice. A key representation of a student's progress through deliberate practice is using "learning curves," which we explore next.

1.5 Learning Curves

Learning curves represent the relationship between episodes of practice and level of performance. This relationship generally has an S-shape such that with increasing practice, performance improves rapidly at first and then at some point (an inflection point) requires more time and effort to attain additional improvement (Fig. 1.1).

Theoretically, once a trainee crosses the competency threshold and can reliably perform the

skill independently, she can accept her competence level, decrease or stop practicing, and allow the skill to become automatic and largely subconscious. The disadvantage of this acceptance of automaticity is that the quality of her skill levels off even with repetition ("experienced nonexpert"), and performance may plateau or actually decline. It requires regular *deliberate* practice, with feedback, to fight the tendency to automaticity [21]. Because deliberate practice must be effortful and improvements are very gradual at the expert level, the individual must have significant motivation and self-regulation skills to continue to improve the skill of interest. Among experts, these metacognitive skills and characteristics are more predictive of optimal performance than are any intrinsic capacity or "talent" for the work [22] (see also Chaps. 13 and 15). This obviously has significant implications for the notions of lifelong and self-directed learning, which are a major aspect of the current medical competency discourse.

1.6 Progress Mastery and Progress Tests

Medical education is a mastery-learning domain in that all students must learn the material at roughly equivalent, high levels even though the amount of time needed to reach those standards may vary [23]. Mastery is best accomplished through frequent assessment, feedback, and opportunities for remediation. However, to be effective, the assessment measures must reliably detect meaningful progress and must reflect "end objectives" rather than developmental stage-appropriate measures; therefore, they must be student-centered rather than course-based [4].

Progress tests of medical knowledge, regular assessments of the end objectives of the curriculum, have been widely embraced internationally because of their feasibility, validity, and importance in aligning student assessment behavior with lifelong learning [24]. In the Netherlands, all medical students, whether in their first or sixth

year, take the same formative "final exam" four times each year and receive their scored exam with annotated answers. Students can view their scores presented as a learning curve. This is made especially useful when presented along with an aggregated curve for students in general. In this way, the exams are a rich source of meaningful information for students on how they are doing relative to expectations for their stage of training and compared to the goal for a medical school graduate. Similar efforts to assess progress of clinical reasoning across training years and stages and institutions show promise [25].

This progress mastery method also has the advantages of (a) detecting high achievers who may be able to have their path through the curriculum tailored, (b) rendering "makeup" exams unnecessary, (c) providing information for curriculum reform evaluation against ultimate objectives for medical training, and (d) enabling educational research [24]. Students who note that they have "fallen off the curve" may view this information as motivation to get back on course using their own learning skills, or if those are insufficient, as an indication for a need for active remediation.

1.7 Programs of Assessment for Learning

Assessments in medical education should have three main goals: (1) to motivate and guide trainees and practicing physicians to continually aspire to higher levels of expertise, (2) to identify physicians who are not competent to practice safely, and (3) to provide evidence that the trainee is ready for advanced training or unsupervised practice. In designing assessments, we should be aware of the impact of assessment on learning, the potential unintended effects of assessment (e.g., superficial rather than deep learning), the limitations of each method (including cost in faculty time needed to score exams), and the prevailing culture of the program or institution in which the assessment is occurring [26].

Based on these goals, we can distinguish Assessment *of* Learning, a model reflected in the many examinations described in the opening scenario, from Assessment *for* Learning. Assessment *of* learning, a model reflected in the opening scenario, is a curriculum-based approach characterized by assessments at the conclusion of a course of study. Competence in this paradigm is defined as accumulating a series of test scores that certify course completion. Not passing an exam results in repeating the exam; with persistent failure, the student is declared incompetent and cannot move on. In practice, this paradigm motivates students to develop habits to learn in ways that do not take advantage of expertise development. Therefore, students take a "bulimic" approach to cramming for exams (referred to as "massing" in the educational psychology literature) that does not bode well for durability of that learning. The assessments do not provide true guidance for remediation or for ongoing learning. In addition, if these assessments are poorly designed, they may inadvertently de-motivate students from deep learning. While it may aggravate many faculty members to hear that students are only interested in learning what is on the test, this attitude is an inevitable, if unintended, consequence of the assessment *of* learning paradigm.

As proponents of *assessment for learning* paradigm, we argue that assessment decisions must be made on the basis of a multifaceted program which includes diverse sources of assessment data, each designed explicitly to both accomplish its own limited goal ("fit-for-purpose") and motivate effortful and deep learning. In this approach the limitations of any one type of assessment become less of a concern.

"As a physician I would never tell a patient 'your glucose is very high but since your sodium is low, on the whole, you are healthy.' These two highly reliable and valid measures are not compensatory…it would be ridiculous to make a diagnostic decision based on only these two facts. We act this way when we use single highly reliable and valid measures of knowledge- test scores- to conclude that someone is competent for the complex practice of medicine. If one of the goals of medical education is to produce mature, confident, effective,

internally motivated learners, we must use the motivation that information-rich assessment provides to align the incentives with our goal."

Lambert Schuwirth, Professor of Medical Education, Flinders University, personal communication

For example, the "useless" direct observations in the clinical workplace described by Sara's peers can be improved upon so that these in-training assessments (ITAs) (see Chap. 19), coupled with other assessments of performance such as objective structured clinical exams (OSCEs) and nationally standardized knowledge exams, provide the information needed to guide counseling and promotion decisions. Epstein effectively summarized the full range of available options for assessment and the strengths and weaknesses of each strategy [26]. The concrete instantiation of a multifaceted assessment program is the educational portfolio, which we describe next.

1.8 Portfolio-Based Assessment: Pulling It All Together

Becoming a physician is a wonderful, nonlinear, dynamic process. Traditional psychometrically driven approaches (e.g., you are your most recent test score) do not incentivize development of life-long habits of deep multidimensional learning. Holistic approaches, on the other hand, are more appropriate to this mission. In a holistic framework, component pieces of information (e.g., multiple-choice tests, OSCE, clinical examination exercise, workplace assessment scores) reflect individual elements of competence. As with a patient chart, the clinician-teacher "makes meaning" of these pieces of information by aggregating multiple types of data across competency areas (e.g. Medical Knowledge), in the process determining what is already known about the student and what needs to be found out. He makes a focused and relevant plan for diagnostic workup of the student's competency. He develops a competency differential diagnosis, prioritization of issues, and therapeutic plan. The resultant chart/portfolio with its individual pieces and narrative

Fig. 1.2 The opening page of the Student Academic Portfolio. Each student has a unique portfolio, which also can be viewed by his or her mentor. The competencies are grouped in four Areas of Mastery. The standards for each competency by stage of the curriculum are available by clicking on the link. Student assessment data are either fed directly into the My Reports area on the left-hand side or uploaded by students (e.g., patient write-ups, essays, and the six required Formative Portfolio Reviews). Faculty mentors write regular feedback, which is uploaded into the portfolio
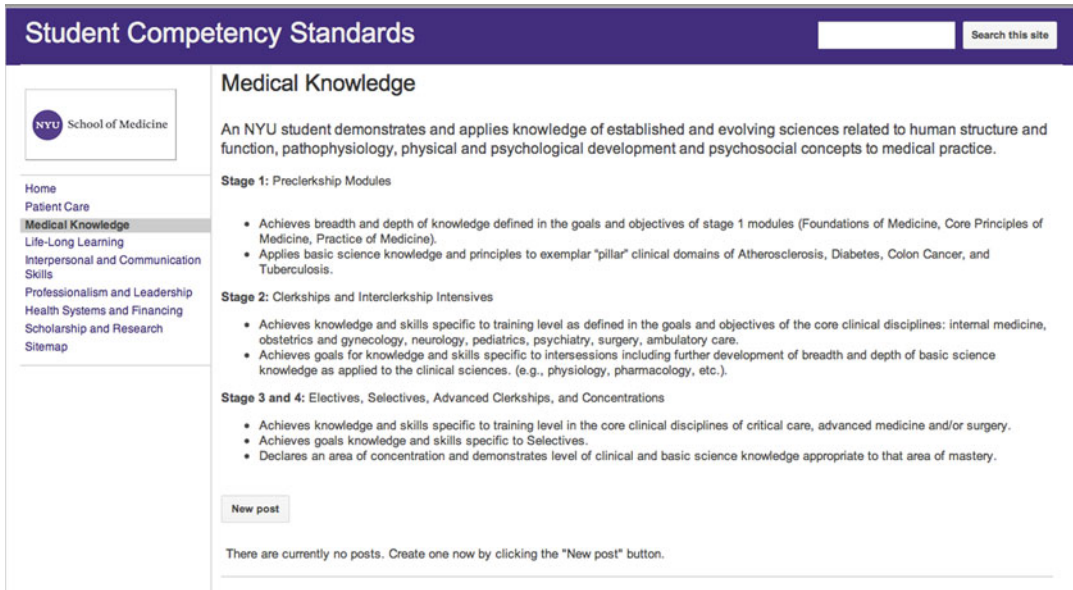
analyses can be judged for quality independently by someone with the expertise to do so.

This process represents a portfolio-based approach to assessment in medical education [27]. Individual pieces of evidence, each with their own imperfect information value, are aggregated, analyzed, and interpreted in narrative "reflections" within a necessarily imperfect framework toward an well articulated and complex goal of becoming a competent physician. In conversation with the learner, experts in making competence judgments use the portfolio ("chart") to see the whole educational picture, to customize feedback on the student's progress, and to help the learner make a plan to address issues that may arise, setting meaningful goals for learning and constructing a clear framework for defensible assessment of progress using longitudinal evidence [28].

1.8.1 The New York University School of Medicine Student at NYU Academic Portfolio

Before we began our curriculum renewal strategic planning process in 2008, Sara might have been one of our students. Over the past 5 years, for our undergraduate program, we have implemented and are building out a Student Academic Portfolio organized around our framework of seven competencies simplified into four key Areas of Mastery for a medical student: integrated clinical skills, foundational medical knowledge, professional development, and scholarship; this is clearly communicated in the design of the ePortfolio (Fig. 1.2). Each competency area is further defined by a limited set of standards for each of four stages of our curriculum easily available for viewing in the Student Academic Portfolio

Fig. 1.3 The Student Competency Standards are immediately available to anyone using the portfolio by clicking on a link leading to this page. The seven competencies are represented on the *right-hand menu*. The competency standards for Medical Knowledge are represented by stage of the curriculum as an example

(Fig. 1.3). Assessments within each competency area are "fit-for-purpose."

For instance, for competencies associated with Foundational Knowledge, we provide students with a cumulative report of how they performed on written multiple-choice and essay exams. More than just summing results of written examination scores, the Foundational Knowledge Report is reported in meaningful content "buckets" (e.g., histology, atherosclerosis, genomics, proteomics) which accumulate across a number of examinations (Fig. 1.4). For Clinical Skills competencies, students upload patient write-ups along with text-based feedback received from clinical preceptors. Aiding this perspective are scores from standardized patient experiences. We plan to include documentation of direct observation and feedback from the clinical clerkships in the near future using the RIME framework to summarize multisource data. To assess Professional Development, students are required to do a Formative Portfolio Review six times over the course of the 4-year curriculum. The portfolio review is a guided analysis and critique of their performance data.

Students reflect on this and propose learning plans to address areas of weakness. These documents are uploaded in the portfolio and discussed with a faculty mentor who then provides written feedback specifically addressing our standards for lifelong learning adapted from those used by the Cleveland Clinic Lerner College of Medicine [29].

Six Life Long Learning standards across all stages of the curriculum demonstrated through completing Formative Portfolio Reviews.

The student demonstrates the ability to:

1. *Identify strengths, weaknesses, and limits in his or her own knowledge and expertise and sets **learning and improvement goals** accordingly*
2. *Identify biases and prejudices and **reflects** on how these can affect learning and clinical practice*
3. *Identify challenges between personal and professional responsibilities and **develops strategies** to deal with them*
4. *Identify personal biases and prejudices related to professional responsibilities and **acts responsibly** to address them*

Breakdown by Conpetency (Competency Points/Total Points)*	% Correct	Course Avg %	Course St.Dev	
Atherosclerosis (14/544)	71.4	66.4	10.3	
Becteriology - basic (37/544)	89.2	90.2	5.5	
Becteriology - Clinical (9/544)	100.0	85.1	12.9	
Biostatistics (8/544)	87.5	86.7	12.6	
Cell and Growth Regulation (32/544)	78.1	82.7	9.6	
Cell Structures and Junctions (16/544)	81.2	88.2	9.1	
Cytoskeletal Elements (13/544)	84.6	89.0	10.2	
Embryology (18/544)	83.3	85.0	9.7	
Energy Metabolism (42/544)	75.0	77.3	9.2	
Histology (81/544)	91.4	82.2	7.3	
Human Genetics (34/544)	76.5	77.3	8.7	
Immunology (45/544)	73.9	80.3	7.4	
Membranes and Organelles (37/544)	81.1	81.0	9.8	
Metabolism of Biomolecules (27/544)	92.6	77.4	9.2	
Molecular Biology (33/544)	72.7	80.0	10.1	
Neoplasia (8/544)	100.0	89.3	11.5	
Parasitology (14/544)	100.0	80.8	11.7	
Pathology (20/544)	90.0	85.4	8.9	
Pharmacology (18/544)	88.9	85.7	9.2	
Therapeutics (8/544)	100.0	87.3	12.2	
Virology (30/544)	90.0	91.8	6.0	

Fig. 1.4 The Medical Knowledge Competency Report (MKCR) is generated and updated dynamically based on accumulated data from knowledge tests. In this example there are 21 content areas represented which represent a student's performance on 544 medical knowledge test questions distributed over eight examinations over the first half of the first year of the curriculum. While the examinations are scored as a unit, data on performance by item are sorted into content categories. The student receives updated (MKCRs) after each examination which show their own performance (the *dot*) presented along with aggregated mean (*vertical line*), interquartile range (*box*), and range (*horizontal line* and *whiskers*) data from all students taking the examinations. In this example, the student is performing consistently well across all content areas

5. *Interpret and analyze personal performance using feedback from others and **makes judgments** about the need to change*
6. *Identify gaps in performance and **develops and implements realistic plans** that result in improved practice*

Adapted from Dannefer and Henson [29].

1.9   Conclusion

If Sara enters a medical school using a portfolio-based program of assessment for learning, she would have quite a different experience. A week into medical school, she would put on her white coat and spend 2 hours in the simulation center, meeting and interviewing 3 standardized patients, each representing a rich and complex story directly related to the medical science about to be presented in the following weeks. Immediately afterwards, she would participate in a faculty-facilitated debriefing of this "Introductory Clinical Experience" (ICE) event. 2 weeks later, she would receive in her Student Academic Portfolio a detailed report on the ICE event, including feedback from the standardized patients, measures of her baseline communication skills, and information about how the rest of the class performed. She would review it briefly and notice that compared with her peers she was more skillful at establishing rapport but a bit less skilled at patient education and counseling. She'd make a note to ask her Practice of Medicine small group preceptor about this at their next session.

Every 2 weeks Sara would receive updated Medical Knowledge Competency Reports*, broken down into content areas based on her exam performance. This would accumulate into 21 domains by the end of first semester; she would be impressed with how much she had learned and make sure she did more to tackle the histology and genomics for the next exam to boost her scores in those areas. She would receive aggregated feedback from every member of her Team Based Learning group on her contributions to their learning. She would be surprised to read that—although everyone noticed how*

well prepared she was for their sessions together—3 of the 8 of them noticed she didn't say much. She didn't think of herself as "quiet" in the group. She would work on this and hope that in her next peer feedback there would be a noticeable change.

Then, at Thanksgiving time, she would be assigned to write the first of six Formative Portfolio Reviews addressing her performance on Medical Knowledge and Integrated Clinical Skills areas of mastery. To prepare, she would carefully review the written standards and review her performance data, noting strengths and weaknesses. She would have to come up with at least 3 concrete learning objectives to address her weaknesses, write them out and submit them after winter break just in time to meet with her mentor to discuss her progress. She would wonder about having to put in the time over her vacation but would be proud of the result and very motivated to address her weaknesses. She would prepare for her meeting with her mentor to make sure they had both the data and the time to begin discussing her long-term career plans.

In this example of a program of assessment *for* learning, we have tried to illustrate that in providing our learners and faculty with meaningful and rich data, we can support the development of medical competence in all its complexity. In this chapter we have reviewed the international discourse on medical competence and made the case that competence is best viewed as a commitment to a process of meaningful, effortful, and mindful practice in a range of relevant competency areas, which is structured by assessment programs and intermittently judged by experts as being "on course." Emerging competency areas, which are likely to be influential, are challenging us to consider medical knowledge and competence as situated in a social context (e.g., a team, a community of practice) rather than as an attribute of individuals [30]. Medical educators will need to commit to enthusiastic engagement in defining the important domains of medical competence as they evolve, refining assessments of medical competence, setting transparent standards for medical competence, and holding trainees, and ourselves, to these standards.

References

1. Leach DC. Competence is a habit. JAMA. 2002;287(2):243–4. PubMed PMID: 11779269.

2. Hodges BD. The shifting discourses of competence. In: Hodges BD, Lingard L, editors. The question of competence: reconsidering medical education in the twenty-first century. Ithaca: ILR Press; 2012. p. 14–42.

3. Emanuel EJ, Fuchs VR. Shortening medical training by 30%. JAMA. 2012;307(11):1143–4. doi:10.1001/jama.2012.292.

4. Albanese MA, Mejicano G, Mullan P, Kokotailo P, Gruppen L. Defining characteristics of educational competencies. Med Educ. 2008;42(3):248–55. doi:10.1111/j.1365-2923.2007.02996.x.

5. Accreditation Council for Graduate Medical Education. ACGME 2012 standards [Internet]. Chicago, IL: ACGME; 2000–2012 [cited 8 Jul 2013]. Available from: http://www.acgme-nas.org.

6. Royal College: Public [Internet]. Ottawa ON: Royal College of Physicians and Surgeons of Canada; 2013. CanMEDS Framework; 2005 [cited 8 Jul 2013]; [about 11 p.]. Available from: http://www.royalcollege.ca/portal/page/portal/rc/canmeds/framework.

7. Learning Technology Section. Learning outcomes [Internet]. Edinburgh, Scotland: Scottish Deans' Medical Curriculum Group; 2011 [cited 8 Jul 2013]. Available from: http://www.scottishdoctor.org/node.asp?id=outcomes.

8. Irby DM, Cooke M, O'Brien BC. Calls for reform of medical education by the Carnegie Foundation for the Advancement of Teaching: 1910 and 2010. Acad Med. 2010;85(2):220–7. doi:10.1097/ACM.0b013e3181c88449.

9. Almoallim H. Determining and prioritizing competencies in the undergraduate internal medicine curriculum in Saudi Arabia. East Mediterr Health J. 2011;17(8):656–62.

10. Gruppen LD, Mangrulkar RS, Kolars JC. The promise of competency-based education in the health professions for improving global health. Hum Resour Health. 2012;10(1):43. doi:10.1186/1478-4491-10-43.

11. Pangaro L. A new vocabulary and other innovations for improving descriptive in-training evaluations. Acad Med. 1999;74(11):1203–7. PubMed PMID: 10587681.

12. Meade LB, Borden SH, McArdle P, Rosenblum MJ, Picchioni MS, Hinchey KT. From theory to actual practice: creation and application of milestones in an internal medicine residency program, 2004-2010. Med Teach. 2012;34(9):717–23. doi:10.3109/0142159X.2012.689441.

13. ten Cate O. Entrustability of professional activities and competency-based training. Med Educ. 2005;39(12):1176–7. PubMed PMID: 16313574.

14. Dreyfus SE, Dreyfus HL. A five-stage model of the mental activities involved in directed skill acquisition. Berkeley, CA: University of California; 1980. Report No.: ORC 80-2. Contract No.: F49620-79-C-0063. Supported by the Air Force Office of Scientific Research (AFSC), USAF.

15. Batalden P, Leach D, Swing S, Dreyfus H, Dreyfus S. General competencies and accreditation in graduate medical education. Health Aff (Millwood). 2002;21(5):103–11. PubMed PMID: 12224871.

16. Ericsson KA. Deliberate practice and the acquisition and maintenance of expert performance in medicine and related domains. Acad Med. 2004;79(10 Suppl):S70–81. PubMed PMID: 15383395.

17. Leung ASO, Moulton CAE, Epstein RM. The competent mind: beyond cognition. In: Hodges BD, Lingard L, editors. The question of competence: reconsidering medical education in the twenty-first century. Ithaca: ILR Press; 2012. p. 155–76.

18. Eva KW, Regehr G, Gruppen LD. Self-assessment and It's role in performance improvement. In: Hodges BD, Lingard L, editors. The question of competence: reconsidering medical education in the twenty-first century. Ithaca: ILR Press; 2012. p. 131–54.

19. Gawande A. Top athletes and singers have coaches. Should you? New Yorker [Internet]; 2011. [cited 5 Jul 2013]. p. 17. Available from: http://www.newyorker.com/reporting/2011/10/03/111003fa_fact_gawande.

20. Triola MM, Pusic MV. The education data warehouse: a transformative tool for health education research. J Grad Med Educ. 2012;4(1):113–5. doi:10.4300/JGME-D-11-00312.1.

21. Ericsson KA. Enhancing the development of professional performance: implications from the study of deliberate practice. In: Ericsson KA, editor. Development of professional expertise: toward measurement of expert performance and design of optimal learning environments. New York: Cambridge University Press; 2009. p. 405–31.

22. Colvin GT. Talent is overrated: what really separates world-class performers from everybody else. New York: Portfolio; 2008. p. 228.

23. McGaghie WC, Issenberg SB, Cohen ER, Barsuk JH, Wayne DB. Medical education featuring mastery learning with deliberate practice can lead to better health for individuals and populations. Acad Med. 2011;86(11):e8–9. doi:10.1097/ACM.0b013e3182308d37.

24. van der Vleuten CP, Verwijnen GM, Wijnen W. Fifteen years of experience with progress testing in a problem-based learning curriculum. Med Teach. 1996;18(2):103–9. doi:10.3109/01421599609034142.

25. Williams RG, Klamen DL, White CB, Petrusa E, Fincher RM, Whitfield CF, Shatzer JH, McCarty T, Miller BM. Tracking development of clinical reasoning ability across five medical schools using a progress test. Acad Med. 2011;86(9):1148–54. doi:10.1097/0b013e31822631b3.

26. Epstein R. Assessment in medical education. New Engl J Med. 2007;356(4):387–96. Retrieved from: http://www.nejm.org/doi/full/ 10.1056/nejmra054784.

27. Driessen E, van Tartwijk J, Vermunt JD, van der Vleuten CP. Use of portfolios in early undergraduate

medical training. Med Teach. 2003;25(1):18–23. PubMed PMID: 14741854.

28. Van Tartwijk J, Driessen EW. Portfolios for assessment and learning: AMEE Guide no. 45. Med Teach. 2009;31(9):790–801.

29. Dannefer EF, Henson LC. The portfolio approach to competency-based assessment at the Cleveland Clinic Lerner College of Medicine. Acad Med. 2007; 82(5):493–502. PubMed PMID: 17457074.

30. Mylopoulos M. Competence as expertise: exploring constructions of knowledge in expert practice. In: Hodges BD, Lingard L, editors. The question of competence: reconsidering medical education in the twenty-first century. Ithaca: ILR Press; 2012. p. 97–113.

An Example of a Remediation Program

2

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Abstract

In this chapter, the authors briefly describe a clinical skills remediation program that developed as a result of the introduction of a comprehensive clinical skills exam for students at the end of their core clerkship year. They describe the diagnostic framework that guides their work, discuss lessons learned, and explore the impact of this remediation program on their institution. They place their work within the context of published literature on remediation in medical education and discuss experience-based best practices for developing new clinical skills remediation programs.

2.1 Introduction

We established the comprehensive clinical skills exam (CCSE) at the New York University School of Medicine in 2004 with federal funding.[1] While the overall purpose of the exam was to ensure that all our graduates had basic competency in primary care medicine, our specific goals for this exam were to:

1. Give students detailed, formative clinical skills feedback as they entered the last year of medical school

2. Provide clerkship directors with detailed curriculum evaluation

3. Prepare students for the United States Medical Licensing Exam (USMLE) Step II Clinical Skills

We were in good company. At that time, 75 % of US medical schools required a similar clinical skills exam [1]. That was the same year the USMLE added a standardized-patient based, multi-station clinical skills exam (Step II Clinical Skills) as a required component.

Our students are required to take the CCSE at the end of their core clinical clerkships. However, since 2005, when we thoroughly established the CCSE's feasibility, reliability, and validity, all students are required to pass the CCSE in order to graduate [2–5]. Students receive a report card designed to provide detailed formative feedback (see Appendix).

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2.2 The NYU CCSE Remediation Program

We committed to the development of a robust clinical skills remediation program based on our early experiences with the CCSE. The CCSE is an eight-station Objective Structured Clinical Exam (OSCE), in which trained actors ("standardized patients," or SPs) enact complex, authentic cases and then assess student performance using validated checklists of clinical skills. The core clerkship directors and their designated educators worked collaboratively to design this "final exam" for the clerkship year. We use state-of-the-art techniques to continue to develop cases across clinical disciplines that challenge our students to demonstrate their ability to apply their accumulated medical knowledge and "put it all together" by displaying integrated clinical skills. For a detailed description of our approach, see Zabar et al. [6].

In this exam, we measure four domains of competence across eight cases: communication skills (information gathering, relationship building, and patient education), clinical history gathering, physical exam skills, and clinical reasoning. Clinical reasoning is demonstrated in written patient notes as well as interpretation of laboratory, radiographic, and electrocardiogram data. In the first years that we conducted the CCSE, we held debriefing sessions with students immediately following the exam. Our goal was to fully understand and maximize the educational value of the CCSE. We encouraged students to review their exam results, to identify areas of strength and weakness, and to make learning plans for their final year of medical school. Through these debriefings, we were reassured that students recognized the salience and authenticity of the integrated clinical skills being assessed. We stopped conducting the debriefings when the exam became higher stakes.

Each of the exam's major domains was validated as having very good to excellent psychometric qualities (e.g., Cronbach's alpha for communication items 0.8–0.9, for physical exam items 0.4–0.6). The CCSE was then instituted as a pass–fail exam required for graduation. Initially,

roughly 5–10 % of students failed the exam each year based on a non-compensatory standard. This means that a student's scores had to be more than two standard deviations below the group mean on more than one component of the exam, or on the communication skills section alone, to fail. Of note, students were about 9 months from graduation when they learned of their exam failures, and most were in the midst of applying for residency positions. We required them to demonstrate their clinical competence in a reexamination in order to graduate from our medical school. Anecdotally, we know that while in most cases clinical educators familiar with the student's past performance could have predicted the CCSE failure, some failures came as a surprise. Our responsibility was to ensure that all the students who failed the CCSE were "on course" to graduate; our remediation program grew out of this responsibility. Every year after the pilot year, each student who failed was required to meet with us individually to "diagnose" what went wrong in the CCSE and to collaborate on designing a remediation "treatment" plan.

2.2.1 Example Cases

What were we up against? Consider the cases of Sylvia and David.

Sylvia's CCSE scores put her at the bottom of her class in clinical reasoning and history gathering. All eight standardized patients indicated they would not recommend her as a doctor to a friend; one said, "She was very nice, but seemed unfocused, lacking confidence". Faculty review of the video recordings of Sylvia's CCSE cases revealed her excellent rapport-building skills, but minimal relevant history gathering during the interview as well as superficial physical examination. Sylvia's patient notes lacked sufficient clinical

data and listed limited differential diagnoses. She had passed all her preclinical courses and clerkships. Feedback from clinical clerkships consistently suggested that she "read more."

Sylvia was not entirely surprised by her low exam score, since she felt that she had struggled on her clinical clerkships. She had hoped that her excellent interpersonal skills would "save the day" as they usually did. She was surprised to hear that most of her peers were able to perform a focused history and physical exam in the given time frame.

In reviewing her results with the remediation team, Sylvia recognized that she had an adequate knowledge base but she was less able than her peers to access that knowledge "in real time" with the patient and that she was not actively reasoning during the interview. Sylvia did not believe she could rely on a physical exam to provide clinical data and therefore approached it without enthusiasm. She also stated that she had never been directly observed performing a physical exam during her clerkships.

Could we get this student ready to graduate and begin residency training under time pressure? What strategies should we employ?

David performed in the lowest decile of the class in all four competency domains of the CCSE. Standardized patient comments were atypically critical. One SP reported that he was "unnecessarily rough while performing the physical exam," and another commented, "this is perhaps the

worst student I have ever seen." David had been disruptive in the CCSE orientation, making sarcastic comments challenging the usefulness of the exam. David was well known to the preclinical faculty for his consistently near-perfect medical knowledge test scores. His record showed no formal documentation of problems, but course directors commented that David was routinely troublesome and distracting in lectures and that he frequently missed assignment deadlines in seminars. Clerkship directors remarked on his considerable knowledge base and excellent oral and written presentations of clinical cases, but also noted that he "could be arrogant, especially to his peers." By talking directly with attending physicians who had supervised him, the remediation team confirmed that David had performed well clinically on clerkships.

David was astonished when he learned he had failed the CCSE. He argued that "nobody takes this exam seriously" and rejected detailed feedback from standardized patients as "ridiculous." On review of his own abbreviated clinical notes from the CCSE and example notes written by peers, he was easily able to recall and present the cases and to generate reasonable differential diagnoses and case management plans on the spot.

Ultimately, he admitted to intentionally "blowing" this exam because he was annoyed at having to take the exam at all. He denied feeling any regret at having done this, just annoyance that he would now have to "waste his time" dealing with the consequences.

We had 6 weeks to help David turn his exam performance around so that his CCSE failure would not be flagged on his residency applications. Was this possible?

2.2.2 Remediation Cases

Guided by our experience as medical educators of students and residents, and our own collective clinical reasoning skills, the remediation team drafted a plan for each student, calling in others when special expertise was needed. We met weekly to share the design and implementation of learning and practice strategies and to monitor each student's progress. We also designed a three- or four-case "make-up" exam to be conducted the week before medical school transcripts were to be sent to residency programs. Consider the outcomes for Sylvia and David.

Sylvia worked with the remediation team diligently and collaboratively to develop a remediation plan. She enjoyed using the CCSE data to understand her specific areas of weakness; she was eager to address these areas and sought out her favorite clerkship faculty members to help her practice both clinical reasoning and physical exam skills. She devoured reading assignments about the cognitive science of clinical reasoning, wrote the required self-reflections, and passed the remediation exam. A year later she wrote an email thanking us for working with her to become a better doctor; she reported that she was doing very well as an intern and gave us permission to talk with her residency program director who confirmed that she was doing "well enough."

David agreed to participate in a remediation plan but did not contribute to its development. As directed, he wrote a 500-word essay analyzing his intentional failure of the CCSE. The essay focused on his obligation to strive for excellence as part of our institution's expectations of medical professionalism. He reluctantly agreed to

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meet three times with a senior faculty member whom we deputized specifically to work with this student. With this faculty member, David reviewed his video recordings from the CCSE. They discussed norms of behavior for the medical profession through readings and case discussions. David took and passed the remediation CCSE. No further episodes of frankly disruptive behavior were reported as he completed his required rotations and graduated. He did not respond to our requests for follow-up or give us permission to speak with his Program Director.

2.3 Outcomes

The remediation team has had a high success rate since its inception, receiving a great deal of positive feedback from students for the specific, targeted learning plans they helped to create. Most students describe the remediation process as something they initially dreaded but that ultimately made them more aware of their own learning needs. Several students who failed the CCSE in the past few years have chosen to delay graduation, spending another year in medical school to work on their skills. Since 2004, fewer than five students have chosen not to graduate or were not allowed to graduate due to poor performance. In each of these cases, the CCSE and the remediation process provided necessary objective evidence to support these decisions. The rest, like Sylvia and David, successfully completed the remediation program and moved on. After 10 years of experience, we believe that most students who fail the exam are remediable in the short term (i.e., fewer than 3 months). With intensive focus on the skills assessed in the CCSE, students have demonstrated significant improvement and have helped themselves get "back on course."

2.4 Framework to Describe CCSE Failures

Our remediation work is organized in part by a set of empirically derived reasons behind student failure of the clinical skills exam (Table 2.1).

2.5 Structuring Remediation

Students who fail the CCSE are required to participate in remediation. They are responsible for actively engaging with the remediation team to develop an individualized remediation plan, to initiate and complete the remediation activities that were agreed upon, and to take and pass a make-up exam that closely parallels the CCSE.

We inform students that brief reports of their progress during remediation will be made to the Dean of Student Affairs. Both the remediation team and the Dean of Student Affairs are committed to each student's privacy, although the remediation may become part of the student's official academic record (see Chap. 18). The CCSE Co-Directors have formed a team of expert educators as a resource for investigating additional evidence of clinical competence, facilitating

Table 2.1 Categories of the underlying difficulties identified in students who failed the CCSE

Category of difficulty	Descriptors of these students	Where to find useful models or remediation strategies in this book
1. *Preexisting academic issues and isolated clinical skills deficits*: students in this category may have a previously identified learning disability, history of poor academic performance in medical school, and/or are on a dual degree/transfer/other nontraditional educational path. They demonstrate specific areas of weak clinical skills. $N=27$ (56 %)		Chaps. 3, 8, and 9
Insufficient working knowledge base	• Misses critical features of common clinical patterns (lacks well-developed clinical scripts)	Chaps. 3, 6, and 13
	• Fails to gain patient confidence, even with adequate interpersonal skills	
	• Performs at or below the mean in standardized knowledge tests (e.g., USMLE, Shelf exams)	
	• Has inconsistent academic performance, particularly on clerkships	
	• Does not have well-developed study strategies (may rely on "just reading more" or "trying harder" without asking for help)	
	• May be aware of his or her lack of knowledge relative to peers	
	• Avoids contact with faculty rather than actively seeking strategies to address areas of deficit	
Insufficient communication skills	• Despite positive attitude toward this competency domain, lacks specific skills in information gathering, relationship building or patient education	Chaps. 4 and 10
Insufficient physical exam skills	• Lacks the knowledge or skills required to perform effective physical exams	Chaps. 5, 6, and 8
	• May have general or specific problems (e.g., student may only show skills deficits on neurology exam)	
	• Exhibits timidity around physical exam	
	• Believes physical exam information is not valuable	
Inadequate clinical reasoning	• Gathers copious information without evidence of inductive or deductive reasoning	Chaps. 3, 6, and 9
	• May have coexisting deficit in knowledge base or slower than average cognitive processing speed	
2. *Specific testing issues or organizational problems*: students with poor test results due to test-specific stressors or fundamental underlying organization difficulties. $N=11$ (23 %)		Chaps. 9 and 13

(continued)

Table 2.1 (continued)

Category of difficulty	Descriptors of these students	Where to find useful models or remediation strategies in this book
Performance anxiety	• Has intense anxiety about performing on the exam or being directly observed • Has a history of debilitating anxiety in other performance situations • May have "adrenergic" symptoms (e.g., tremor, sweating, palpitations, diarrhea) and physical agitation	Chaps. 10, 11, and 12
Poor organization/time management	• Comes late to meetings and misses deadlines • Has a messy clipboard or disheveled white coat • Is perceived as smart and engaging, but disorganization interferes with learning and patient confidence	Chaps. 8, 9, and 12
Expertise reversal effect	• Student with a neutral or positive attitude toward the exam but functions at a clinical level beyond that which is targeted by the exam • Recognizes the clinical "script" in the case, rapidly and accurately assesses the patient—asking all pertinent negatives to rule out likely competing diagnoses • May not thoroughly collect all CCSE checklist data, which results in a low "percent well done" score • May not write thorough note, limiting documentation of clinical reasoning • Lack of awareness of or rejection of medical student role in exam	Chaps. 1, 2, and 6
3. *Extenuating psychosocial factors*: students with psychiatric disorders, substance abuse, eating disorders, and situational distress. $N=7$ (15 %)		Chaps. 8, 9, 11, 12, and 18
• Has a prior diagnosis or meets diagnostic criteria for a psychiatric diagnosis, most commonly anxiety or depression • Demonstrates distress that raises concern for student's well-being • May have had recent positive or negative life event (bachelor party, new baby, illness, or death of family or friend)		
4. Nonverbal *learning issues*: social awkwardness, autism spectrum disorder. $N=4$ (9 %)		Chaps. 10 and 12
• Has very low communication skill but otherwise high competency scores • Is described by SPs as awkward, shy, with limited eye contact, difficulty in addressing emotional issues, intimate clinical symptoms, or performing the physical exam • Reports a history of interpersonal awkwardness, limited social life, and a preference for working alone • Suspects he or she needs to work especially hard to have rapport with others • Has limited ability to self-assess or strategize around the deficit • Is eager to improve his or her performance		
5. *Attitudinal issues*: lack of professionalism. $N=14$ (30 %)		Chaps. 2, 7, 8, 13, 14, 15, and 17
• Negative rapport (limited professionalism or cultural competency) • Does not meet behavioral conduct standards • Offends or is disrespectful to SP, staff, or faculty • Has pattern of expressing provocative attitudes • Challenges validity of exam in an argumentative manner • Dismissive and/or overly charming • Blames others for own difficulties (e.g., "No one told me this was required") • Has an attitude of superiority, creates friction with colleagues, which initially may be reinforced by faculty members (e.g., "I am better than my peers") • Difficulty with perspective-taking (limited cultural competence)		

The five categories, each containing subcategories or "presentations," define groupings of issues, which can be addressed using similar strategies. Categories are not strictly mutually exclusive. Between the years 2006–2009, 53 of 500 students failed the CCSE and required remediation. The number and proportion of the students from this time period is noted

remediation activities, regularly reviewing and documenting the students' progress, and ultimately determining whether the student successfully completed the remediation plan.

For students like Sylvia, who actively embrace remediation by collaboratively developing and following an individualized learning plan, demonstrate motivation and persistence, and show receptiveness to feedback, remediation increases self-awareness and confidence. The prognosis for these students is excellent, in large part due to their extra effort in ensuring their own clinical skill development (see Chap. 13).

Our program's success stems from the active engagement of students with their own development as physicians. Repetitive rehearsal for the exam itself is not predictive of success. Even when a student's difficulties are limited to performance anxiety, rehearsal is not enough. The remediation team's job is to frame remediation work in the context of each student's professional goals and both the institution's expectations for professionalism.

David, for example, was not expected to rehearse for the make-up exam since past performance indicated that he was perfectly capable of performing well. Instead, he was expected to address his attitudes, beliefs, and professional behaviors toward the exam. His remediation consisted of writing exercises and working with an authoritative role model who took a hard line with him on professionalism. David respected this approach. The long-term prognosis is not clear. In the short term, David's behavior fell in line with professional expectations. The fact that remediation is required has significantly improved our success in working with students like David whose initial motivation is limited.

2.6 Benefits to the Medical School of Having a Remediation Program

Identifying and remediating serious clinical skills deficits should take place as early in medical training as possible, but it is not uncommon for "hard stops" to be limited to the period following

clinical clerkships [7]. A program of student assessment that is soundly aimed at enhancing learning is the element that prevents a remediation program from being anything other than, as Cleland says, "examination coaching." It makes sense that targeting remediation earlier in the curriculum has a better chance of producing long-term benefits, but a more holistic and comprehensive assessment approach must be in place throughout the curriculum (see Chap. 1).

Feedback from students about their CCSE experiences has helped us to reform the way we assess students throughout the curriculum, to detect clinical deficits needing earlier attention, and to ensure that all our students' training experiences are enriched by the benefits we have seen from students' engagement in the CCSE remediation program. We are in the process of implementing a comprehensive program of assessment with a focus on assessment *for* learning, which is mastery oriented and managed and accessed by students through an academic portfolio (Chap. 1).

Our medical school's curriculum has benefited from CCSE performance and remediation data. For instance, when we discovered that many of our students had difficulty with the same area of competence (e.g., reading and interpreting an electrocardiogram, conducting a focused neurological exam), we addressed these deficiencies through partnering with preclinical and clinical course directors to make targeted adjustments in the curriculum.

2.7 Willingness to Fail a Student

Prior to the implementation of our remediation program, even the most experienced, frontline clinical educators were reluctant to label a student as having weak clinical skills. There are many reasons for this [8]. Our efforts over the past decade have provided clinical faculty with a shared language with which to discuss students' clinical competence. By demonstrating that remediation can be successful, we are encouraging faculty to participate in early identification of struggling students. In general, remediated students

have been good ambassadors for the remediation program. The "buzz" on the program has been generally positive, respectful, and supportive. Through this mechanism, we have had more students self-identify as needing help and more faculty members seeking support in conducting remediation (see Chap. 19). As these efforts are absorbed into the earliest years of training, they are taking on a tone of development and prevention, rather than remediation.

As accreditation expectations for residency programs increasingly emphasize clinical outcomes and clinical skills portfolios, faculty seek our help to create similar remediation programs at the GME level.

While the published literature is limited, we are aware that we are not unique in addressing these issues programmatically [9–12]. Through both published reports and personal communications, we are heartened by the number of remediation programs that are initiated and championed by a particular member of the faculty who is passionate about this domain of education (like many of the contributors to the book [10]). A consensus on best practices is evolving. Short-term outcome data are encouraging [11, 12], and we know there is much more to come. Related efforts, which are informative to medical education, are taking place in other health professions [13]. We enthusiastically agree with the call for multi-institutional, outcomes-based research [1] (see Chap. 21).

Emerging Best Practices for Remediation Programs Include:
- Support from Dean for Student Affairs or Office of Medical Education/Curriculum Committee
- Mandatory participation, rather than "suggested" for struggling students
- Learning diagnosis/es based on multi-source data: preclinical and clerkship performance, as well as detailed assessment of the underlying competency issues

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- Collaborative development of an individualized remediation plan
- Frequent monitoring and documentation of progress
- Development of longitudinal faculty–student relationships
- Tailored remediation strategies to individual needs
- Use of variety of remediation methods
- Explicit mention of attitudes and motivation
- Teaching of goal-setting, strategic planning, self-monitoring, and self-analysis
- Emotional support and rigorous, clear expectations
- Development of faculty mentoring, facilitation, direct observation, and feedback skills

2.8   Remediation: What Works?

There is as yet little evidence supporting how and why remediation in medical education works. Most recently, Cleland et al. conducted a structured, rigorous review of the literature to explore this question (see Chap. 21). So far, research findings are of limited generalizability. Very few reports are of complex or holistic remediation approaches. The reports show that a great deal of faculty time is committed to remediation, and outcome data demonstrate that most students go on to graduate [7]. They also found that while few programs report theoretical frameworks driving their work in remediation, those that do focus on cognitive capacities of students, such as self-regulation, metacognition, and reflection, as well as the giving and receiving of feedback, all of which is firmly supported by the general education literature [14].

Since our program began, we have remediated 100 students who have failed the CCSE. We have expanded our work to include other students and residents referred to us and shared our work with educators working at every point in our medical school's training continuum. Until we can establish satisfying criteria-based standards for clinical skills

assessment, we rely on normative data to give students specific and reasonable goals. The CCSE report card given to all students is particularly useful feedback because it shows individual performance relative to peer group (see Appendix). This has served as an incentive to participate in remediation for students who did not previously see themselves as veering off course. For students who did not fail but who had specific areas of weakness, the report card can also serve as a cautioning voice in preparation for the USMLE Step II CS.

2.9 Unprofessional Behavior Presents as Clinical Incompetence

An important lesson from our experience with standardized patient exams is that unprofessional behavior presents as clinical incompetence, even when students have the capacity to be clinically competent. Although the majority of our remediation students are likely to have negative feelings about the exam, they are eager to discuss their performance, do so respectfully and in partnership with us, exhibit motivation to work on clinical deficits, and strive for excellence. However, up to a third of students initially approach the remediation process with dismissive disbelief ("there is no way I have worse clinical skills than my classmates"), disrespect ("what do you people want from me?!"), attitudes inconsistent with good patient care ("the patient should be happy as long as I get the right diagnosis!," "It is not my job to deal with crazy people"), lack of motivation ("I am going into a non-patient care specialty, so I don't need to be able to talk to people"), and lack of self-awareness ("I function at the level of a good intern already, I don't need this"). In these cases we try to identify whether this behavior is unique to the CCSE or is part of a pattern of behavior by consulting with clinical educators who have worked directly with the students in authentic clinical situations overtime.

A few students each year have "unprofessional" behavior as the *primary* reason the student failed the exam, even though it is clear that the student is capable of adequate performance in all competency areas. This is the group of students we find most challenging, and for whom we feel we have the least effective remediation strategies.

Strategies we have employed for unprofessional behavior include direct confrontation about the lack of professionalism with reminders that passing the CCSE and the USMLE Step 2 Clinical Skills exam are necessary for professional advancement, discussions with the students about moral reasoning (see Chap. 7), reflective essays written by students to demonstrate knowledge and awareness of the elements and expectations of medical professionalism (see Chap. 14), and deputizing high-level authorities in a clinical field of interest (e.g., most often full professors) to work with the student. In some cases we have used a version of the program described in Chap. 7 to assess and then make summative conclusions about such students.

Educators working on a remediation team must be prepared to approach students who need help but are confrontational or disrespectful. Remediation teams can work together to provide a "team awareness" of students' issues that leads to a wider array of options for engaging students who are upset or argumentative.

2.10 "Expertise Reversal" Effects

The CCSE is not an easy exam, and scores do not have a ceiling effect. Over the years, the mean score (% Well Done) on each of the four competency areas hovers around 55 %. It has been our experience that occasionally students who fail claim that the CCSE tripped them up because it was "too easy" for them. In most of these cases, there is ample supporting evidence that the student requires remediation of clinical skills. Very rarely, we have worked with students who failed the CCSE who, based on their level of skills and abilities, should not have. During the exam, they tend to collect very limited history data, they perform a highly focused physical exam, and they demonstrate strong communication skills and accurate clinical reasoning, although their patient notes lack detail.

Students who may be operating at a more expert level than their peers may have extensive knowledge structures called schemas stored in and accessible from long-term memory [15] (Chaps. 6 and 19). Therefore, they can use lim-

ited working memory to perform complex tasks automatically or seemingly intuitively. Because experts can accurately "jump to conclusions," they may underperform on assessments like OSCEs, where competence is based on demonstrating the series of steps required by novices to come to an accurate conclusion. This seeming "de-skilling" of experts under circumstances designed for novices is a phenomenon known to the cognitive psychology community as expertise reversal [16]. We suspect expertise reversal effects when we meet a student with extensive clinical experience prior to medical school (e.g., a nurse, physician's assistant, EMT, or engineer) or students who are uniformly judged as exceptionally sophisticated by clinical faculty, or both. In these cases all that is required for effective remediation is "examination coaching" strategies to assist the student in passing high stakes performance exams like the CCSE.

2.11 Human Resources for Remediation

Our CCSE remediation team consists of clinician educators, one each from pediatrics (L.T.), internal medicine (A.K.), and surgery (J.O.) (10 % effort each). In addition, we have a research scientist/data analyst (10 % effort) and a full time project assistant who plans and implements the CCSE, with the assistance of temporary staff on the days of the exam, and then supports the remediation process. In the past 2 years, we have added an administrative director (S.Y.) (10 %). Remediation students are referred to any or all of the following specialists as appropriate: an organizational psychologist with experience in improving professional verbal and nonverbal communication skills that are key to patient encounters (see Chap. 10), a drama therapist (who also recruits and trains our SPs) who coaches students to practice clinical communication skills with an SP, a learning specialist who conducts neuropsychological assessments and coaches students with learning disabilities (see Chap. 7), and a psychiatrist with expertise in medical student mental health. In most cases remediation resources are either grant-funded or provided by the Dean's Office.

2.12 Do We Have a "Theory of Remediation in Medical Education"?

The word *remediation* is provocative. Lay people are truly perplexed ("What does that word mean?"), fellow medical educators sigh with relief (e.g., "Thank goodness, I thought I was all alone in this work!"), and students physically shrink away ("How horrible, I thought I was getting by").

As is clear from the many diverse contributions to this book, remediation is an area of medical educational practice drawing on many theoretical frameworks and learning theories. But it is also, in and of itself, becoming a distinct area of research and theorizing (see Chaps. 1, 19, and 21). A set of principles is emerging upon which to base our practice and to identify gaps in our knowledge (see above).

2.13 Conclusion

If we are to honor our social contract with the public and maintain our integrity as a medical profession, we will need to continue to improve our ability to assess and learn from our own clinical performance and that of our trainees. As assessment strategies in medical education become more sophisticated with the implementation of programs of assessment *for* learning (see Chap. 1), ideally remediation efforts will be better integrated throughout the curriculum rather than as separate formal programs for students with late-identified deficits in clinical skills. Until then, we must continue to respond to clinical deficits with the full force of our creativity and commitment, ensuring that our graduates are prepared to be safe, effective, and responsible physicians. We share our experience to contribute to the conversation about creative and innovative approaches to this work springing up in all realms of health professional education.

Appendix

<<DATE>>

Dear <<STUDENT>>,

This past February, third-year medical tudents at NYU SoM were required to participate in the Comprehensive Clinical Skills Exam (CCSE), a half-day 8-station Objective Structured Clinical Exam (OSCE) that tested core clinical skills across all clerkships. The CCSE is designed to assess clinical competence based on standards determined by the NYU SoM clerkship directors as supported by the Dean's Office and consistent with structure of the USMLE Step 2 Clinical Skills Exam.

Analysis of student performance on the exam enables us to: 1) provide students with individualized feedback on their clinical skills in comparison to class results; 2) prepare students for the USMLE Step 2 CS exam, a requirement of Medical licensing ; and 3) provide NYU SoM with valuable feedback on the effectiveness of our curriculum.

The CCSE report card is a summary assessment of your performance across all stations of the exam distilled into four separate scores—communication, history gathering, physical exam, and clinical reasoning as demonstrated in the patient note.

Please be assured this is a highly standardized and reliable exam.
We encourage you to use this information to reflect on your own clinical skills, taking advantage of your fourth year of medical school to improve any areas of weakness.

Satisfactory completion of the CCSE is a required component of graduation. Overall performance on the CCSE will be indicated on your final transcript as a "pass" or "fail."

Poor performance criteria include:
> performance at or below the bottom (10th) decile in two or more competency areas (as listed above) or
> markedly poor performance in communication alone.

Students who failed this exam are identified in the enclosed report card and will be provided with a more detailed analysis of their performance as part of an individualized remediation program. Following remediation, such students will be required to pass a new exam in order to receive a passing grade on their transcript. If you have any questions or concerns about your performance, the exam or remediation opportunities, please contact <<PROGRAM COORDINATOR>> at <<PHONE>> or alternatively via email at <<EMAIL>>.

Sincerely,
Co-Directors of CCSE and Deans of Curriculum and Student Affairs

<<STUDENT>>

Overall Performance: Fail

CCSE Reporting Guide

Communication
Standardized patients in each of the eight scenarios rated student communication skills, based on four components of the medical interview: organization, information gathering, relationship building, and patient education and counseling. Scores are reported as percent items from a standardized communication checklist rated **done well**.

History Gathering
Standardized patients rated student history gathering skills using content-specific history checklists developed by the relevant clerkship director(s). Scores are reported as percent of items from the history checklist rated **done well**.

Physical Exam
Standardized patients recorded whether each student performed the expected physical exam maneuvers and the level of skill with which the exam was performed based on specific behaviors defined by the clerkship directors. Each standardized patient was trained in the physical exam by a clerkship director or an experienced NYU attending designated by the clerkship director.

Overall scores are reported as percent of expected physical exam maneuvers **done well** by the student.

Physical examination scores are also provided for each case as such skills may be quite specific.

Clinical Reasoning
You were asked to write patient notes after each of seven cases. Faculty, using a standardized grading rubric, rated the clinical reasoning demonstrated in each of those notes, focusing on organization, identification of relevant findings and differential diagnoses. Faculty then rated overall clinical reasoning on a 4-point scale (1=poor; 2=fair; 3=good; 4=excellent). These overall ratings were averaged across the seven cases to arrive at a summary Clinical Reasoning score.

We also provided you with information on the percent of accurate findings notes and the number of notes rated by faculty as "organized".

How to Interpret the Results:

Your individual scores in each of the above skill areas are displayed in the following graphs. We have also provided you with the average score of your class to aid in interpretation. Class scores one standard deviation **above** the mean and one standard deviation **below** the mean are displayed with an error bar.

Based on careful analysis, student performance may be interpreted as follows:

Students performing **one or more standard deviations above the mean** likely possess *excellent* skills and will likely perform well on similar tests in the future.

Students **within one standard of the mean** likely possess at least *adequate* clinical skills and are likely to pass similar tests in the future, but they may have specific areas in need of improvement.

Students **with scores more than one standard deviation below the mean** possibly have *weak* clinical skills, as measured by this type of exam, and will benefit from an increased effort to improve such skills through practice or, in some cases, specific remediation. Test anxiety may contribute to poor performance on the exam; practice often helps this situation.

Note: % Well Done = percent of rated items for which you received a well done (vs. not or only partly done). A 0% means that you didn't get full credit for any of the assessed items. Missing data are indicated by **N/A** for Not Available.

YOUR SCORES ON THE 2013 CCSE Communication,

History Gathering, Physical Examination

OVERALL

<<STUDENT>>: Communication, History Gathering and Physical Exam Scores
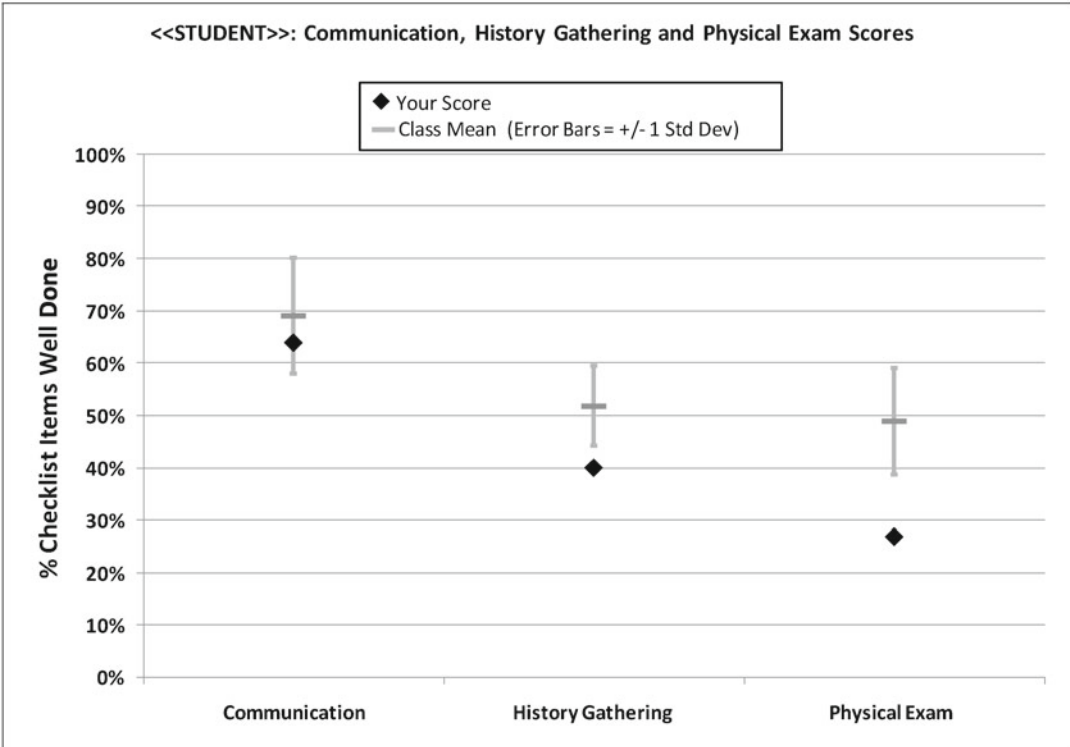
Due to the specificity of physical examination skills, we also provide you with percent well done scores for the assessed physical examination skills within each of the 6 physical exam cases.

Physical Examination Case Specific Scores	YOUR SCORE % Done Well	CLASS MEAN % Done Well	CLASS RANGE 1 Std Dev Below Mean	CLASS RANGE 1 Std Dev Above Mean
Abdominal Exam	35%	45%	26%	66%
Musculoskeletal Exam	30%	43%	27%	59%
Cardio/Neck Exam	20%	38%	17%	59%
Neurological Exam	8%	55%	37%	73%
Cardiovascular/Pulmonary Exam	40%	51%	35%	67%

OVERALL DISTRIBUTION FOR CLASS (N=125)

Mean Score = 69.0%
SD = 11.1%

1 Std Dev
Above
the Mean

1 Std Dev
Below
the Mean

Communication Score (% Well Done)

Mean Score = 52.0%
SD = 7.4%

1 Std Dev
Below
the Mean

1 Std Dev
Above
the Mean

History Gathering Score (% Well Done)
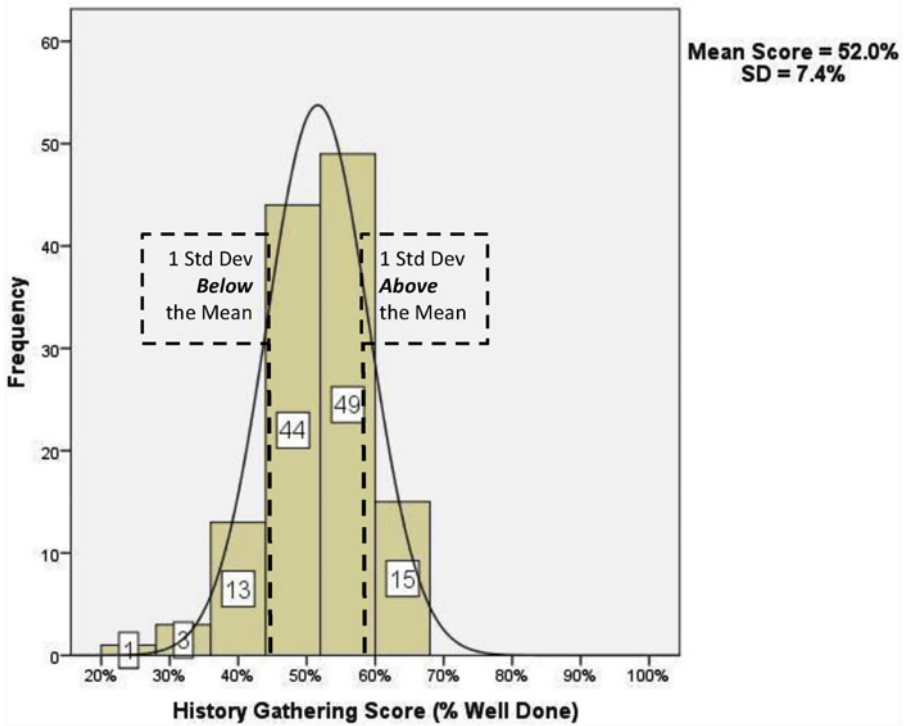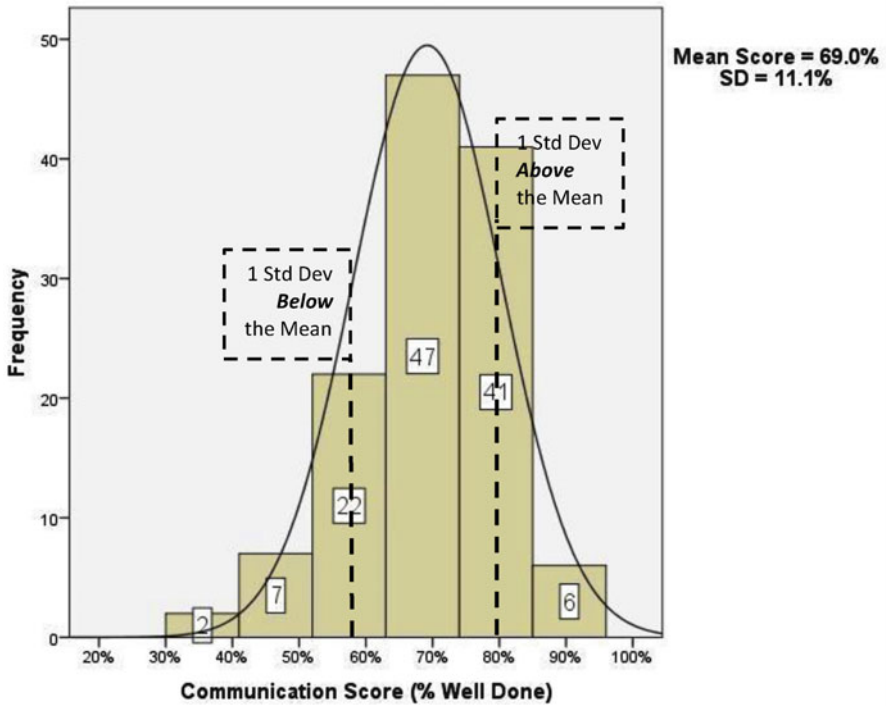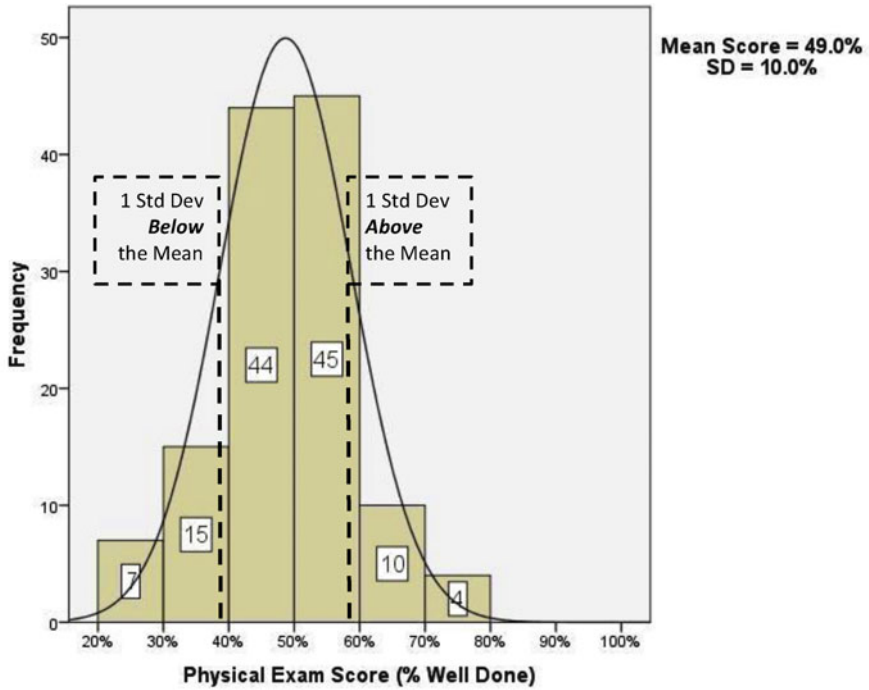
Mean Quality of Clinical Reasoning (scale: 1 – 4)

YOUR SCORES ON THE 2013 CCSE
Clinical Reasoning
OVERALL

Clinical Reasoning (from Patient Notes)

? Your Score
— Class Mean (Error Bars = +/- 1 Std Dev)

Mean Faculty Rating (7 Patient Notes)

4.0	Excellent
3.5	
3.0	Good
2.5	
2.0	Fair
1.5	
1.0	Poor

Clinical Reasoning

% Notes with Clinical Reasoning Rated as Good or Excellent

■ % of YOUR Notes
■ Mean % of CLASS Notes

57%   42%
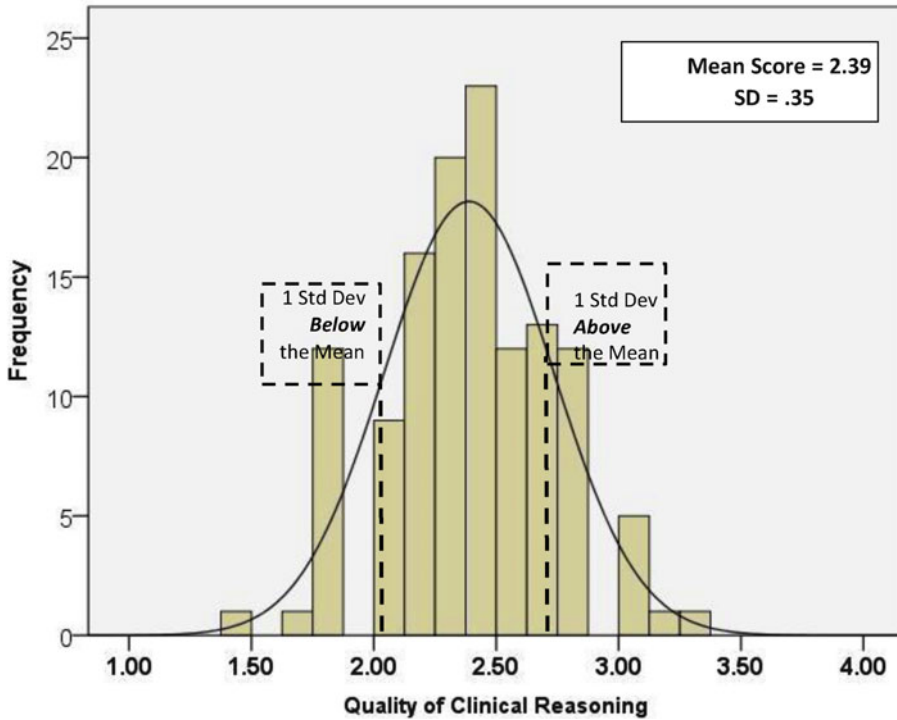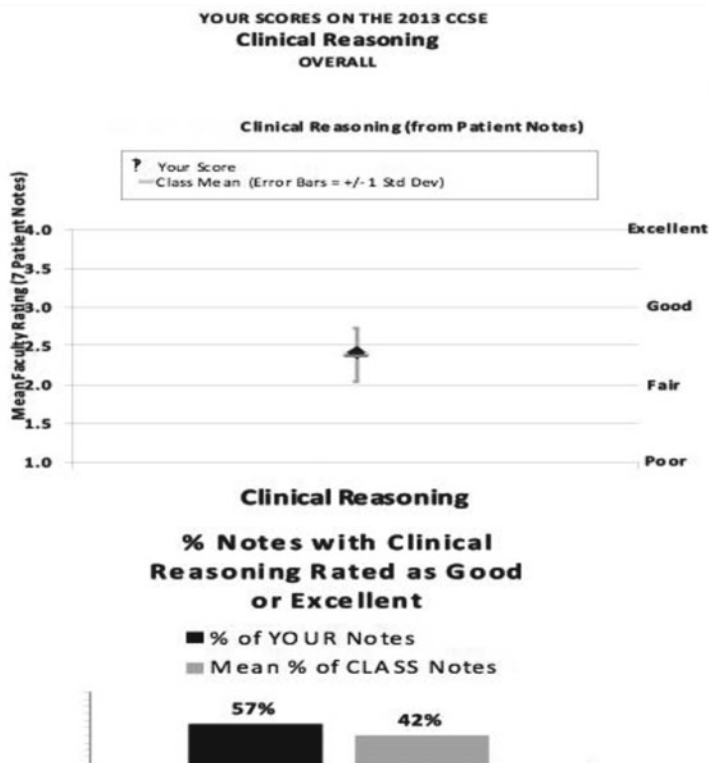
Additional Information on Your Patient Notes

Patient Note Scores	Your Mean Score (Std Dev)	Class Mean Score	Class Distribution	
			- 1 Std Dev	+ 1 Std Dev
% Accurate **History** Findings Noted	50%	53%	45%	61%
% Accurate **Physical Exam** Findings Noted	40%	41%	30%	52%
# of Notes Rated as "Organized"	4	6	5	7

STANDARDIZED PATIENT GLOBAL ASSESSMENT

Standardized Patients were asked to indicate on a scale of 1 to 4 (1 being the lowest and 4 being the highest) if they would recommend you to a family member or friend who was seeking a physician. This score can be viewed as reflecting an aspect of "patient satisfaction."

Note that these ratings are not used to determine CCSE pass/fail decisions. We nonetheless believe these ratings are a good indication of the Standardized Patient's impression of the encounter and suggest how patients might perceive an encounter with you under similar circumstances.

The table shows how many of your eight cases fell into each of the four "recommend" rating categories. The table also displays the number of cases in each "recommend" category, averaged for the entire class.

SP GLOBAL RATING	1 (lowest)	2	3	4 (highest)
# of YOUR cases*	2	5	1	0
# of cases, averaged for the class	0-1	1-2	4-5	1-2

*If the number of your cases does not add up to eight (the total number of cases in the exam) it is due to missing data

Practical Advice for Review: The Patient Note

The patient note serves many important purposes. It is the only way to document your encounter with a patient. It must communicate clearly to other health care providers and to you the next time you interact with the patient. On the following page we share our insights and advice on writing a patient note, having read CCSE students' patient notes from each of the eight stations.

All students saw the same patients and had equal time and space to document the encounter. However, there was a wide range of quality among students' notes.

To illustrate the technique behind writing a good patient note, we crafted a note based on the following case, which is *not* a case from the CCSE:

Anthony is a 6-year-old asthmatic who was brought into the emergency room by his mother after a cyanotic episode. You have been assigned to the case.

Your tasks:
139.   Take a focused history
140.   Perform a respiratory and cardiovascular exam
141.   Discuss possible differential diagnosis and initial work up

A complete biomedical database gives a detailed and accurate picture of the patient's experience of the

Always begin with the chief complaint

HISTORY: Include significant positives and negatives from history of present illness, past medical history, review of system(s), social history, and family history.

Pertinent negatives and positives are critical

CC: 6 yo Latino m with h/o asthma c/o "turning blue".
HPI: 6 yo m with h/o worsening asthma over the last 6 mo. The pt had been stable over last 2 wks on Flovent and Singulair when he awoke at 3 AM coughing c/o chest pain. Mother went immediately to his room where she found him coughing and holding his chest when he "turned blue" and became unresponsive x 3min. Mother denies body stiffening, shaking, urinary or fecal incontinence, or postictal behavior. Pt had been otherwise well day before, with good appetite with normal activity. Denies recent fever, URI symptoms, or h/o palpitations. Denies other episodes of syncope but did have one other "choking episode" at night when he turned "a little blue" but did not "pass out".

PMH: none except asthma.
Meds: singulair, flovent and prn albuterol.
FH: father + epilepsy, sister + asthma; No h/o cardiac disease or sudden death
SH: + parents recently separated, living with mother and sister, mother + financial stressors

PHYSICAL EXAMINATION: Indicate only pertinent positive and negative findings related to the patient's chief complaint.

Only use standard abbreviations!

Alert and responsive, cooperative with exam, in no acute respiratory distress
HR 96, RR 24, BP 106/68
Car: Regular rate and rhythm, normal s1s2,
No murmurs, rubs or gallops. PMI in 5th intercostals space, midclavicular line.
Resp: Chest normal shape and diameter, no retractions or nasal flaring.
Lungs clear to auscultation bilaterally with good air entry, normal IE ratio. No rales, rhonchi or wheezing appreciated.
Ext: no clubbing, cap refill < 2 sec
Neuro: CN II-XII intact, nl DTR throughout, nl strength throughout

DIFFERENTIAL DIAGNOSIS: **In order of likelihood** (with 1 being most likely), list up to 5 potential or possible diagnoses for this patient's presentation (in many cases, fewer than 5 diagnoses are likely):	NEXT STEPS: List immediate plans (up to 5) for further **diagnostic workup** and/or **therapeutic management:**
1. GE reflux with acute aspiration	1. Chest x-ray
2. Cardiac arrhythmia (prolonged QT vs. SVT)	2. Esophageal impedance
3. Seizure	3. ECG
4. Ext. air way compression	4. EEG
5.	5. Referral to social work

Workup must be consistent with history and DD.

A good workup plan addresses symptoms and discomfort, patient education, and next steps.

Every diagnosis in your differential must be supported by your history

In order of likelihood (with 1 being most likely), list up to three possible diagnoses for this patient's presentation. Provide supporting evidence *for* and *against* each diagnosis based on your findings (history and physical) from the case.

Diagnosis	Supporting Evidence for diagnosis	Evidence Against diagnosis	Diagnostic Work-up: Diagnostic tests AND anticipated results for given diagnosis
1. GE reflux with acute aspiration	-coughing -chest pain -cyanosis -symptoms positional (occurred when lying down)	-no prior history -no h/o vomiting -normal lung exam	Chest x-ray – possible infiltrate Esophogeal impedance – evidence of reflux Bronchial alveolar lavage – lipid laden macrophages (evidence of chronic aspiration)
2. Cardiac arrhythmia (i.e., SVT)	-chest pain -syncopal episode -cyanosis	-Regular rate and rhythm on exam -No h/o palpitations -No prior h/o syncope -No family h/o cardiac disease/arrhythmia	ECG: SVT rhythm Holter monitor: SVT rhythm
3. Seizure	-Syncopal episode -Family h/o epilepsy	-no tonic-clonic movements -no incontinence -no prior seizure hx	-EEG – seizure activity

For the **most likely diagnosis** what would be the next steps in **management**?

    Monitor 02 saturation, oxygen as needed

    Anti-reflux medications (histamine-2 receptor antagonist or proton pump inhibitor)

    Consider antibiotic treatment for aspiration pneumonia if evidence of infiltrate on CXR

    (ampicillin-sulbactam).

References

1. Hauer KE, Hodgson CS, Kerr KM, Teherani A, Irby DM. A national study of medical student clinical skills assessment. Acad Med. 2005;80(10 Suppl):S25–9. PubMed PMID: 16199452.
2. Tewksbury L, Paik S, Richter R, Gillespie C, Kalet A. Quality and quantity of patient contact correlates with performance on a clinical skills exam. Poster presented at PAS annual national meeting, 5–8 May 2007, Toronto.
3. Tewksbury L, Richter R, Gillespie C, Kalet A. Medical students with lowest performance on a clinical skills exam poorly self-assess ability. Poster presented at COMSEP annual meeting, 16–19 March 2006, Salt Lake City, UT.
4. Tewksbury L, Gillespie C, Richter R, Kalet A. The validity of a comprehensive clinical skills exam. Poster presented at COMSEP annual meeting, 16–19 March 2006, Salt Lake City, UT.
5. Tewksbury L, Zabar S, Chase JM, Gillespie C, Kalet A. Communication skills are highly correlated with history content: findings of a comprehensive clinical skills examination for medical students. Poster presented at COMSEP 7–10 April 2005, Greensboro, NC.
6. Zabar S, Kachur E, Kalet A, Hanley E, editors. Objective structured clinical examinations: 10 steps to planning and implementing OSCEs and other standardized patient exercises. New York, NY: Springer; 2012. p. 92.
7. Cleland J, Leggett H, Sandars J, Costa MJ, Patel R, Moffat M. The remediation challenge: theoretical

and methodological insights from a systematic review. Med Educ. 2013;47(3):242–51. doi:10.1111/medu.12052.

8. Dudek NL, Marks MB, Regehr G. Failure to fail: the perspectives of clinical supervisors. Acad Med. 2005;80(10 Suppl):S84–7. PubMed PMID: 16199466.

9. Saxena V, O'Sullivan PS, Teherani A, Irby DM, Hauer KE. Remediation techniques for student performance problems after a comprehensive clinical skills assessment. Acad Med. 2009;84(5):669–76. doi:10.1097/ACM.0b013e31819fa832.

10. Guerrasio J. Remediation of the struggling medical learner. Irwin, PA: Association for Hospital Medical Education; 2013. p. 184.

11. Klamen DL, Williams RG. The diagnosis and treatment of the failing student: (standardized patient exam failures). Springfield, IL: Southern Illinois University School of Medicine; 2009. p. 169.

12. Winston KA, Van der Vleuten CP, Scherpbier AJ. An investigation into the design and effectiveness of a mandatory cognitive skills programme for at-risk medical students. Med Teach. 2010;32(3):236–43. doi:10.3109/01421590903197035.

13. Bebeau MJ. Chapter 4: Evidence-based character development. In: Kenny N, Shelton W, editors. Lost virtue (advances in bioethics), vol. 10. Burlington: Emerald Group Publishing Limited; 2006. p. 47–86. doi:0.1016/S1479-3709(06)10004-7.

14. Artino Jr AR, Hemmer PA, Durning SJ. Using self-regulated learning theory to understand the beliefs, emotions, and behaviors of struggling medical students. Acad Med. 2011;86(10 Suppl):S35–8. doi:10.1097/ACM.0b013e31822a603d.

15. Bordage G, Lemieux M. Semantic structures and diagnostic thinking of experts and novices. Acad Med. 1991;66(9 Suppl):S70–2. PubMed PMID: 1930535.

16. Kalyuga S, Ayres P, Chandler P, Sweller J. The expertise reversal effect. Educ Psychol. 2003;38(1):23–31. doi:10.1207/S15326985EP3801_4.

"She Needs to Read More": Helping Trainees Who Struggle with Medical Knowledge

Jeannette Guerrasio

Abstract

Medical trainees must be able to master large volumes of knowledge quickly to be academically successful and competent to practice clinically. About a third of struggling medical learners have insufficient medical knowledge. In this chapter, through case examples and use of Bloom's taxonomy as a theoretical framework, the author demonstrates how medical knowledge deficits can be distinguished from other types of academic difficulty. Once a medical knowledge deficit is identified, strategies to address this should be tailored to the etiology of the problem. In the experience of the author, who is the founding director of a comprehensive remediation program serving medical students and residents, the most common predominant underlying causes for a significant medical knowledge deficit in medical students are lack of committed study time, distraction, and anxiety and poor self-confidence. Questions to help the learner clarify the issues contributing to their insufficient working medical knowledge are offered. Specific remediation strategies are described in detail and illustrated with case examples. In addition, a list of study tips and test-taking strategies has been included to assist in remediation of these medical learners.

3.1 Introduction

Learning enormous amounts of information is the sine qua non of medical school. Students struggle with the volume of facts they need to commit to memory. For most, to succeed requires an unprecedented level of sustained concentration and necessitates developing new, more rigorous learning strategies. In one study, when asked for potential solutions to these challenges, preclinical medical students most commonly requested a course on study skills [1]. Across all 4 years of medical school, the most common reasons students request support services are to help with test taking and organization and integration of large amounts of information [2].

> *Failing finals is often a surprise for the student but not the teacher.* [3]

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Insufficient medical knowledge is prevalent among students who struggle in medical school. At the University of Colorado School Of Medicine, starting in 2006, we developed a comprehensive remediation program, which serves all levels of medical trainees. Medical students can self-refer to the program or are enrolled if they fail, receive negative comments on evaluations, or are identified by the course director as otherwise performing poorly. Insufficient medical knowledge is the single most common deficit, identified in 38 % of the medical students referred to the program [4].

Interestingly, despite how common it is, our experience is that insufficient medical knowledge is "overdiagnosed" by clinician educators who are sensitive but not specific in identifying remediation issues [5]. After investigation by the remediation committee, it turns out that many students thought by preceptors to "need to read more" actually have adequate foundational knowledge bases but struggle instead with other issues such as application of that knowledge in the context of clinical reasoning, problems with interpersonal communication, performance anxiety, and/or disorganization. Because of this, and in order to effectively address the problem, all students reported to have a medical knowledge deficit should be assessed carefully before they are pressured to "read more."

3.2 Distinguishing a Medical Knowledge Deficit from Other Deficits

Nationally standardized examinations, such as the United States Medical Licensing Exams (USMLE) Steps 1, 2, and 3 and the National Board of Medical Examiners (NBME) Subject Exams, are designed to measure medical knowledge [6] with high reliability. Reviewing the student or resident's academic record or asking a learner if they passed all prior standardized exams may help differentiate medical knowledge problems from other deficiencies. If a learner, for example, passed USMLE Step 1 on her first attempt and scored a 200 or better, then

foundational medical knowledge is unlikely the problem, and it would be more fruitful to evaluate her clinical reasoning and related heuristic biases, communication skills, or mental health issues, such as anxiety. If the learner failed the USMLE Step 1 and then passed on retest by one point, there is a better chance that weak foundational medical knowledge is the primary problem.

Sam is getting ready to start her third year of medical school, which marks the start of her clinical clerkship rotations. She failed USMLE Step 1 twice and passed it on her third attempt with a 188, the lowest possible passing score that year. She is interested in improving her test scores, as she will have to take USMLE Steps 2 and 3, as well as individual NBME subject examinations.

For students who fail medical knowledge examinations, further investigation will elucidate the cause of the knowledge deficit, so that a targeted and individualized remediation plan can be created. Answers to the following questions will paint a comprehensive picture of the learner's examination challenges:

- How did you score on other standardized exams such as the Scholastic Aptitude Test (SAT) for college admissions, Graduate Record Exam (GRE) for graduate school admissions, Medial College Admission Test (MCAT) for medical college admissions, and USMLEs compare with your peers? Was your performance consistent across all components of the exam, or did you score low in one area and high in others?
- Has your performance on exams throughout medical school been consistent? Can you identify a point in time that performance significantly worsened? If so what was happening in your life at that time, and did your study habits change?

- Is your knowledge gap global or related to a specific topic or set of topics?
- What approaches have you been using to study? Can you describe your study habits in detail?
- Do you have a previously diagnosed learning disability?

Upon further questioning, Sam reports getting a 1,400 on her SAT which places her in the 95th percentile of all college-bound high school students in the United States and MCAT scores of 10 in physical science, 11 in biological science, and 10 in verbal reasoning. Her total MCAT school of 31 put places her in the 82nd percentile of US medical school applicants. Her scores are not unlike her high-achieving peers. Sam scored just about average on her first two courses in medical school.

When asked to discuss her study strategies, she admits that because the grading policy is pass/fail, once she was confident that she could pass her courses, she stopped going to class. Instead, she sleeps until noon, attends labs in the afternoon, and watches video recordings of the lectures from home in the evenings, often at double speed. She feels this is a more "healthy" approach since she had more control over her time and energy. She has been cramming before exams. Starting 2 days before the exam, she repeatedly review lecture notes and textbook chapters taking brief breaks to eat and sleep.

At the end of the pre-clerkship curriculum, she failed the USMLE Step 1 exam twice. Prior to her third attempt, she enrolled in a review course, and neuropsychological testing did not reveal a learning disability. She has subsequently passed the exam.

If a learner reports that they have always been a "bad test taker" or had an injury or illness that resulted in a change in performance, neuropsychiatric testing may be informative (see Chap. 9). If the knowledge deficit is limited to one or two topic areas, a successful remediation is more likely. Reviewing the learner's study skills is also important. If the learner is putting in sufficient time but study strategies are inefficient (e.g., reading the same textbook over many times rather than summarizing the material into briefer study tools), study skills coaching can make a remarkable difference. If the learner has been previously diagnosed with a learning disability, that student's experience with accommodations (e.g., extra time for exams, use of a calculator for calculations or computer for writing) should provide guidance for what will work in the future.

Sam's "pump and dump" (also known as "binge and purge" or "brute force") study strategy

is a problem. This approach is among the least effective in producing future recall of information and application of that information to new problems. Studies of human learning reveal that the most durable learning, with the least "forgetting" or degradation of learning, occurs with: 1) spacing study of a particular content over long periods of time; 2) studying strategies which include frequent testing of recall using short-answer-type questions, rather than multiple choice questions which test recognition rather than recall; and 3) interleaving the studying of a variety of topics rather than "blocking" study time by spending large amounts of time on a single topic and then moving on to the next topic [7]. Despite the weight of the evidence in favor of these strategies, learners often perceive that they are less effective because while these strategies—spacing, testing, and interleaving—produce better long-term impact on learning, this may not be obvious in the short run. Curriculum structures that block the material to be studied and assessment

approaches of traditional medical schools, which do not test material cumulatively, reinforced this study behavior.

It is often only when durability of knowledge is tested in the longer run that the student may perceive a problem with their study strategies.

Through direct observation using Bloom's Taxonomy as modernized by Lorin Anderson, we find students who struggle at the lower two levels benefit from strategies presented in this chapter. In Fig. 3.1 we illustrate how this information can be used to select from among the remediation strategies described later in this chapter.

In 1956, Benjamin Bloom chaired a committee of educators that created a classification system for educational goals [8]. Figure 3.1 represents a modernization of this taxonomy for learning in the cognitive domain [9]. While recent research in learning and neuroscience have revealed that linear hierarchical models such as Bloom's are unlikely to accurately represent the complexity of human knowledge structures, Bloom's Taxonomy has stood the test of time because frontline teachers find this model useful conceptually in educational practice. For instance, we find that students who struggle with the tasks of remembering or understanding benefit from remediation strategies focused on expanding their medical knowledge, while students whose struggles are above these levels are more likely to benefit from work on their clinical reasoning skills.

Imagine listening to this presentation from a third-year medical student rounding with you in the hospital. At what level does her deficiency lie on the updated Bloom's Taxonomy in Fig. 3.1? Why?

Case Example 1: Sam
"*Mr. Smith is a 55 year old male who presents with bleeding. This morning he felt nauseated after eating toast and drinking a bottle of beer for breakfast. About 1 h later, he vomited the toast and about one cup of*

(continued)

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bright red blood. After he vomited, he had a sore throat and metallic taste in his mouth. He came to the hospital because his discharge paperwork from 2 month ago said to return if he had any bleeding. He is not sure what makes it better or worse, though he does relay that doctors keep telling him not to drink alcohol anymore. He also says that his stools have been black and sticky for the past 3–4 days.

Mr. Smith reports nasal congestion with seasonal allergies. The review of systems is otherwise negative.

His past medical history is significant for chronic obstructive pulmonary disease on 2 L of oxygen, fatty liver disease, and alcohol-related cirrhosis. Two months ago he presented to the hospital with hematemesis and was found to have Grade II varices on upper endoscopy and is status post banding.

His medications include ipratropium/albuterol nebulizer four times a day and albuterol nebulizer ever 2 h as needed. He has no known drug allergies.

His family history is significant for liver cancer in his father and brother.

He smokes unfiltered cigarettes at 2 packs per day for a total of 80 pack years and drinks three 40 oz bottles of beer per day. He denies illicits, except for the marijuana he smokes a few times per month.

On physical exam, he is a thin male, has a big belly and appears older than his stated age. His vital signs are T 98.2 °F HR 125 BP 95/62 R 22 Sat 84 % on room air. His sclera are yellow. His heart is regular rate, no murmurs. His lungs are diffusely wheezing with expiration. He has a soft abdomen that is nontender with bowel sounds. His liver is enlarged. He has trace lower extremity edema. His rectal exam reveals black stool.

The only lab back so far is his CBC. His WBC is 3, HCT 24, and platelets of 53.

(continued)
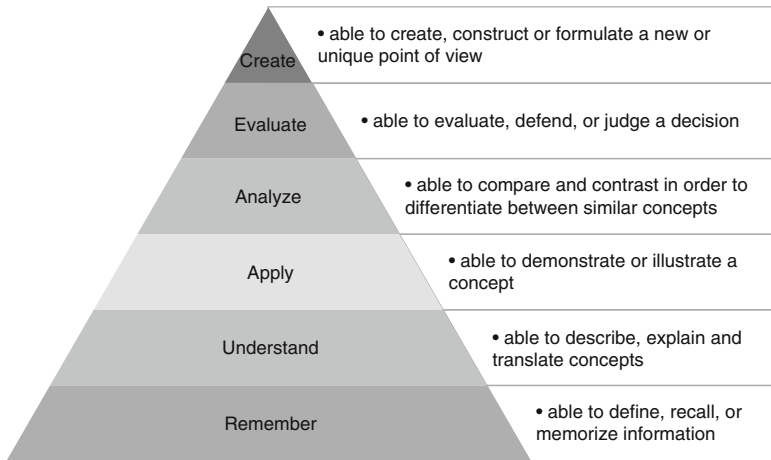
Fig. 3.1 Distinguishing a medical knowledge deficit from other deficits

> *My differential diagnosis for his bleeding is a posterior nosebleed with vomiting, gastroesophageal reflux disease (GERD), and cancer.*
>
> *I put nosebleed on the list first because he has had nasal congestion, which he might have mistaken for allergies, GERD because it is so common in our society and cancer because he has a strong family history.*
>
> *I think we should order imaging to look for cancer and check liver cancer labs, consult ENT to make sure the nose isn't actively bleeding and an upper endoscopy biopsy for GERD. He also needs two large bore IVs for blood and serial CBCs every 4 h.*"

What is the quality and relevance of Sam's medical knowledge? As the attending physician hearing this case, you would notice immediately that Sam has come to the wrong diagnostic conclusion about this patient, who is likely to be having an emergent, life-threatening GI bleed from esophageal varices rather than a nosebleed and liver cancer. Once you check that the patient is receiving appropriate care, you turn your attention to the learning needs of the student.

Sam is not semantically accurate or competent; she uses the term "hematemesis" and diagnoses

"Grade II varices," but you suspect she does not understand their specific meanings. She is likely repeating terms she heard from supervisors or read in the patient chart. While she has collected a good deal of information, it is not obvious she knows which components of the physical exam are pertinent to assessing a patient with liver disease and gastrointestinal bleeding. For example, she does not comment on orthostatic vital signs, skin pallor or lesions, or tests of ascites. Considering the taxonomy in Fig. 3.1, Sam appears to lack a firm foundational level of factual knowledge. She does not remember to refer to yellow sclera as icterus, liver cancer as hepatocellular carcinoma, or black stool as melena. She doesn't quantify the size of the liver as would be routine. She does not appear to know which imaging tests are appropriate to assess for hepatocellular carcinoma or to check for alpha-fetoprotein in the serum.

Now compare and contrast this presentation of the same patient by another struggling third-year medical student:

In response to this type of presentation, we have heard colleagues exclaim, "This student, Jackson doesn't know anything. He needs to read more!" For comparison, this presentation, unlike Sam's, conveys that he has at least some medical knowledge in this content domain. Jackson is semantically savvy, able to use terminology like melena, telangiectasias, and icterus accurately. He demonstrates that he knows what to look for in a patient with liver disease. He also knows the

Case Example 2: Jackson
Take 2:
Mr. Smith, our patient, has been very patient, allowing two medical students to interview him. This time, Jackson presents to the team: "*Mr. Smith is a 55 year old male who presents with bleeding. He felt nauseated this morning after eating toast and drinking 12 oz of beer. About 1 h later, he vomited the toast and had about one cup of bright red hematemesis. After he vomited, he had a sore throat and metallic taste in his mouth. He came to hospital because his discharge paperwork from 2 month ago said to return if he had any bleeding. He is not sure what makes it better or worse. He has had melena for the past 3–4 days and said that doctors keep telling him not to drink alcohol anymore.*

Mr. Smith reports nasal congestion with seasonal allergies. The review of systems is otherwise negative.

His past medical history is significant for chronic obstructive pulmonary disease on 2 L of oxygen, fatty liver disease and alcohol-related cirrhosis. Two months ago he presented to the hospital with hematemesis and was found to have Grade II varices on upper endoscopy and is status post banding.

His medications include ipratropium/albuterol nebulizer four times a day and albuterol nebulizer ever 2 h as needed. He has no known drug allergies.

His family history is significant for hepatocellular carcinoma in his father and brother.

He smokes unfiltered cigarettes at 2 packs per day for a total of 80 pack years and drinks three 40 oz bottle of beer per day. He denies illicits, except for the marijuana he smokes a few times per month.

On physical exam, his is a thin male, has a big belly and appears older than his

(continued)

stated age. His vital signs are T 98.2 °F HR 125 BP 95/62 R 22 Sat 84 % on room air. His sclera are icteric. His skin has both telangiectasias and caput medusa. His heart is regular rate, no murmurs. His lungs are diffusely wheezing with expiration. He has a soft abdomen with positive bowel sounds, that is nontender. His liver is enlarged. He has trace lower extremity edema. His rectal exam reveals black sticky melena.

The only lab back so far is his CBC. His WBC is 3, HCT 24, and platelets of 53.

My differential diagnosis for his bleeding is a posterior nosebleed with vomiting, gastroesophageal reflux disease (GERD), and cancer.

I put nosebleed on the list first because he has had nasal congestion which he might be mistaken for allergies, GERD because it is so common in our society and cancer because he has a strong family history.

I think we should order a right upper quadrant ultrasound to look for cancer and check an AFP, consult ENT to make sure the nose isn't actively bleeding and an upper endoscopy biopsy for GERD. He also needs two large bore IVs for blood and serial CBCs every 4 h. Oh, and a bone marrow biopsy to find out why his platelets are so low."

appropriate diagnostic tests for each of the diagnoses on his differential. In contrast, he seems to be missing the most likely unifying explanation for this patient's presentation. He is not recognizing the pattern (also referred to by psychologists as a schema or script) which is immediately recognized by more experienced clinicians. For Jackson, reading more and memorizing more will not remediate his clinical reasoning deficit the way that work to increase his clinical experience and explicit work on his clinical reasoning will (see Chap. 6).

Both these students "didn't get" a life-threatening diagnosis. To help Sam it is important to understand if the primary underlying issue is lack of medical knowledge and or a clinical reasoning deficit. To do this her attending asks her the following question:

Sam, how would a patient with a variceal bleed present?

If Sam is unable to answer this fact-based question, then we can assume her medical knowledge is limited. If she is able to answer this and other similar questions correctly, medical knowledge is unlikely her deficit in this content domain, but rather she struggles with synthesis of information and pattern recognition. Other examples of fact-based questions include:

- *What are the most common signs and symptoms of gastritis?*
- *What physical exam findings would you expect to see in a patient with cirrhosis? How does cirrhosis cause thrombocytopenia?*

Sam is unable to answer basic fact-based questions. The residents supervising her on the clerkship clinical team report that her knowledge deficits are global and not related to any one disease, organ system, or specialty of medicine. Sam reports that she hasn't had as much time as she would like to study on this rotation and has not yet purchased the text recommended by the clerkship director. In the past week, her attending suggested she read about the presentation and diagnosis of pancreatitis and to look up the differential of upper gastrointestinal bleeding, but she has not done so yet.

3.3 Remediation Strategies

Since many struggling students believe putting more time into familiar study strategies will improve their performance, external input to help them master new, more efficient strategies

is usually required [10–12]. We illustrate this by describing remediation tailored to three commonly encountered types of student issues that interfere with knowledge gain: lack of committed study time, distraction, and anxiety with low self-confidence. Consider using the algorithm in Fig. 3.2 to identify the problem and the best remediation strategy. In tailoring remediation programs, we seek to create opportunities for students to develop study strategy expertise and improve lifelong learning of medical knowledge by taking them through cycles of effortful practice, tailored feedback, and self-reflection. These are the key components of deliberate practice critical to developing expertise [13, 14] (see Chap. 1).

3.3.1 Remediation Strategy A: Lack of Committed Study Time (Sam)

We have found it critical to create a highly structured remediation process with students such as Sam who need explicit guidance toward high-yield material and the appropriate depth of learning. It is especially important to make specific recommendations with strict time lines and clearly state that the process will take an extended amount of time and frequent and regular meetings with a supervisor. We give specific reading assignments with source and page numbers (e.g., "Internal Medicine Essentials for Clerkship Students, pages 75–99"), rather than leaving this up to the student by saying, "read about cirrhosis." Initially, we are careful to choose material that is directly related to course or clerkship objectives and is of manageable length to be completed during the time available.

We work with the student to develop a specific study schedule including both the number of pages to be read and short-answer practice questions to be completed per day and week. If possible, we correlate the reading with clinical activities and make specific assignments for the student to do before, during, or after an educational experience. In this way, we model effective ways to blend background and just-in-time reading with experiential learning.
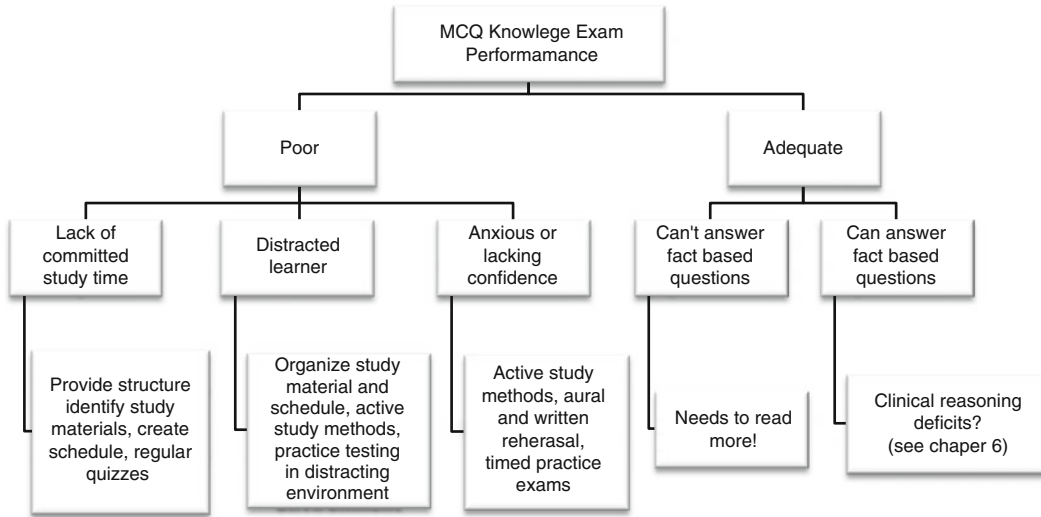
Fig. 3.2 Approach to a learner identified as having medical knowledge deficits

For students who routinely cram for exams, a strategy that may work in the short run, it is important to encourage them to actively learn material in depth to facilitate long-term retention and clinical application. As they read about a patient case, learners should be encouraged to go beyond answering the "what and how" questions and ask "why" questions. For example, if the student is reading about a patient with a flare of Crohn's disease, the student should prepare to discuss not only that steroids are indicated and how to administer them but also why treatment with steroids is the best strategy.

3.3.1.1 Importance of Individual Characteristics

Individual characteristics have been found to be determinants of learning and performance, apart from one's cognitive abilities [15]. Personal characteristics associated with achievement include openness, conscientiousness, dependability, curiosity, intellectual engagement, and mastery orientation—seeking to master the material rather than merely score well on an exam [16–18].

> *Millions saw the apple fall, but Newton was the one who asked why.*
>
> *—Bernard Baruch*

Those who procrastinate and work to avoid appearing incompetent—a performance orientation—are most likely to underachieve [19]. Making students aware of this and asking them to reflect on their own characteristics may help motivate them to change their behavior around and attitude toward learning. Engaging a student in a dialogue about the need for physicians to develop lifelong learning skills and a mastery orientation will help motivate them to put effort into changing ineffective study habits (see Chap. 13).

To take advantage of the "learning through testing" effect mentioned above, the student should be expected to take weekly quizzes based on her required reading, to both encourage her to adhere to the study schedule and focus her studying on identified gaps in knowledge rather than simply restating or rereading material. If practical, the quizzes should require students to provide short answers (e.g., fill in the blank to stimulate recall) rather than MCQ-type questions which rely on recognition of the correct answer. This can be created efficiently by asking students to answer MCQ questions before looking at the answer options. This is often called the "cover the options" approach.

Lastly, give the student the opportunity to reflect on new study methods. What have been the pros and the cons of having such a strict study schedule with weekly quizzes? What has she noticed about how this has affected her performance in the clinical setting? Does she now have more to add to patient or education discussions? Is she better able to follow these discussions? Ideally, in this metacognitive way (Chap. 13), you can facilitate the student making positive links between greater effort on her part and the greater level of commitment in her achievement from faculty [20].

3.3.2 Remediation Strategy B: Distracted Student (ADHD) with Chronic Low-Test Scores (Raj)

While he enjoyed his rotations in obstetrics and gynecology and internal medicine, Raj failed the NBME subject tests in his first two clinical clerkships, and he is not surprised. He reports that he has always been a "bad test taker" but is adamant that his medical knowledge is as good as his peers as demonstrated on his clinical performance evaluations.

All three subscores of his MCAT as well as his preclinical exam scores were consistently in the bottom quintile of his class. Raj spends 2 h every evening reading the review textbook recommended by the clerkship, plus completing practice questions. He desperately wants to address this situation. When asked for more detail, he admits to only being able to complete two to five pages of reading per night and about two or three practice questions. He finally admits that he carries the diagnosis of Attention Deficit Hyperactivity Disorder (ADHD) and that because he feared being stigmatized, he has not requested testing accommodations or sought treatment.

Attention deficit hyperactivity disorder is one of the most common learning disorders seen in medical schools, and it is associated with poor attention, impulsivity, distractibility, restlessness, impaired organization and time management, and procrastination [21, 22]. These features impact both the acquisition of knowledge and test taking. While both male and females are affected by ADHD, girls are diagnosed at a lower rate [23, 24] (see Chaps. 9 and 12).

Without support, these students are unable to get through an adequate proportion of the material during their study time and retain less of it compared to their peers. With earlier diagnosis of learning difficulties and more effective interventions for people with ADHD, increasingly students arrive in medical school with a much more sophisticated understanding of their situation and are better prepared to strategize effectively and advocate for their own learning needs. The prognosis for students like Raj is good if competent study skills coaching is available. This includes focus on organizing study material, transforming from passive to active study strategies, and learning strict time management techniques. Referral to determine if medication treatment is appropriate is also important (see Chap. 12).

3.3.2.1 Study Skills Coaching

Study skills coaching is readily available in most academic communities. Even if the individual coach has no prior experience working with professional school students, in our experience most are able to work effectively with medical students in consultation with an experienced clinician educator.

Strategies that help students become active studiers include requiring students to maintain and follow a detailed study calendar, which includes both exact material to cover in a time period and regular breaks (e.g., "joy breaks"). A student should be coached to take written notes as he reads and advised to keep a list of the challenging content. He should create his own mnemonics, visual maps, charts, pictures, and algorithms from the extracted material. Students

should summarize each section or teaching session in writing, identifying the major themes, important facts, the take-home points of figures, tables, and cases, and write down any questions they still may have about the material [20]. Their self-generated questions can then be discussed with their mentor, supervising residents, supervising or course faculty, and in study groups with their peers. Innovative technology is available to assist students with difficulty "capturing" information in writing (see Chap. 9).

3.3.2.2 Time Management

Time management is essential to remediation and improves exam scores [25]. Many students with ADHD struggle to manage their time during an exam: either they rush through questions due to their underlying impulsivity or get distracted and don't have enough time to finish. For test taking itself, there are numerous helpful strategies. Getting to know the test, including its format, the number of sections and the number of questions per section, the types of questions being asked, and how much time they will have for each section, is critical. For some tests, a breakdown of topics is also helpful as it will direct the learner to study the highest-yield topics first. Direct students to practice exams or sample questions such as USMLE World questions or even Kaplan flash cards on the 200 most likely diagnoses, Diagnosis, and Pharmacology and Treatment [26, 27].

3.3.2.3 Training for Test Taking

Practice answering questions has been shown to directly improve testing performance [28–33]. The practice test environment should simulate the level and type of distractions of the actual testing environment and accurately mimic the exam, with the same number of questions and allotted time. Students should practice answering the easiest questions first, then complete the remaining questions, rather than answering questions in order and be encouraged not to rush as they will be more likely to make careless errors. On the other hand, if a question is taking more than 4–5 min, they should move along to the next question. During the final 2 min of the time period, have the learner fill in answers to the unanswered questions. They should not leave any questions blank [26, 27]. As a

benchmark, for performing well on the USMLE steps, the average student needs to read one review book series, completely from start to finish, *at least* once, then study their note and complete 1,500 questions. An alternative focused strategy is to complete 2,500 questions and thoroughly review the explanations for each answer and look up topics that they do not know well [34].

For case-based or long-format questions, the student with ADHD should read the question at the end of the passage first, then go back and read through the body of the questions. This way the distracted reader is not trying to remember all of the details by the time they get to the question. The more efficient student is better able to focus on the important data, rather than trying to manage all of the information from the question in their working memory. This capacity to decide on and attend to the most critical elements of the situation is referred to as salience determination [35]. Starting with the question first trains learners with ADHD to improve his or her salience determination capacity.

Another technique involves helping learners to switch perspectives on a question. Some learners prefer to view the world through a big picture lens and others tend to initially see each tree first rather than the forest. Both are necessary. If the learner is struggling with a question or concept, have him or her try looking at it from both views. Likewise, some learners place more weight on concrete information, details and facts, while other learners work better with abstract concepts and theories. It is important for learners to understand their own preferred approach and be able to switch perspectives; this perspective switching may help distracted learner attend longer and therefore improve performance (see Chap. 13).

For MCQ test questions, be sure to instruct the student to look at all of the answer choices, eliminating the incorrect choices and choosing from the remaining [26, 27]. If a learner narrows the answers down to two choices but consistently gets stuck, the learner lacks specificity of knowledge and needs to go back and focus more on the details during study, as well as the big picture. Statistically speaking, if this occurs during the test, the student should choose the answer furthest down on the answer choice list. For example, if a, c, and d have

been eliminated, leaving b and e, the learner should choose e [26].

Using these techniques on practice questions and exams will help provide the learner with feedback on the progression of their knowledge, the effectiveness of different study and test-taking strategies, and optimal pacing for studying and completely exam questions. Practice test data should be monitored to provide feedback on the effectiveness of study and testing strategies. Such learning should be noted and reinforced until better strategies become routine.

3.3.2.4 Self-Regulation

Students should identify their most productive time of day for studying and monitor such relevant issues such as how much sleep they receive and require; use of caffeine, over-the-counter medications, and prescription medications; and the role of exercise and study location (e.g., students with ADHD paradoxically prefer public locations such as coffeehouses rather than being isolated) in helping them with attention to study. A medical evaluation or psychiatric evaluation may be warranted for medication recommendations and sleep problems. Sleep and poorly treated or untreated mental illness affect alertness and efficient use of time. Specific distracters and interruptions should be identified and eliminated to make study time more efficient and more productive [20]. The student may need advice on confronting their family members' and friends' wishes and expectations to preserve the necessary amount of protected study time.

3.3.3 Remediation Strategy C: Anxiety, Confidence, and Chronic Low-Test Scores (Juan)

Juan admits that taking tests is extremely anxiety provoking, and when he gets anxious, it slows him down and he starts thinking in his native language, Spanish. Juan

calls the school's education specialist to help him get ready for taking USMLE Step 1, though he isn't sure he will ever pass the test or graduate from medical school. In the past, Juan consistently scored in the bottom 10% on exams and has had to repeat one course each of the past 2 years. Juan has been reading and re-reading the suggested board preparation text and bank of questions for the past year, as the sections correlated to his classroom courses. He has never been evaluated for a learning disability and has never sought testing accommodations. Although he lives with his family to reduce the cost of his education, they are extremely supportive of his study time and proud that he is the first member of his family to attend graduate school.

Chronic anxiety has been consistently associated with poor performance on cognitive assessments [36, 37]. However, the nature of this correlation is not well delineated. While people that are worried tend to perform poorly [38], the data do not explicitly demonstrate that anxiety significantly influences exam scores. Instead, it may be that text anxiety is the result of the deficit, not the cause [39]. Either students with less aptitude report higher levels of anxiety or poor study skills result in poor performance and increased anxiety [40].

In the United States, performance on academic subjects and achievement exam performance are negatively correlated with being black or Hispanic, lower socioeconomic status and parental education level, crowdedness of the home, and renting rather than owning a home. All this contributes to the finding that exam scores are lower for those who do not belong to the Anglo-middle-class culture [41] (see Chap. 8).

It is also known that students with higher confidence ratings perform better on tests [42]. Students and residents who view themselves as outside of the normative culture are more likely to struggle with confidence. Students and residents who consistently score at the bottom of their

class will also lack confidence. The cycle continues as learners who lack confidence avoid challenging situations, such as course study groups and higher-level discussions [43].

The main remediation strategies for learners with anxiety, low confidence levels, and chronic low scores include fine-tuning study skills, increasing preparation for exams, and repetition. As mentioned earlier, the student should take written notes in English as he reads and attends teaching sessions. While note-taking in the prior case was encouraged to increase the student's engagement, in this case, it is to help the learner build confidence in using both the English language and the new medical vocabulary. Native English speakers who do not learn languages easily may also struggle with acquiring the language of medicine. As with learning a new language, discussing medical terms and concepts is best practiced with those with fluency; therefore, the novice needs to seek out opportunities to engage in discussions rather than avoiding them.

3.3.3.1 Taking Advantage of Aural and Visual Learning

In addition to all the strategies mentioned above, this type of student should audio record a summary of their notes and listen to the recordings on their way to work, while walking the dog, or while working out at the gym. The repetition involved in making and listening to such recordings takes advantage of the multimedia effect of processing information using dual channels, both aurally (words) and visually (pictures) [44], and helps the student solidify and retain the material in a retrievable form. Greater comfort with the material will help decrease anxiety and increase confidence walking into writing exams and other evaluative assessments.

3.3.3.2 Slow Reading Rate

For learners for whom English is a second language, either having immigrated to seek a medical education or having grown up in the United States in non-English-speaking households or communities, often notice that it takes them longer to complete exams and to read and process information than their peers. This slow reading rate may also be seen in native English speakers ("slow processors"). Often such students have been tested and

have received time accommodations on written tests. Students with a slow reading rate can partially overcome this deficit through training by completing large volumes of practice test questions under timed conditions. It may be helpful for students with similar struggles to share their experiences, or even with faculty members who experienced similar challenges.

Such students need to become highly self-aware and develop a repertoire of strategies to ensure that they achieve their goals and meet competency standards. In addition to all the study and test-taking strategies discussed above, the student or resident may need a mentor's support to establish boundaries with others or give up other non-academic tasks and responsibilities to preserve the necessary amount of protected study time.

3.3.3.3 A Good Use of the Medical Educator's Time

Much of what we have covered in this chapter can and should be done by the student working with a study skills coach or if one is available or competent peers who can function as tutors. The medical teacher's role should usually be in identifying students who need help, structuring and monitoring the remediation process, and participating in making summary judgments about a student's success in remediation.

As content experts, the medical educator must lend a hand when content is an issue. We recommend content experts avoid telling information to students who struggle and instead facilitate the student's learning through reviewing the practice questions the learner got *wrong*. This is a practical and focused way for the medical educator to directly assist in the remediation of the student with insufficient medical knowledge. It allows the expert to focus on filling specific knowledge gaps and coaching active learning strategies.

The faculty coach should ask the student to rephrase the question to demonstrate understanding of the concept being assessed. Have the learner explain why the given answer is correct and the incorrect answers are wrong to ensure factual knowledge is learned. Then work with the learner to identify keywords to help him or her develop the ability to distinguish salient information from distracting facts. Encouraging the

learner to write their own multiple choice question on a challenging topic actively engages the student in encoding, retrieving, and applying information to authentic scenarios [45]. Some course directors routinely have students write test questions as a study strategy.

3.3.3.4 Determining When Medical or Neuropsychological Testing Is Indicated

All along the way, and especially if above recommended remediation methods are not successful, consider cognitive or neuropsychiatric testing to look for new or undiagnosed learning disabilities from physical or mental illness. Signs of an underlying learning disability include prior difficulties in school; uneven strengths such as scoring high on physical science and biological science but low on verbal reasoning; difficulty understanding and following instructions; trouble remembering what someone just told him or her; difficulty distinguishing right from left; difficulty identifying words or a tendency to reverse letters, words, or numbers; lack in physical coordination; frequent loss or misplacement of items; or difficulty understanding the concept of time [46]. Other clues that neuropsychiatric testing would be helpful include head trauma; failure to achieve developmental milestones as a child, such as delayed language development; exposure to drugs, alcohol, or maternal illness in utero; exposure to chemicals, toxins, or heavy metals; tics; seizure disorders; substance abuse; strokes; and psychiatric disorders (see Chap. 9).

3.4 Summing Up

Sam's Story
Sam works closely with a mentor who helps her design a study schedule. She is disgruntled that she must take weekly quizzes, until she notices that her overall performance is improving and that her improved knowledge base allows her to be more engaged on rounds, with patient care and in working

with the resident teams. She even received the second highest score on her Internal Medicine NBME subject exams.

Raj's Story
With advice and support from his attending physician, Raj sought counseling and pharmacologic treatment for his ADHD. His studying has become much more efficient and interactive, as he has begun creating visual maps and algorithms for everything he reads. He no longer needs to stay up all night to get through the required material and is able to wake up early in the morning to run for 45 min before work. Overall he is feeling less burnt out, and he has passed the remaining shelf exams.

Juan's Story
Juan is frustrated that he must study more than his peers. However, the time and repetition are paying off. For Juan, taking notes, recording his own voice explaining concepts, and listening to the recordings on his way to work have been most helpful. He has begun sharing his struggles with a few of his classmates and has found them to be very supportive. They have been available to discuss concepts with him to reinforce what he is learning, and he has found the confidence to engage more with the resident and faculty members on his teams. Juan took a month off of clinical rotations to concentrate on practice questions prior to USMLE Step 2, and it paid off. He was able to complete all of the questions and received an average score.

We have illustrated road-tested effective remediation strategies for the most common types of medical students presenting to our program with concerns about their medical knowledge. We describe an approach, which is tailored to individual learners, closely supervised and includes deliberate practice, which is effortful, challenging, and supported with multiple sources of feedback and requires metacognitive awareness through self-reflection.

3.5 Recommendations for Preventing and Addressing Medical Knowledge Deficits

3.5.1 *At the Program Level*

- Consider proactive introductory classes on study, cognitive, and metacognitive skills [47, 48].
- Encourage use of the school's academic support to identify resources locally [49].
- Provide a list of the most appropriate reading material and access to question banks.
- Identify a pool of students, residents, and faculty who are skillful tutors and good role models.

3.5.2 *At the Individual Student Level*

- Help the students develop a study schedule.
- Encourage openness, conscientiousness, dependability, individual curiosity, intellectual engagement, and mastery of material.
- Warn against procrastination and effort and time invested in appearing competent.
- Instruct the students to focus on learning and understanding rather than just remembering or memorizing.
- Encourage the student to take written notes on reading and attend teaching and group study sessions.
- Consider having the student audio record their notes or a summary of their notes and listen to the recordings.
- Encourage students to learn the language and vocabulary of medicine by discussing questions that arise while studying with a knowledgeable other.
- Find efficient protected time to study.
- Identify most productive time of day for studying.
- Get at least 6 h of sleep per night.
- Limit caffeine and use medication appropriately.

3.5.3 *Test Preparation Advice*

- Make liberal use of practice tests and practice questions.
- When studying from practice questions:
  - If you find you consistently narrow the answers down to two choices, you lack specificity of knowledge in that domain. Read more.
  - Make sure you are able to rephrase questions, explain why the given answer is correct and the incorrect answers wrong, and identify the keywords.
  - Analyze and monitor the reasons why you get practice questions wrong. A knowledge deficit? Why didn't you know this material? Not enough time spent? Did you misread the question? Get discouraged or anxious? Document lessons learned.
  - Track practice scores and document lessons learned.
  - Learn to manage time during exams.
  - Take practice tests in an environment that simulates the testing environment.
  - Review lessons learned about test taking before the exam.

3.5.4 *Test-Taking Tips*

- Be familiar with the test format and content.
- Keep track of how long it takes to complete a certain number of questions.
- Practice answering the easiest questions first.
- Do not to rush through any one question.
- If a question is taking more than 4–5 min, move on.
- During the final 2 min of the time period, fill in answers to the unanswered questions.
- For long-format questions read the question at the end of the passage first.
- Try looking at questions from both the big picture view and the detailed view.

3.5.5 Faculty Development Objectives

1. Differentiate the presentation of medical knowledge deficits from other types of deficits.
2. Be able to interview learners to obtain information relevant to designing a remediation plan.
3. Be able to implement the three remediation plans for learners who fit into those categories.
4. Construct and implement a remediation plan from the study tip and test-taking tip lists for learners.

References

1. Olmesdahl PJ. The establishment of student needs: an important internal factor affecting course outcomes. Med Teach. 1999;21(2):174–9. doi:10.1080/01421599979824.
2. Hinman PG, Dottl S, Passon J. Academic development: a survey of academic difficulties experienced by medical students and support services provided. Teach Learn Med. 2009;21(3):254–60. doi:10.1080/10401330903021041.
3. Cleland J, Arnold R, Chesser A. Failing finals is often a surprise for the student but not the teacher: identifying difficulties and supporting students with academic difficulties. Med Teach. 2005;27(6):504–8. PMID: 16199356.
4. Guerrasio J. Remediation program successes. Poster session presented at federation of states physician health programs, Fort Worth, TX; 2012.
5. Wiese JG. Strong as our weakest link. Presentation. San Francisco, CA: UCSF Grand Rounds; 2005.
6. Hoffman KI. The USMLE, the NBME subject examinations, and assessment of individual academic achievement. Acad Med. 1993;68(10):740–7. PMID: 8397598.
7. Rohrer D, Pashler H. Recent research on human learning challenges conventional instructional strategies. Educ Res. 2010;39(5):406–12. doi:10.3102/0013189X10374770.
8. Bloom BS, Engelhart MD, Furst EJ, Hill WH, Krathwohl DR. Taxonomy of educational objectives: the classification of educational goals/handbook I: cognitive domain. New York, NY: Longmans; 1956. p. 206.
9. Anderson LW, Sosniak LA, Bloom BS. National society for the study of education. Bloom's taxonomy: a forty-year retrospective. Chicago, IL: National Society for the Study of Education (NSSE); 1994. p. 214.
10. Loyens SMM, Rikers RMJP, Schmidt HG. The impact of students' conceptions of constructivist assumptions on academic achievement and drop-out. Stud High Educ. 2007;32(5):581–602.
11. Sayer M, Chaput De Saintonge M, Evans D, Wood D. Support for students with academic difficulties. Med Educ. 2002;36(7):643–50. PMID: 12109986.
12. Mattick K, Knight L. High-quality learning: harder to achieve than we think? Med Educ. 2007;41(7):638–44. PMID: 17614883.
13. Hauer KE, Ciccone A, Henzel TR, Katsufrakis P, Miller SH, Norcross WA, Papadakis MA, Irby DM. Remediation of the deficiencies of physicians across the continuum from medical school to practice: a thematic review of the literature. Acad Med. 2009;84(12):1822–32. doi:10.1097/ACM.0b013e3181bf3170.
14. Gladwell M. Outliers: the story of success. New York, NY: Little, Brown and Company; 2008. p. 309.
15. Beier ME, Campbell M, Crook AE. Developing and demonstrating knowledge: ability and non-ability determinants of learning and performance. Intelligence. 2010;38(1):179–86. doi:10.1016/j.intell.2009.09.007.
16. Barrick MR, Mount MK. The big five personality dimensions and job performance: a meta-analysis. Pers Psychol. 1991;44(1):1–26. doi:10.1111/j.1744-6570.1991.tb00688.x.
17. Beier ME, Ackerman PL. Current events knowledge in adults: an investigation of age, intelligence, and non-ability determinants. Psychol Aging. 2001;16(4):615–28. PMID: 11766916.
18. Colquitt JA, LePine JA, Noe RA. Toward an integrative theory of training motivation: a meta-analytic path analysis of 20 years of research. J Appl Psychol. 2000;85(5):678–707. PMID: 11055143.
19. Artino Jr AR, Dong T, DeZee KJ, Gilliland WR, Waechter DM, Cruess D, Durning SJ. Achievement goal structures and self-regulated learning: relationships and changes in medical school. Acad Med. 2012;87(10):1375–81. PMID: 22914521.
20. Connelly J, Forsyth PB. The study skills guide: essential strategies for smart students. Philadelphia, PA: Kogan Page; 2010. p. 166.
21. Hosterman JA, Shannnon DP, Sondheimer HM. American association of American medical colleges. Medical students with disabilities: resources to enhance accessibility. Washington, DC: Association of American Medical Colleges; 2010. p. 104.
22. American Psychiatric Association. Diagnostic and statistical manual of mental disorders: DSM-IV. 4th ed. Washington DC: American Psychiatric Association; 1994. p. 886.
23. Arnold LE. Sex differences in ADHD: conference summary. J Abnorm Child Psychol. 1996;24(5):555–69. PMID: 8956084.
24. Gaub M, Carlson CL. Gender differences in ADHD: a meta-analysis and critical review. J Am Acad Child Adolesc Psychiatry. 1997;36(8):1036–45. PMID: 9256583.
25. Vrugt A, Oort FJ. Metacognition, achievement goals, study strategies and academic achievement: pathways to achievement. Metacogn Learn. 2008;3(2):123–46. doi:10.1007/s11409-008-9022-4.

26. Cutts J, Campbell M, Gotlib L, Oman D, Oman R, Wallace JS. MCAT. New York, NY: Barron's; 2011. p. 983.

27. Magliore K. Cracking the AP biology exam. 2011th ed. New York, NY: Random House, Inc.; 2010. p. 360.

28. Thalheimer W. The learning benefits of questions; 2003. http://www.learningadvantage.co.za/pdfs/questionmark/LearningBenefitsOfQuestions.pdf

29. Gibbs G, Simpson C. Conditions under which assessment supports student learning. Learn Teach High Educ. 2004;1:3–31.

30. Sivagnanam G, Sarawathi S, Rajasekaran A. Student-led objective tutorial (SLOT) in medical education. Med Educ Online. 2006;11(7):1–10. http://med-ed-online.net/index.php/meo/article/view/4610/4789 doi:10.3402/meo.v11i.4610.

31. Pashler H, Bain PM, Bottge BA, Graesser A, Koedinger K, McDaniel M, Metcalfe J. Organizing instruction and study to improve student learning (NCER 2007-2004). Washington, DC: National Center for Education Research, Institute of Education Sciences, US Department of Education; 2007. http://ies.ed.gov/ncee/wwc/pdf/practiceguides/20072004.pdf

32. Larsen DP, Butler AC, Roediger 3rd HL. Test-enhanced learning in medical education. Med Educ. 2008;42(10):959–66. doi:10.1111/j.1365-2923.2008.03124.x.

33. Marcell M. Effectiveness of regular online quizzing in increasing class participation and preparation. Int J Scholarsh Teach Learn. 2008;2(1):1–9.

34. Guerrasio J. Remediation of the Struggling Medical Learner. Irwin, PA: Association for Hospital Medical Education; 2013.

35. Kelly DP, Levine MD. A neurodevelopmental approach to differences in learning. In: Fine AH, Kotkin R, editors. Therapist's guide to learning and attention disorders. San Diego, CA: Elsevier Science; 2003. p. 87–108.

36. Ackerman PL, Heggestad ED. Intelligence, personality and intelligence: evidence for overlapping traits. Psychol Bull. 1997;121(2):219–45. PMID: 9100487.

37. Hembree R. Correlates, causes, effects, and treatment of test anxiety. Rev Educ Res. 1988;58(1):47–77.

38. Eysenck HJ, Eysenck MK. Personality and individual differences: a natural science approach. New York, NY: Plenum; 1985. p. 424.

39. Covington MV, Omelich CL. "I knew it was cold before the exam": a test of the anxiety blockage hypothesis. J Educ Psychol. 1987;79(4):393–400. doi:10.1037/0022-0663.79.4.393.

40. Zeidner M. Test anxiety: the state of the art. New York, NY: Plenum; 1998. p. 440.

41. Elliott R. Tests, abilities, race and conflict. Intelligence. 1988;12(4):333–50.

42. Stankov L, Crawford JD. Self-confidence and performance on tests of cognitive abilities. Intelligence. 1997;25(2):93–109.

43. Fenollar P, Roman S, Cuestas PJ. University students' academic performance: an integrative conceptual framework and empirical analysis. Br J Educ Psychol. 2007;77(Pt 4):873–91. PMID: 17535509.

44. Mayer RE. Cognitive theory of multimedia learning. In: Mayer RE, editor. The Cambridge handbook of multimedia learning. New York, NY: Cambridge University Press; 2005. p. 31–48.

45. Winston KA, Van der Vleuten CP, Scherpbier AJ. An investigation into the design and effectiveness of a mandatory cognitive skills programme for at-risk medical students. Med Teach. 2010;32(3):236–43. doi:10.3109/01421590903197035.

46. American Academy of Child and Adolescent Psychiatry. Children with learning disabilities. Facts for Families. 2011;16:2. http://www.aacap.org/AACAP/AACAP/Families_and_Youth/Facts_for_Families/Facts_for_Families_Pages/Children_With_Learning_Disabilities_16.aspx

47. Flavell JH. Metacognition and cognitive monitoring: a new area of cognitive-developmental inquiry. Am Psychol. 1979;34(10):906–11.

48. Mevarech ZR, Amrany C. Immediate and delayed effects of metacognitive instruction on regulation of cognition and mathematics achievement. Metacogn Learn. 2008;3(2):147–57. doi:10.1007/s11409-008-9023-3.

49. Saks NS, Karl S. Academic support services in U.S. and Canadian medical schools. Med Educ Online. 2004;9(6):1–8. doi:10.3402/meo.v9i.4348.

Remediation of Interpersonal and Communication Skills

4

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Abstract

Learners may present with deficits in communication and interpersonal skills because of lack of knowledge, unfavorable attitudes, low skill level, or a combination of these factors. Overemphasis on the biomedical interviewing model, learners' psychological and psychiatric factors or issues of cultural or language diversity may also contribute to communication difficulties. For learners who need remediation in communication and interpersonal skills, the authors describe how they have achieved success by modeling their approach on seven principles of relationship-centered care, coaching, and effective feedback. They also present cases that illustrate these principles.

4.1 Introduction

> *A psychiatrist-educator colleague pulls you aside and tells you of a third-year student with whom she is working and about whom she has concerns. She has noted that the student's interactions with patients are awkward, and he appears to make patients uneasy with his manner. Your colleague knows that you will be seeing this student in his next clerkship and hopes that you can help.*

The challenges in identifying and then remediating trainees who have difficulty in interpersonal communication are wide and varying. Occasionally these students are identified on clinical skills examinations, but often the need for remediation becomes evident while observing the trainee in everyday clinical situations. Despite what we may

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observe in their outward behaviors, many of these students wish desperately to connect effectively with others; however, most do not have a single identifiable correctable "lesion" or deficiency. We will first enumerate the most likely obstacles that learners encounter in achieving excellent patient–provider interactions, and then the strategies that we have used to try to surmount them.

Learners often face obstacles to successful communication in several areas. One key aspect to helping remediate these learners is to identify the area or areas on which to focus. To help with this identification step, the faculty member can use real-time clinical observation, using a tool such as a mini-clinical evaluation exercise [1] or a Brief Structured Clinical Observation [2], and/or simulation case scenarios to identify the learner's strengths and areas requiring more skill.

We divide suboptimal communication skills into knowledge, attitude, and skills deficits. Furthermore, clinical reasoning skills deficits and issues such as diverse backgrounds and interaction styles, as well as psychological and psychiatric factors, can manifest as communication skills difficulties.

4.2　Potential Causes for Challenges in Communication and Interpersonal Skills

Causes for Challenges in Communication and Interpersonal Skills
1. Knowledge deficit
   (a) Approach to patient-centered interviewing
   (b) Clinical fund of knowledge
   (c) Inability to balance communication skills with clinical reasoning
2. Attitude deficit
3. Skills deficit
   (a) Identification of nonverbal or emotional cues
   (b) Development of rapport
4. Psychological/psychiatric factors
5. Interaction style
6. Diversity issues

4.2.1　Knowledge Deficit

The learner may not have a systematic approach to patient-centered interviewing although most clinical trainees in the current era have had exposure to one of many available structured approaches (see Table 4.1). Since clinical fund of knowledge that informs the content and organization of the interview a poor knowledge base will undermine interviewing skills. Students early in their clinical immersion experiences (e.g., medical students on their first clinical clerkship) sometimes become so mired in or completely distracted by getting their clinical reasoning and diagnostic process correct that they do not focus on the patient's concerns, or they lack skills to balance listening and empathy skills with clinical reasoning.

4.2.2　Attitude Deficit

Given that most trainees have had exposure to basic communication skills principles, a learner may perceive that patient–provider interaction skills are less important than other areas of clinical competence (see Sect. 4.10.3, Specialized Case).

4.2.3　Skills Deficit

The learner may lack skills to identify nonverbal or emotional cues, or may lack skills needed to build rapport.

4.2.4　Psychological and Psychiatric Factors

Learners may have clinical depression or too much anxiety (either generalized or about performance) in clinical settings to interact well. In these instances, empathically hearing the learner's perspective, followed by referral to a mental health professional, is key.

Table 4.1 Selected models for learning and teaching interpersonal communication skills

Model	Components of the model	Features
3 Function [12]	Establish rapport Obtain information Inform and educate the patient	Simple to remember; more intuitive approach
Four Habits [13]	Invest in the beginning Elicit the patient's perspective Demonstrate empathy Invest in the end	Explicitly includes patient's perspective Data in both inpatient and outpatient settings that corroborate utility of model
SEGUE [14]	Set the stage Elicit information Give information Understand the patient's perspective End the encounter	Sequential approach Lack of explicit naming of emotion
Calgary-Cambridge [15]	Initiating the session Gathering information Providing structure Building relationship Explanation and planning Closing the session	Specific, sequential steps within the model include suggestions
Kalamazoo Consensus Statement [16]	Build the doctor–patient relationship Gather information Open the discussion Understand the patient's perspective Share information Reach agreement on problems and plans Provide closure	Summary of large group of researchers Combines strengths of several models
NYU Macy Initiative [17]	Prepare Open Gather Elicit and understand patient's perspective Communicate during the exam Patient education Negotiate and agree on plan Close	Comprehensive, sequential
Smith [18]	Set the stage for the interview Elicit chief concern and set agenda Begin the interview with non-focusing skills that help the patient to express themselves Use focusing skills to learn symptom story, personal context, and emotional context Transition to the middle of the interview Obtain a chronological description of the HPI Past medical history Social history Family history Review of systems End of the interview	Very specific, sequential steps Detailed explanation of each step of the interview, including biomedical aspects Patient outcome data in internal medicine residents that support its use

4.2.5 Interaction Style

It is important to recognize when learners are highly introverted or on the continuum of autism spectrum disorder (see Chap. 13).

4.2.6 Diversity

Learners with cultural or language diversity may not follow or understand social norms implicitly understood by indigenous groups or native language speakers.

4.3 Step 1: Establishing a Supportive Learning Environment

When the student arrives on your clerkship, you observe his interactions with patients, and indeed you see that his mannerisms are distracting and awkward. Generally, the student has poor eye contact and stammers when interacting. After a patient completes a series of statements and awaits the student's responses, there is an uncomfortable pause. When a patient says something with emotional valence, the student does not detect these and moves forward with review of systems questions.

Review of previous coursework showed that there had been no prior concerns about knowledge base; he had performed at the class mean on the majority of pre-clerkship written exams. Comments from faculty observers in his pre-clerkship interviewing skills course showed no glaring deficits. However, some comments from standardized patients in the end-of-second-year OSCE reflected a sense of awkwardness but did not specifically describe the deficits.

(continued)

You arrange a meeting with the student to discuss these observations, saying, "I'd like to help you be more effective with patients. Can we meet tomorrow afternoon to talk about this further?"

Your initial steps in this meeting will include these goals:
Step 1. Establish a supportive learning environment
Step 2. Demonstrate your expertise on the topic and process of communication skills by modeling those techniques with the learner
Step 3. Listen to and acknowledge the learner's emotions and understand his/her perspective
Step 4. Encourage reflection on strengths
Step 5. Share one or more objective observations of learner performance and encourage self-reflection
Step 6. Emphasize that it is important for the learner to initiate the development of his/her own learning plan that is based on both self-reflection and feedback
Step 7. Determine a period of time for implementation followed by checking in on progress, revisiting learning plans, and modifying learning goals for continual improvement

We strongly recommend that conversations about remediation begin with getting to know the learner as a person—the equivalent of taking a social history with a patient. Showing genuine interest in the learner maximizes the possibility of establishing a strong foundation of partnership, trust, and "unconditional positive regard" [3]. In addition, stating an explicit commitment to work with the learner and to speak as nonjudgmentally as possible can enhance the learning climate in this delicate time period.

Sample statements: *"As we begin our work together, it is important to me to get to know you as a person. What kinds of activities do you do that you love? What influenced you to choose medicine as a career? If you were not in the medical profession, what would you be doing?"*

These questions are not idle cocktail party conversation. Answers to these questions can reveal the learner's underlying passions, motivations, and strengths. Eliciting learner strengths in this appreciative manner can often help remediators link personal attributes to potential goals.

4.4   Step 2: Demonstrating Expertise About the Topic and Process of Communication by Modeling

It is essential that remediators of communication skills exhibit fluency and flexibility themselves in one or more models of communication (Table 4.1) and use those same principles when interacting with struggling learners. The process of remediating communication skills depends as much on modeling exemplary behaviors as it does on teaching and facilitating learner behaviors. To explicitly apply principles of patient-centered communication skills to the remediation process, we favor an iterative process of interactional "AART" (see box). Too often, struggling learners are subject to passive learning practices, where remediators merely tell their perspective without first eliciting the learner's thoughts. This approach may result in the learner playing a less active role in his/her own learning.

Iterative, Interactional "AART"
Ask and frequently elicit the learner's thoughts
Actively listen and reflect the content of the learner's words
Respond with empathy
and only then:
Tell new insights from the remediator's perspective

4.5   Step 3: Listen to and Acknowledge Emotions and Understand the Learner's Perspective

You learn that this student felt great shame about his poor performance. He knew something was wrong but could not identify exactly what by himself. He knew that he felt anxious whenever interacting with patients, and this anxiety was heightened during observations (as with his psychiatry clerkship). He felt that all of his classmates were "superstars," and that he could never compete with them.

Learners whose patient–provider interaction skills are judged to be lacking often feel a wide range of emotions, including embarrassment, frustration, sadness, awkwardness, and defensiveness. Many equate poor performance with not being a nice person, or worse yet, being devoid of compassion—for most, a very condemning self-judgment that exactly contradicts the reason why they chose medicine as a career. Often learners will say, in self-defense, "when I'm in a *real* clinical situation [as opposed to a standardized or observed encounter], my patients like me."

Therefore, it is usually helpful to plumb the emotions behind the learner's reactions. Parallel to the process of emotional partnering with patients in clinical encounters, connecting emotionally with a learner undergoing remediation helps to build trust in the relationship. By expressing empathy and forming a connection, the work of remediation is more of a collaborative partnership and less of a required imposition. Rather than reacting only with statements like, "Well, you need to perform on this exam," or, "I can only evaluate you on what I observe," empathic statements such as those patterned after the mnemonic "PEARLS" (see box) [4] can be very helpful:

Getting on the same page and fully empathizing with the learner is highly powerful: from that stance, a remediator can more easily explore additional topics, such as

"I'd like to hear your ideas of how you might succeed on this exam, given that it doesn't feel completely real to you."

A word of caution: just because you may acknowledge the learner's emotions initially doesn't mean they will remain dormant for the remainder of the remediation process. The emotions arise again and again. Continuing to work on emotional connection with empathy skills will reap continued rewards.

4.6 Step 4: Encourage Reflection on Strengths

Once the emotional connection begins to develop, supporting the learner's strengths and passions can restore some of his/her confidence. Often in remediation, the tendency is for both remediator and learner to focus on deficit detection and elimination—what the learner is not doing well, and behaviors that the learner most wishes to change. An alternative approach is to turn instead to Appreciative Inquiry [5], a learning process that builds on success rather than focusing on deficits (see Chap. 18). The premise underlying the appreciative inquiry model is that all learners have strengths upon which they can build. Focusing on behaviors that encourage positive outcomes allows the learner to start from a place of known strength and comfort, which enhances the chance of further success. Additionally, having the student reflect on ideals of performances they have seen may also be helpful; this exercise serves as a point of inspiration for learners who find difficulty seeing anything laudatory in their own performances.

"Based on the video of your interaction with this patient, I'd like to hear from you about areas that you believe you are doing effectively."

"I agree that you use steady eye contact when introducing yourself to the patient."

One caveat, however, is that low-performing learners may overestimate their abilities; deft handling of these situations, without reinforcing behaviors that should not be reinforced, is key.

(In discussing an area of possible disagreement): *"I am hearing that you think your eye contact with the patient effectively communicated caring."*

This student desperately wished to connect with patients and was highly motivated to learn specific techniques to bring him in connection. He thinks he had been an excellent test-taker throughout college and the first part of medical school; he just buckled down and forced the information into his head.

"It sounds like one of your strengths is not only to take tests but also to assimilate information in a way that makes sense to you. I am also glad to hear that connecting with patients is very important to you, and I am excited to work with you to develop those skills."

4.7   Step 5: Observe the Learner's Performance, Encourage Self-Reflection, and Give Direct Feedback

Direct observation—whether it be in real time or via review of video recorded encounters, using role play or with a real or standardized patient—provides primary data for analysis. We recommend following the same process of "AART" used previously at the time of getting to know the learner: begin with *A*sking the learner for his/her own assessment of performance, *A*ctively listen to the learner's responses and compare his/her self-assessment with your own impressions, and begin to determine if the learner's strengths can be drawn on to effect needed changes. Then, continue by *R*esponding with empathy, affirming those things she/he did well and demonstrating your understanding of the learner's self-assessment, and conclude by *T*elling your own impressions of the learner's areas of strengths as well as areas that need work, and discussing next steps for practice and improvement. As previously mentioned, struggling learners tend to assess themselves more positively than their actual level [6, 7]; therefore, developing an increasingly accurate self-reflective eye is the only process by which learners will continually improve. (See Chaps. 13 and 14 for more on reflection and metacognition.) Following the iterative "AART" process of eliciting self-assessment and providing reinforcing feedback early and often in the relationship can help the learner to gain that accuracy and achieve success.

> *Initially this student wished to work on skills using role play, with the faculty member playing a range of patient presentations. To the student, this felt much more manageable, and with the faculty member's understanding of the student's goals, exercises could be tailored specifically to this student's level of need.*

One central tenet in developing expertise is an emphasis on deliberate practice with structured feedback [8]. It is important to set the learner up for small successes that build on each other. For example, one can start with a controlled or simulated scenario that allows the learner to employ strategies highlighting one of his/her own strengths. As the remediator focuses feedback on the effective behaviors that the learner exhibited, the learner can start from a position of success. Subsequently, the remediator can construct incrementally more challenging practice sessions that present progressively more challenging obstacles for the learner. The confidence gained by recent successful experiences allows the student to discover successful behaviors in these more challenging sessions. The educator can then deliver specific feedback to enhance behaviors that hone in on the desired skills.

The skill of engaging in specific feedback is important for learners in remediation and can be anxiety provoking (see Chap. 15). Feedback sessions that are frequent, planned in advance, and initially focus on reinforcing behavior more than corrective behavior modifications reduce the anxiety for the learner and the faculty member. One simple format for feedback, using the "AART" framework noted above, is to follow these steps:

1. Create an environment that allows for privacy and comfort.
2. Take an emotional reading of the learner: "How do you think that went?"
3. Elicit the learner's perception of successful aspects of the interaction.
4. Confirm those items that actually added to success. Add any not noted by the learner.
5. Elicit the learner's perception of aspects of the interaction that did not add to success or that could be done differently.
6. Confirm those items that did not add to success. Add any not noted by the learner. Be careful to focus on a few items that are most critical. An overwhelming number of items may have a negative impact on learning.
7. Elicit from the learner any "take-home" items. Allow the learner to state back learning points in his/her own words.

Using a structure for feedback reduces the potential negative emotional impact and allows for collaboration (see Chap. 15).

Upon initiating feedback after a simulated patient encounter involving a disengaged teenager, the student demonstrates frustration with the lack of progress toward understanding the patient's motivation and the amount of time "wasted" during the interview. The faculty member names the perceived frustration, indicates that teenage patients are often less able or unwilling to speak spontaneously during the interview (demonstrating understanding while respecting the student's frustration), and then supports the frustration as a positive indicator that this student was able to perceive a barrier to connecting with this patient. The emotion of the learner is validated and through creating the partnership, the ensuing corrective feedback or suggestions for future success are more likely to be accepted by the learner.

4.8 Step 6: Emphasize Development of Personal Learning Plans

Effective learning plans are written documents with specific goals and interventions toward those goals. Learners often struggle at first to develop personal learning plans because they have previously had no active role in generating learning goals and how to reach them. Work by Knowles in adult learning theory suggests that learner-generated interventions and goals result in increased frequency of application of interventions and increased success toward goals [9]. (See Chap. 13 on the role of learning plans in metacognition.)

"Tell me an area where you would like to improve."

"When you watch the video of that interaction, where did you feel that you struggled?"

Often, learners name many goals that remediators have not considered, usually making

those goals worth pursuing for learners' personal growth. After identifying several of the learner's own goals, the remediator can take the opportunity to ask for permission to add another goal or two.

"Are you open to a suggestion or two from my perspective?" [This is where pre-establishing expertise in this area can bolster your position.]

"You mentioned earlier that your eye contact helped your communication with patients. I'd like to analyze those phases of these encounters with you more closely—I have a different perspective. Can we agree to put that on your learning plan?"

Goals as part of learning plans are most effective when they are "SMART": specific, measurable, attainable, relevant, and time-bound [10]. The student can be challenged with beginning a draft of a learning plan based on the discussion of topics to be addressed. However, it is important and helpful for the faculty to revise the learning plan with the student in order to improve the utility of the plans. Some sample learning plans for this student might be:

"The next time I need to prepare a patient for hearing bad news in an encounter, I will change my tone of voice to be serious, not lighthearted, and I will make a statement that gives them a warning that the news is serious. I will say . . ."
"When the patient starts to cry, I will allow silence instead of continuing to speak. I will hand them tissues. After I count to 10 or when the sobbing has subsided, I will gently ask them to share their experience by saying …"

Because this student's strengths were test-taking and a desire to connect, goals collaboratively developed included: using a structured, standardized approach to each encounter; making certain to use at least one empathic statement during each history of present illness; remembering to ask about the patient's explanatory model of illness; and using the technique of summary to check his understanding of the patient's illness.

4.9   Step 7: Revisit the Learning Plan and Modify Future Goals

A learning plan is best used as a guide for continued intervention. Frequent review of the learning plan during remediation not only serves to verify intervention strategies but it also aids in recognizing progress. As the student works through the goals, new goals may emerge which are then used to update the learning plan.

4.10   Adapting the Approach to Specific Circumstances

4.10.1 Learners Who Lack Verbal Rapport-Building Skills

These learners feel compassion and empathy and possibly communicate them nonverbally but do not verbalize their empathy in a way that patients can appreciate.

Remediator: [after eliciting effective behaviors from the learner and other areas to improve] *I wonder if I could bring up an observation*.

Learner: *OK*.

Remediator: *I noticed that while your eye contact and vocal tone showed caring, I didn't hear a specific empathic statement*.

Learner: *But I was empathetic*.

Remediator: *I saw your intention, but I'm not certain that the patient did. I was guessing that you were feeling the patient's frustration, but a more precise tool to communicate empathy is an actual verbal statement*.

Learner: *They sound too touchy-feely*.

Remediator: *I'm hearing you feel uncomfortable saying words that communicate emotion. At the same time, did you know that for both surgeons and internists using a verbal empathic statement actually shortens their office visits*?

Learner: *No, I didn't*.

Remediator: *It's hard for patients to read our minds. I wonder if you could find expressions that would allow you to connect verbally with a patient without sounding too hokey*.

4.10.2 Learners with Intransigent Attitudes

One approach is to gain understanding of the learner's ultimate professional goals and to draw connections between these communication skills and those goals. For instance, succeeding in fields based on interactions between colleagues of different disciplines and professions invariably requires excellence in interpersonal skills.

Learner: *I don't need to learn this stuff. My patients will like me because I can save their lives*.

Remediator: *I'm glad to hear that you plan on establishing medical expertise. Tell me what areas of expertise you wish to achieve*.

Another approach uses appreciative inquiry (see above and Chap. 16): ask the learner what characteristics define the most exemplary clinicians s/he has seen.

Remediator: *Tell me of a time when you saw one of your role models do what you admired*.

Remediator: *And now tell me how that role model interacts with team members* [data gathering—potentially this role model does not interact well].

Remediator: *I'm wondering what your feelings and thoughts were when you first saw that role model in that interaction. Do you feel it is acceptable for that role model to scream in the operating room*?

After establishing the learner's perspective, use the opportunity to share knowledge about outcomes and pitfalls of ineffective communication skills for any practicing physician, including decreased efficiency, increased malpractice risk, poor patient outcomes and experiences of care, and poor provider well-being.

I'm curious if you know data on the relationship between the quality of interactions of exemplary physicians in your field and malpractice risk.

4.10.3 Specialized Case: Adaptation of the Approach to a Residency-Level Learner

The internal medicine residency program director asks you to meet with a first year resident because of poor performance on a standardized patient communication skills assessment. You view the videos of the interactions in advance of the meeting and observe a lack of empathy, the resident's inability to modulate his speedy and abrupt pace to the patients' emotional tone and tempo, and an insistence on adhering to his own agenda at the expense of that of the patient, to the point of being argumentative. In his initial meeting with you, he expresses that he prides himself on his interactions with his patients and is not sure he's going to gain much from working with you. He admits that there was "a lot going on" for him on the day of the assessment and that he feels that his performance on that day did not accurately reflect his skill level. He feels he develops good rapport with those around him.

How can you engage this learner in improving his skills?

- Empathize with his difficulties on that day and with the artificial nature of an interaction with a standardized patient.
- Further establish a supportive learning environment by acknowledging his sense of his own strengths and suggesting that your time together will help him to be even better than he already is.
- Spend time getting to know the resident, such as where he is from, where he trained, why he chose internal medicine, and where his career aspirations lie, as this builds rapport and allows you as the remediator to assess his motivations.
- Appreciate those areas that he feels are his strengths.

- Ask for examples of times when he felt that he did well.
- Ask him for examples of when he observed or experienced excellent communication skills.

He cites many positive influences for good communication, including how doctors took the time to meet with his family while his grandmother was a patient; a doctor in medical school who served as a role model for him in patient, colleague, and staff interactions; and an ICU attending during his internship year who took the time to understand patients' perspectives.

He also reflects on his experiences with a patient during an ER rotation who was viewed by everyone else as a "difficult patient." The patient, who was initially refusing to talk, finally began to open up when he took the time to empathize and listen to her concerns instead of only telling what he wanted.

At this point, what is your diagnosis/ assessment of this learner's communication skill ability and confidence?

- The resident's attitude toward the importance of communication skills is a positive one (although his attitude toward his need for work in this area is questionable). He agrees that empathy is an important aspect of patient care. However, his confidence about his ability to display empathy may outstrip his actual ability to do so.
- He does have a degree of self-awareness because he knew that the standardized encounters had not gone well; however, he may also have some blind spots if he believes that he is demonstrating empathy when he is not doing so.

How else can you diagnose the learner?

- In order to ascertain if his perception of his performance is congruent with reality, you can review the tapes with the resident and determine the accuracy of his self-assessment.
- You can also plan to spend some time observing the resident interacting with his patients and debrief these interactions with him in real time or afterward.
- Conversing with and reviewing evaluations from those who have worked with him in the past can also add important data.

How would you go about reviewing an interaction with the resident?

- Ask the resident for his own assessment of his performance first.
- Focus on strengths, asking him to name things that he did well.
- Once you have established some nascent trust and he is feeling more secure, then begin to explore areas that he can improve.

    Remediator: *Tell me what you feel you did well in this interaction.*

    Resident: *I think I showed compassion toward the patient.*

    Remediator: *Can you give me specific examples, for instance, phrases that you used, to demonstrate compassion?*

You point out that he may have felt for the patient, but that more of a demonstration of empathy is needed.

He recognizes that he foucused excessively on achieving his biomedical agenda rather than acknowledging the patient's emotional needs. You commend him on his observation and point out that, rather than being a nuisance to have to manage the strong emotion from the patient, if handled well, it can serve as a means for understanding where the patient is coming from and ultimately gain the patient's trust and ultimately achieve the desired biomedical outcome.

How would you go about designing a learning plan with this learner?

- Ask the learner to summarize what he has learned to date.
- Ask him to list what he feels he did well, and what he could do differently.
- Set up a follow-up meeting time to observe his skills, and ask the learner both what he wants to work on in the interim and what you will be looking for in the observed interaction at the next meeting.

The resident identifies two areas that he wishes to work on: (1) negotiating an agenda with the patient, and (2) dealing with strong emotions during confrontational encounters with patients.

Remediator: *I agree that those are good areas to focus on. Is there anything else?*

Resident: *No, I think that is about it.*

Remediator: *May I make a suggestion to add to your list?*

Resident: *Sure.*

Remediator: *I would be interested in seeing how you demonstrate the empathy that you feel for the patient's situation.*

- Ask the resident to remember how his mentors demonstrated empathy.
- Assess his knowledge and skill level for demonstrating empathy and review mnemonics for empathy (for example, PEARLS) if he is not aware of these approaches.

4.11   Conclusion

Remediation can be a challenging endeavor for the learner as well as for the remediator. We have found that this structured, seven-step approach can lead to major improvements in learners' communication and interpersonal skills [11]. Approaching the struggling learner from a perspective of coaching and unconditional positive regard, can be a challenging, especially if remediators find they have little in common with their

learners. Also the remediators must self-reflect and investigate one's own blind spots or issues of countertransference with a learner, and consultation with trusted colleagues and experts in these skills. Courses such as those held by the American Academy on Communication in Healthcare can also deepen skill sets and provide connections and feedback from these colleagues and experts.

References

1. Norcini JJ, Blank LL, Duffy FD, Fortna GS. The mini-CEX: a method for assessing clinical skills. Ann Intern Med. 2003;138(6):476–81. PubMed PMID: 12639081.

2. Kuo AK, Irby DI, Loeser H. Does direct observation improve medical students' clerkship experiences? Med Educ. 2005;39(5):518. PubMed PMID: 1584270.

3. Rogers C. On becoming a person: a therapist's view of psychotherapy. Boston: Houghton Mifflin; 1961. p. 420.

4. Milan FB, Parish SJ, Reichgott MJ. A model for educational feedback based on clinical communication skills strategies: beyond the 'feedback sandwich'. Teach Learn Med. 2006;18:42–7. PubMed PMID: 16354139.

5. Cooperrider DL, Whitney D. Appreciative inquiry: a positive revolution in change. San Francisco: Berrett-Koehler Publishers; 2005. p. 86.

6. Langendyk V. Not knowing that they do not know: self-assessment accuracy of third-year medical students. Med Educ. 2006;40(2):173–9. doi:10.1111/j.1365-2929.2005.02372.x.

7. Srinivasan M, Hauer KE, Der-Martirosian C, Wilkes M, Gesundheit N. Does feedback matter? Practice-based learning for medical students after a multi-institutional clinical performance examination. Med Educ. 2007;41(9):857–65. PubMed PMID: 17727526.

8. Ericsson KA. Deliberate practice and the acquisition and maintenance of expert performance in medicine and related fields. Acad Med. 2004;79(10 Suppl):S70–81. PubMed PMID: 15383395.

9. Knowles M. Adult learning. In: Craig RL, editor. The ASTD training and development handbook (Chapter 12). New York: McGraw-Hill; 1996.

10. Chang A, Chou CL, Teherani A, Hauer KE. Clinical skills-related learning goals of senior medical students after performance feedback. Med Educ. 2011; 45(9):878–85. doi:10.1111/j.1365-2923.2011.04015.x.

11. Chou CL, Chang A, Hauer KE. Remediation workshop for medical students in patient-doctor interaction skills. Med Educ. 2008;42(5):537. doi:10.1111/j.1365-2923.2008.03055.x.

12. Cole SA, Bird J. The medical interview: the three function approach. 2nd ed. St. Louis: Mosby; 2000. p. 295.

13. Frankel RM, Stein T. Getting the most out of the clinical encounter: the four habits model. Permanente J. 1999;3(3):79–88.

14. Makoul G. The SEGUE framework for teaching and assessing communication skills. Patient Educ Couns. 2001;45(1):23–34. PubMed PMID: 11602365.

15. Kurtz SM, Silverman JD. The Calgary-Cambridge Referenced Observation Guides: an aid to defining the curriculum and organizing the teaching in communication training programmes. Med Educ. 1996;30(2): 83–9. PubMed PMID: 8736242.

16. Makoul G. Essential elements of communication in medical encounters: the Kalamazoo consensus statement. Acad Med. 2001;76(4):390–3. PubMed PMID: 11299158.

17. Kalet A, Pugnaire MP, Cole-Kelly K, Janicik R, Ferrara E, Schwartz MD, Lipkin Jr M, Lazare A. Teaching communication in clinical clerkships: models from the Macy initiative in health communications. Acad Med. 2004;79(6):511–20. PubMed PMID: 15165970.

18. Fortin AHVI, Dwamena FC, Frankel RM, Smith RC. Smith's patient-centered interviewing: an evidence-based method. 3rd ed. New York: McGraw Hill; 2012. p. 284.

Remediation of Physical Exam Skills

5

Tahlia Spector and Cha-Chi Fung

Abstract

Novice clinicians vary greatly in physical examination (PE) skill levels. In this chapter, the authors define common PE deficits, explore institutional and educator constraints to educating about physical exam skills, describe methods of identifying learners needing remediation, describe potential tools that can be used in remediation, and, finally, revisit each of the major PE skills deficit domains with illustrative cases and specific remediation strategies for those cases.

"Observe, record, tabulate, communicate. Use your five senses. Learn to see, learn to hear, learn to feel, learn to smell, and know that by practice alone you can become expert."

—Sir William Osler [1]

5.1 Introduction

Novice clinicians demonstrate a diversity of physical examination (PE) skill levels. Learners' approaches to and facility with the PE are influenced by many factors, ranging from knowledge and application of physiology and pathophysiology, to personal biases and perceptions, to workplace-based experiences (the "hidden curriculum") during the preclinical years and clerkships. In this chapter, we will briefly name and define common areas of deficits for PE skills, describe methods of identifying learners needing remediation, describe potential tools that can be used in remediation, and, finally, revisit each of the major PE skills deficit domains with illustrative cases and specific remediation strategies. Notably, there is usually some overlap between domains, and students often exhibit more than one deficit.

5.2 Deficit Domains for Physical Examination Skills

Deficit domains for physical examination skills
1. Basic motor and technical skills
2. Experience and medical knowledge
3. Interaction
4. Clinical reasoning

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5.2.1 Motor/Technical Skills Deficits

Typically, these deficits are readily observable in the mechanical delivery of the skill—for example, palpating the thyroid incorrectly, insufficient force when percussing the lungs or abdomen to produce adequate percussion tones, or auscultating using the bell of the stethoscope instead of the diaphragm.

These types of deficits, however, may indicate more complex educational system issues. Students often learn the mechanics of PE skills (for example, auscultating the lungs from one side to the other in at least four places) in classroom settings, on peers, or on standardized patients. This method, though efficient and least disruptive to busy clinical practice, separates the relevance of PE skills from actual clinical contexts. A seasoned clinician, for example, would auscultate the lungs differently in a patient suspected of having a pneumothorax vs. one suspected of being in heart failure. In addition, students quickly pick up poor habits, such as listening to the heart and lungs through the patient's gown, from residents (or even attendings) on clinical rotations, and remediating faculty should remain aware that this strong hidden curricular force around the PE can thwart their efforts.

5.2.2 Experiential/Medical Knowledge Deficit

Learners with this type of deficit usually exhibit some ability to perform an appropriately focused exam but have difficulty with one of two types of exam: what to look for in a well-person visit or a follow-up examination for a chronic illness (for example, the PE for an annual check-up or a 3-month diabetes follow-up), or inability to discern subtleties between disease entities (for example, mistakenly identifying the dry "Velcro" crackles of interstitial lung disease as "rales" of congestive heart failure). Unless accompanied by other deficits, this scenario typically represents a teaching opportunity to expand a student's experience and knowledge base.

5.2.3 Interactional Deficit

This deficit constitutes a communication skills problem—how learners interact with the patient during the physical exam, and how they communicate physical exam maneuvers, results, and findings. These deficits can range from forgetting to wash their hands, to awkwardly performing aspects of the physical examination, to poor or omitted explanations to the patient about maneuvers the physician is doing, to not recognizing a patient's confusion during a jargon-filled explanation. (Please refer to Chap. 4 for a more complete discussion of remediating communication deficits.)

5.2.4 Clinical Reasoning

This may represent the most challenging to diagnose, as there are multiple steps in the clinical reasoning process (see Chap. 6). Many students know how to perform the specific maneuvers or a complete examination but lack the ability to select the relevant (focused) physical exam maneuvers to perform based on a presenting situation: they know "how" to do the exam but not "when" to do the exam [2].

Overall, the problems encountered can be found on a spectrum. At one end, learners demonstrate a complete disconnect or lack of organization. These students may not have generated a list of differential diagnoses prior to initiating the exam. They may not understand that the physical exam is supposed to support and refute the differential diagnoses created. These students perform almost the same exam on every patient and/or do not have an organized approach to the encounter that causes them to miss the diagnostic boat completely. In a clinic setting, this is the student who is the "data collector." He/she asks the history questions according to a formula, then performs a formulaic exam, presents the findings, and expects the resident or attending to synthesize the information provided. In an exam setting, he/she may run out of time to perform any exam because of a disorganized approach. In the middle

of the spectrum is a learner who creates a limited differential diagnosis, and, therefore, a limited and inappropriate exam ensues. This may be due to omitting dangerous entities or often due to premature closure. Alternatively, the learner may create an appropriate differential diagnosis, but not know what they are looking for on exam, or what positive findings represent. Finally, at the other end of the spectrum, and often difficult to differentiate from medical knowledge deficit, the student may not know what specific maneuvers represent or how they help differentiate between disease processes.

5.3 Identification of Learners

Although seasoned clinicians would ideally observe learners in multiple patient encounters in their entirety to identify PE skills-related deficits in clinical reasoning, knowledge, and/or skill, logistical constraints usually limit this type of comprehensive direct observation and feedback [3]. Often, and more viably, faculty observe learners performing small "essential" parts of an exam, allowing for identification of some technical and interactional deficits. Unfortunately, the format by which most learners' skill levels are assessed typically relies on conference room-based "rounding"—hearing patient case presentations that include the exam findings [4]. Although rounding efficiently addresses routine patient care issues, it poses inherent challenges to clinicians trying to accurately identify learners' weaknesses in PE skills.

Without direct observation, the accuracy of findings obtained by student's examination comes into question. For example, when told that the "neuro exam was unremarkable," which components of the exam were done? If the learner reports diminished reflexes, is this due to a physiological problem, or were they just poorly elicited? Perhaps the learner didn't appreciate (or even listen for) a carotid murmur but was "coached" about its presence by a resident. Finally, the interactional component of bedside manner and approach to performing sensitive exam maneuvers cannot be assessed during these rounds. The ultimate danger is that inaccuracies can significantly compromise the validity of patient management plans. As a relevant aside, many have written about a "hidden curriculum" among clinicians denigrating the value of the physical examination because of the presence of laboratory or imaging modalities. Directed teaching and/or assessment of the physical examination can potentially interrupt perpetuation of these myths.

Despite the logistical constraints posed by busy clinical practice, several structured opportunities, all of which require direct observation by seasoned faculty clinicians, allow for the identification of learner weaknesses in PE skills:

- *Bedside teaching*—Often used to demonstrate a patient's exam findings to a group of students or residents (and not intended to put any learner on the spot), bedside rounding can allow a learner to demonstrate PE skills and can effectively highlight motor, experiential, and interactional deficits.
- *Semiformal patient interaction*—(e.g., clinical evaluation exercise—CEX, Mini-CEX [5], or BSCOs—Brief Structured Clinical Observations)—These are structured opportunities to observe a learner perform specific parts of a clinical encounter and are more flexible in terms of the setting and time. However, faculty must know that multiple observations are necessary when using these tools to achieve an acceptable level of accuracy in assessing a student's performance [5].
- *Formally structured skills courses or workshops*—These structured learning experiences are specifically designed to teach specific skills (for example, cardiopulmonary or musculoskeletal examination techniques) that use standardized or real patients in small group settings and present opportunities for direct observation of student performance.
- *Formal testing*—(e.g., OSCEs—Objective Structured Clinical Examinations using Standardized Patients) [6]—Multiple stations with clinical encounters using standardized patients present opportunities for faculty clinicians to review focused encounters and to identify deficits in clinical reasoning, knowledge, and skills. In addition,

standardized patients complete checklists of historical, PE-related, and interactional components of the exam that assess learners' clinical performance in a standardized setting. These exercises are expensive to carry out and thus would not be ideal for many clinical learning settings [7, 8]. However, especially if they are videotaped, OSCEs can provide objective information about learner performance. For learners with deficits, faculty can review performance with learners, encourage learner self-reflection, and prescribe individualized remediation plans [9–11].

5.4 Approaches to PE Skills Remediation

Once we identify the learners needing assistance and the scope of the problem, we use a three-step approach:
1. Identification of the students' deficit(s)
2. Creation of an individualized remediation strategy
3. Reassessment to ensure improvement

Exercises can be categorized into four major types: clinical activities, independent study, precepted video review, and organized group activities [12]. The remediation strategies recommended for the domains below incorporate some combination of these exercises to optimize learning outcomes.

5.4.1 Deficit Identification

Faculty-Observed Clinical Performance Assessment: This assessment can be achieved by precepted video review or by any of the direct observation opportunities listed above. Certain deficits are clear from direct observations (e.g., technical skills and interactional elements) while others (especially clinical reasoning) must be ascertained by provocative questioning. Leading the learners through the thought process behind why they chose to examine the

patient a certain way, what focused exam they would do, or how they would examine correctly if done again is paramount. A self-reflection exercise can help prepare the student for a video review encounter and can also help guide the discussion with the clinical faculty member [11] (Example 5.1).

It is helpful to review either multiple videos or key segments of multiple encounters to see if detected deficits are global or specific to an encounter. This understanding can point to lack of experience or medical knowledge as the source of the deficit.

Example 5.1
Learners' instructions for a self-reflection exercise while reviewing video recording of their clinical performance examination. A similar exercise can be adapted to assess learners' thinking in actual clinical settings, rather than in the context of video review; however, video reviews present a distinct advantage in building in time for reflection and metacognition (Chap. 13).

Self-reflection Exercise
There are four *QUESTIONS* you need to answer for each case. To answer them, you will need to think back to when you were seeing the patient for the first time and reflect on what you were thinking during each of the four segments listed below.
1. Before starting your video, read the *Presenting Situation* provided in the folder and answer:
   "What were you thinking after reading the instructions on the door?"
2. Start the video and stop when you have finished the history taking portion of the encounter and answer:
   "What did you think was going on at this point in the encounter? Do you still feel that way?"

(continued)

3. Start the video again and stop after you have finished the physical exam portion of the encounter and answer:

   "What did you think was going on at this point in the encounter? Reflecting back, is there anything that you would have done differently?"

4. Start the video again and stop after you have ended the encounter and answer:

   "What do you think about the encounter? Reflecting back, is there anything that you would have done differently?"

Examples of questions to ask during performance review:

1. After completing your history, what are the top (3–5) disease processes in your differential diagnosis in order of likelihood?
2. What are the disease processes you are most concerned about that need to be ruled out?
3. What do you think is going on at this point in the encounter?
4. What pertinent positives or negatives were you looking for or would you look for now?
5. If you were to perform the physical exam again based on this differential, describe what you would do.
6. What examination findings would support or refute that hypothesis?
7. I see that you listened to the [heart]: what were you listening for? How would you change the exam to find what you are looking for?
8. What do you think is the best position for the patient to be in in order to elicit that finding? Why?

We name other means of identifying PE skills deficits with the individual cases in the next section.

5.4.2 Individualized Remediation Strategies

5.4.2.1 Real-Time Remediation

We find it highly efficient and meaningful to take learners to the bedside to demonstrate correct PE techniques, discuss underlying physiological rationale for those techniques, and to teach PE pearls (e.g., how to examine a ticklish patient). Obviously, when a more in-depth teaching conversation is needed, teaching at a patient's bedside may be inappropriate.

5.4.2.2 Independent Study/Self-directed Learning Exercises

We often pair these activities with other experiential activities (for example, practice interactions with standardized or real patients) in order to establish the fundamental knowledge base needed to learn more skills. Many of these activities can be done alone or in small study groups. Useful exercises include:

- Listing differential diagnoses for certain chief complaints based on age, gender, and possible comorbidities in order of most common and most dangerous.
- Creating charts that discriminate which exam findings are consistent with or help discern between different but similar entities (Example 5.2).
- Considering what examination elements would be required in a patient with various chief complaints—can be done as an exercise on a simulated patient (either role play with another student or on paper) (Fig. 5.1).
- Considering what examination should be performed in a well-person visit when the patient has various underlying medical problems. This is usually a two-step process: first, identification of the possible complications of a disease process, followed by demonstration of an exam to look for those items (Example 5.3).
- Reading parts of a PE skills textbook or watching videos that elucidate appropriately and correctly performed PE maneuvers. Texts that are organized by cases or chief complaints rather than by organ system may have the added benefit of modeling more accurate and complete examinations.

Example 5.2:

Example of a Focused Physical Exam exercise using a case adapted from the Hypothesis-Driven Physical Examination Student Handbook. [13]

FOCUSED PHYSICAL EXAMINATION EXERCISE

Complaint: Abdominal Pain

Daniel, 40 years old, came to the doctor because he has been experiencing abdominal discomfort on his right side and appetite loss. He has also noticed a low-grade fever over the past few days. He's been a steady drinker. You are thinking of possible alcoholic hepatitis or cholangitis-cholecystitis. In anticipation of your physical exam of the abdomen, list the positive sign(s) associated with each diagnostic hypothesis.

-	Alcoholic hepatitis	Cholangitis – cholecystitis
Observe Sclera	-	-
Observe skin	-	-
Auscultate abdomen, all 4 quadrants	-	-
Percuss liver span	-	-
Percuss abdomen, all 4 quadrants	-	-
Palpate liver edge	-	-
Palpate spleen	-	-
Palpate abdomen LUQ	-	-
Palpate abdomen RUQ	-	-
Palpate abdomen RLQ	-	-
Palpate abdomen LLQ	-	-

Indicate on the figure where you would examine the patient and what you are looking for in each of the following chief complaints:
1. Syncope in a young female
2. Chest pain in a middle aged male
3. Abdominal pain in a young male
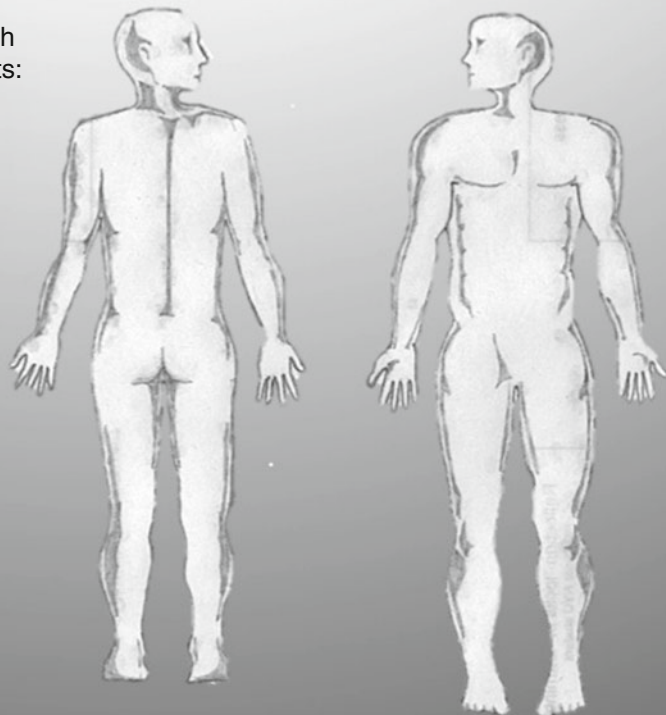
Fig. 5.1 Focused exam worksheet. This exercise can be done on live humans such as standardized patients, on simulators, or on a worksheet like the one in this figure (original artwork by Zachai Kalet-Schwartz)

Example 5.3

Sample exercise—Considering what examination should be performed in a well-person visit when the patient has various underlying medical problems.

What examination would you perform in a 48-year-old man with diabetes at his 3-month visit?

1. Consider the possible complications of diabetes pertaining to each organ system.
   - HEENT
   - Cardiovascular
   - Respiratory
   - Gastrointestinal
   - Genito-urinary
   - Muscular
   - Skin
   - Neurological
2. What examination would you perform to evaluate/rule out each of the complications above that you identified? Describe what exam you would do (including special tools used) and specifically what you are looking for (e.g., for a patient with a headache—ophthalmoscopic exam of discs to rule out papilledema).

5.4.2.3 Clinical Activities Focused on PE Skills

These are activities specific to the learners' deficits and can be incorporated as part of the regular clinical rotation. Examples include: (1) practice with systematizing approaches to the history and physical exams, (2) practice creating an appropriate differential diagnosis that includes dangerous entities, asking specific questions to rule these in or out and then performing an exam that supports/refutes these entities in the differential, (3) increase the speed and flow of the encounters to improve patient comfort, and (4) practice performing certain examinations (e.g., ophthalmological or cardiovascular exam) on each patient during a clerkship.

5.4.2.4 Organized Group Activities/Courses

Courses have been designed for third- or fourth-year students specifically to address the deficits identified either via a structured curriculum or faculty teaching at the bedside. They can be faculty-intensive but are often very well attended and appreciated.

- Advanced diagnostic skills course uses real patients with chronic but stable medical problems to appreciate the subtleties of the physical exam.
- Teaching pre-clerkship students helps review fundamental PE skills.
- Hypothesis-driven PE workshops use standardized patients to act out different medical problems to guide learners through the reasoning process in conducting a focused physical examination based on a chief complaint [14, 15].
- Evidence-based PE workshops that use the Rational Clinical Examination series from the *Journal of the American Medical Association* to recap basic PE skills and to learn the highest-yield disease-specific PE maneuvers.

5.4.3 Reassessment

Reassessment can take the form of any of the strategies used for primary assessment. It is most helpful to have an evaluator who is aware of what specific deficit(s) had been the focus of the remediation to ensure it remains a focus in the reassessment.

5.5 Tailored Remediation for Specific Physical Examination Deficits

Learners require individualized remediation strategies depending on their learning needs and the domain(s) involved. Strategies that incorporate hands-on, practical, and interactive activities are more effective than reading and shadowing alone [16]. For fundamental knowledge gaps, reading ideally precedes interactive case-based exercises that promote the transfer of knowledge [17].

For each PE skills deficit domain, we provide some learner profile examples and the remediation plans prescribed for the specific deficits we uncovered.

5.5.1 Motor/Technical Skills Deficit

Case 1

Frank is a third year medical student who saw an older male with atherosclerotic disease who had gnawing back pain. Frank palpated below the umbilicus to a depth of about 1 cm, checking for an enlarged pulsating aorta. Frank did not feel the enlarged pulsating mass that was quite obvious with palpation to the correct depth in the correct location and with the correct technique.

Case 2

Ming was auscultating the lungs of a standardized patient with possible asthma or COPD during a diagnostic skills course. She listened only to the beginning of expiration before moving her stethoscope to another area. After a discussion about the pathophysiology of the diseases, she recognized that it would be difficult to hear end-expiratory wheezes with her technique.

Remediation

Step 1: *Deficit identification*:
Engage in a conversation with the student to ascertain if there are additional deficits involved.

Besides not understanding the physiology of the aorta and where it branches, Frank commented that he did not palpate very deeply for fear of hurting the patient. On further discussion, the fear of causing patient discomfort was a

recurrent problem that transcended many examination elements. This interactional deficit highlighted that Frank still needed to acquire the emotional maturity needed to ultimately balance the patient's comfort with the need for an effective clinical exam.

Ming demonstrated an additional deficit in medical knowledge about what exam characteristics suggest severity of disease, as well as how the character and timing of a wheeze can confer information about the type of obstruction that may be present in the respiratory tract.

Step 2: *Real-time remediation*:
Demonstrate correct technique and rationale (e.g., physiology or pathophysiology) so students can observe the difference between correct and incorrectly performed techniques, and follow by close observation of student re-performance of the PE elements. Note that if the student requires more in-depth teaching due to a concurrent knowledge deficit or complete lack of knowledge about approaching a patient, these conversations could more appropriately occur away from a patient's bedside.

Step 3: *Planned remediation for motor/technical skills deficit*:
Recommend resources to improve the technical skills aspect of the physical exam. Possible resources include:

- Physical examination textbooks
  - Bates' physical examination and history taking [18]
  - DeGowin's diagnostic examination [19]
- Online videos or real-life/real-time demonstration of correct exam techniques (Bates' Physical Examination Videos provided as part of the textbook package; UCSD Practical Guide to Clinical Medicine) [20]
- Course in diagnostic or physical examination skills

We directed both students to books and online resources and suggested studying a certain technique one day followed by deliberate practice of that technique on every patient seen in their clerkship the next day, considering what findings

they would expect (even if normal). We encouraged them to choose a new technique once they feel they had perfected the prior set of skills.

Step 4: *Remediation for other deficits*:
Frank and I returned to the patient to solicit his experience with the "correct" exam that we had conducted. The patient's reassurance that the exam was more "uncomfortable" than painful and that he understood that we needed to do "whatever was necessary to figure out what was going on," referring specifically to inflicting pain as part of the exam, reassured the student. Frank also found it advantageous to have the exam performed on him to experience the depth and degree of discomfort.

Ming read more about lung diseases and made extra efforts to practice auscultation on patients with lung diseases. She was also directed to online audio recordings that demonstrated different breath sounds and their diagnoses (recommendation: search on MedEd Portal www.mededportal.org) [21].

Step 5: *Reassessment*:
This step must involve direct observation of learner's performance with specific feedback after steps 1–4 above.
- Formal (standardized patient experience) or informal (at the clinic/bedside) direct observation of learner performance
- Testing to verify improvement/mastery of skills
 Frank was reassessed at the end of his rotation on another patient presenting with back pain.

Ming was reassessed during a clinical performance examination of a patient with shortness of breath.

5.5.2   Experiential/Medical Knowledge Deficit

We divide this section into experience/knowledge deficits for initial diagnosis and for management of chronic illness.

5.5.2.1 Initial Diagnosis

> **Case 3**
> *Paulina recognized that her patient had cellulitis. She even knew that she should consider necrotizing fasciitis in her differential, but did not have the medical knowledge or experience to identify the findings that would help differentiate the two.*

> **Case 4**
> *During an observed history and exam, Carlos determined that his middle aged female patient had some sort of arthritis. He couldn't recall whether distal interphalangeal (DIP) joint involvement was more common in rheumatoid arthritis or psoriatic arthritis.*

Step 1: *Deficit identification*:
This deficit is usually detected during a patient presentation, with direct inquiry about how the student could differentiate between similar disease processes. It is helpful to go to the bedside and ask for a demonstration of the PE (if not already witnessed) to ensure correct technique and to ascertain if there are additional deficits involved.

Paulina had a basic understanding about soft tissue infections but thought that necrotizing fasciitis was just a very bad cellulitis that needed intravenous medications.

Carlos recalled something about polyarticular, oligoarticular, and monoarticular arthritis and that they affected different joints. He even recalled that PIP vs. DIP involvement was a differentiating characteristic, but could not recall which joints were involved with which disease process between rheumatoid, psoriatic, gout, and osteoarthritis.

Step 2: *Real-time remediation*:

Discuss using a query format about physiology or pathophysiology and how to differentiate between disease processes.

Paulina and her faculty advisor returned to the patient to discuss exam findings—toxic appearance, satellite lesions, pain out of proportion to exam, rate of spread, etc.—as well as laboratory evaluations that would be most consistent with necrotizing fasciitis.

Carlos demonstrated his PE findings of asymmetric joint swelling with DIP involvement. On closer observation, we were able to discern pitting in the nails and mild scaling of several extensor surfaces.

Step 3: *Planned remediation*:

- Reading about similar diseases and examination findings that help discriminate between them
- Making a chart of similar diseases with expected historical and physical differences (see Chap. 6)
- Pairing with a clinician who can provide one-on-one guidance: practice creating discriminating questions/exam characteristics that differentiate between similar disease processes Paulina read about soft tissue infections.

Carlos created a spreadsheet of the different arthritides and how they differ both clinically and historically.

Step 4: *Reassessment*:

This step must involve direct observation of learner's performance with specific feedback after steps 1–3 above.

- Formal (standardized patient experience) or informal (at the clinic/bedside) direct observation of learner performance
- Testing to verify improvement/mastery of skills

After reading about soft tissue infections, Paulina sought out additional patients and presented her findings to another attending.

Carlos referred to his spreadsheet when evaluating other patients with arthritis complaints.

5.5.2.2 Management of Chronic Illness

Case 5

During a clinical performance exam, Beth does poorly on a case involving a patient with diabetes who presented for a 6-month follow-up. She does a great job assessing the patient's history since the last visit in regard to diet and medication and even asks questions about potential consequences of his disease, but she has difficulty focusing the physical exam. She examines the feet for peripheral neuropathy using light touch only and fails to perform a fundoscopic exam, a cardiovascular exam, or check for neuropathy with a microfilament or tuning fork.

Step 1: *Self-reflection exercise*:

In preparation for a face-to-face meeting, Beth was asked to review her video and complete a self-guided reflection exercise.

Step 2: *Deficit identification*:

We engaged in a conversation to ascertain if there were additional deficits involved or any other issues that may have prevented her from performing better. Beth stated that she had no idea what, if any, examination was expected from her with this kind of patient. She thought she was being tested on how well she counseled the patient on diet and exercise. During our discussion, Beth demonstrated appropriate knowledge about the expected disease progression and possible consequences of poorly controlled diabetes, including problems involving the ocular, cardiovascular, renal, and neurological systems. The additional deficit elicited in the discussion pertained to knowledge about which neuroanatomical tract is most affected in diabetes and about the use of a microfilament to test for peripheral neuropathy.

Step 3: *Real-time remediation*:

Review general expectations of chronic care/follow-up/well-person visits—focusing a query-based discussion on rationale and correct technique (e.g., pathophysiologic consequences of progression of disease process or expected "screening exam").

After our discussion, Beth appropriately demonstrated which head-to-toe exam maneuvers she would have performed if allowed to repeat the case.

Step 4: *Planned remediation for awareness deficit*:
- Videos of an encounter/observe a clinician conducting such type of encounter
- Reference to national standards/guidelines (e.g., Standards of Medical Care in Diabetes-2012 by the American Diabetes Association)
- Shadowing an expert clinician (must make sure this is someone who can demonstrate the "correct" approach or one agreed upon by a consensus panel)
- Deliberate practice during clerkships

Step 5: *Planned remediation of other deficit*:

It was suggested that Beth review the pathophysiology of diabetic neuropathy and the examination maneuvers that elicit findings in each of the spinal tracts.

Step 6: *Reassessment*:

This step must involve direct observation of learner's performance with specific feedback after steps 2–5 above.
- Formal (SP experience) or informal (at the clinic/bedside) direct observation of learner performance
- Testing to verify improvement/mastery of skills

Beth was required to take a mini-clinical performance exam where a clinical educator observed her and provided feedback.

Step 7: *Curricular questions*:

A students' expression of knowledge and skill not only reflects his/her own abilities but is also an expression of the education and training he or she is receiving. If multiple students are noted to have similar deficits of this type, the question arises whether there is a deficiency in the curriculum and whether there needs to be additional education and/or skill building in this arena.

Once a consensus is reached (perhaps by the medical education committee or other assigned committee) about what should constitute a "screening examination" or "well patient visit," a decision about where to implement this learning needs to be reached, and, ideally, the educators need to be trained to teach consistently with this vision. Should this be part of a Fundamentals course? Should it be a required lecture during a clerkship? Should a patient encounter be required during a primary care clerkship?

5.5.3 Interactional Deficit

Case 6

Ivan was uncomfortable with having to perform a rectal exam on a male patient to assess for a perirectal abscess. His extremely tenuous and awkward approach was met with so much hesitation and concern from the patient, the patient ultimately requested that a faculty clinician perform the exam instead.

Case 7

During Ken's clinical performance exam, he acted very distracted and disinterested—repeating questions, looking at his watch, leaning back in his chair with his leg crossed over his knee and his arms crossed. The exam was curt and dissociative. The standardized patient's response was quite negative and cited feeling uncared for, not listened to, and unimportant. Ken failed the physician interaction component of the exam.

Step 1: *Deficit identification*:

Discuss with the learner about how the encounter went and how well he/she interacted with patient. It is important to determine whether the learner was aware of what the patient's reaction to the encounter was. Ascertain whether there are additional deficits. This can be done after the patient encounter or after reviewing a video-recorded encounter. Self-reflection exercises that target communication/interactive type of skills are often useful.

After Ivan's encounter, when asked about his tenuousness, he reported feeling uncomfortable "probing a man there." He felt it was disgusting. He also lacked knowledge about the differential diagnosis of perirectal abscess.

Ken was assigned to complete a self-reflection exercise prior to his video review. Upon review, he lacked insight into why he failed—he felt he *said* all the right things.

Step 2: *Real-time remediation*:

- Discussion and acknowledgement of discomfort with exam maneuvers
- Simulated student experience—student becomes the patient who would have a simulated physical exam while having legs dangle off end of gurney, uncovered while in lithotomy position (though clothed), or awkwardly vs. confidently requesting to perform exam maneuvers for which the patient may feel uncomfortable
- Simulated feedback—Experience of the remediation itself with negative followed by positive nonverbal communication while providing feedback (body language, distractibility vs. focus, etc.)

It was critical to acknowledge Ivan's discomfort and distaste for the exam. At the end of our discussion, he recognized the need to differentiate perirectal from perianal abscess because of the differences in work-up and management. Ivan also came to realize that the patient was probably more uncomfortable than he was, and that displaying confidence and normalizing the exam to patients can help alleviate their discomfort.

During the first part of Ken's video review, the remediator provided feedback on the case while displaying distracted nonverbal behaviors such as repeatedly checking the cell phone and watch, sitting back, crossing arms, and looking away disinterestedly. Then the remediator asked Ken to consider how he felt about the feedback encounter. The remediator then continued the session while leaning forward, focused and engaged in the discussion of the case, followed by discussing how different these experiences could be for the patient and while reviewing portions of the history and exam with special note to his nonverbal communication.

Step 3: *Planned remediation*:

- Readings about patient experience. We often add reading on the potential legal ramifications of positive vs. negative patient experiences and bad outcomes [18]
- Possible counseling about personal aversions to performing exam maneuvers
- Deliberate practice being empathetic to the patient experience during exam maneuvers assuming that the patient is scared, wary, and in pain with each encounter
- Shadowing clinical faculty with excellent bedside manner

Both Ivan and Ken were provided some readings and were asked to deliberately practice performing examinations paying attention to patient experience.

Step 4: *Reassessment*:

This step must involve direct observation of learner's performance with specific feedback after steps 1–3 above

- Formal (standardized patient experience) or informal (at the clinic/bedside) direct observation of learner performance
- Testing to verify improvement/mastery of skills

Ivan was observed performing a pelvic exam on a young woman (another procedure he felt uncomfortable with). Again, the clinician needed to guide him through maneuvers that

ensured patient comfort such as properly covering the patient and explaining what he was doing. He continued to feel awkward with subsequent observed examinations, but did eventually perform the appropriate mechanics of the maneuvers.

Ken retook a clinical performance exam and demonstrated some improvement in nonverbal communication skills. However, he needed further coaching in communication skills overall.

5.5.4 Cognitive/Clinical Reasoning

Case 8

On three different presenting situations on the clinical performance exam, Leon performed the following exam: Swung light back and forth between patient's eyes, listened to the heart in four places, listened to the lungs in four places, and palpated the abdomen in four places. When asked what the student was looking for during each of these maneuvers, he had no clear idea.

Case 9

A patient presented to the Emergency department with RLQ pain. Her history was concerning for appendicitis. Upon presenting the patient, Martin reported his exam findings that included rebound and guarding of the abdomen and tenderness at McBurney's point. His plan was to perform a CT scan. He missed considering gynecological causes and did not perform a pelvic exam. The patient had an ectopic pregnancy.

Case 10

On review of a clinical performance exam in a patient with chest pain, Paris recognized that the patient needed a "cardiac" exam. She palpated and auscultated the heart in the appropriate places with the patient upright, at 30°, and lying on his left side with both the bell and the diaphragm. She felt for PMI and heaves in various positions, then she looked for pedal edema. She did not listen to the lungs.

Case 11

Jody recognized that her patient presenting with mechanical falls needed a neurologic exam to determine whether the cause was muscular, sensory, or balance. She discovered that the patient had difficulty with gait and her Romberg test was positive. She tested for strength and sensation and noted rapid alternating hand and finger nose tests were all normal. Lacking an understanding about what the Romberg maneuver tests are for, she did not proceed to test position or vibration sense in order to assess for pathology in the dorsal columns.

Case 12

Xavier was evaluating a young male with syncope. He recognized that he should listen for a cardiac murmur consistent with hypertrophic cardiomyopathy but did not recall the exam maneuvers that would express the murmur so he did as many as he could think of.

Step 1: *Deficit identification*:

In order to identify deficits in clinical reasoning, one must first ascertain what differential diagnosis forms the basis for a student's physical exam. This is especially true for chief complaint-based examinations that require more focused maneuvers to rule in and out the various disease processes in the differential. In addition, it is important to determine if the student has developed any kind of systematic approach to the examination, as it will aid in providing remediation strategies. Finally, one must ascertain if there are additional deficits involved.

We found Leon to be disorganized in all aspects of data collection. He suffered from examination anxiety and was attempting to pass via a shotgun approach to collecting as much data as possible to accrue points. He also lacked the ability to limit a differential diagnosis to the most common and most dangerous entities because of his disorganization that proved to transcend testing situations.

Martin felt that he has seen patients with symptoms of appendicitis like this one so many times on his surgery clerkship, that the diagnosis seemed obvious.

We questioned Paris about the incompleteness of her examination. She stated that auscultating the lung was part of the "pulmonary" exam and was therefore not part of a focused exam for cardiac concerns. We diagnosed that she lacked understanding of how a pulmonary examination helps with cardiac diagnoses such as congestive heart failure, and likely had insufficient understanding of cardiac pathophysiology.

Jody performed the neurological maneuvers she learned without having a clear understanding what a positive result represented or what further testing would be required.

Xavier had created a good differential and even performed the cardiac examination with technical skill. His deficit was a lack of understanding of the pathophysiology of hypertrophic cardiomyopathy and a lack of recall about how to elicit the murmur.

Step 2: *Real-time remediation*:

Faculty demonstration of correct technique and rationale (e.g., physiology or pathophysiology) provides the most useful and immediate feedback. Almost every student who requires remediation can benefit from suggestions about how to improve organization or how to employ strategies to generate memory triggers to help prevent missing historical or examination data that would help hone the differential. Over the years, we have included in almost every remediation session a brief discussion about how to utilize the review of systems to ensure that no important historical data is missed. This exercise can be done as part of a systematic approach to a "relevant and focused" head-to-toe exam.

> *An example script: "My clinical examination begins with an assessment of the eyes of every patient. It establishes rapport and gives relevant information—for patients with abdominal pain, I look for icterus and conjunctiva pallor, for diabetic patients, I perform a funduscopic exam, and for rheumatological complaints I look for evidence of uveitis. While I begin the exam with the same body part systematically, I consider the differential in the findings for which I am searching."*

Step 3: *Planned remediation*:

- Creating a "scut sheet" exercise (Fig. 5.2) that helps organize historical and exam data, in addition to lab data and patient to-do lists
- Constructing an individual or group exercise to go through appropriate differential diagnoses for chief complaints given different demographics, followed by an exercise in creating lists of discriminating questions and focused exam maneuvers to differentiate between similar disease processes
- Referring to books or videos that demonstrate system-based or chief complaint-based physical examinations (e.g., hypothesis-driven physical examination) [15]
- Referring to online or computer-based software (several commercial offerings available) that provide exercises in systematic approaches to doing PE, for example, asking "what exam would I do to support/refute items in a given differential?"

(neuro, card, pulm, GI, renal, FEN, heme, ID)

Name: ID: Room:

DOB/Age: DOA:

HPI: (quality, onset, duration, frequency, severity, better/worse, relief, assoc
symptoms)

PMH/PSH: All.:

                                                  Meds:

Fam Hx: (CAD, HTN, CA, DM)   PE:

Mom   T   BP   P   R

Dad   O$_2$ sat

                                    HEENT:

Soc Hx.:   Neck:

                                    Cor:

                                    Pulm:

EtOH   Abd.:

tob   Back:

IVDA   GU/Rectal:

                                    Ext:

                                    Skin:

                                    Neuro – CN II – XII

                                            Motor

                                            Sens

                                            Cereb/Gait

                                            Reflexes

Fig. 5.2 This "scut sheet" exercise can help organize historical, examination, laboratory, and imaging data - this example only lists the history and physical examination

- Offering a course in diagnostic or physical examination skills that provides practice in creating appropriate differential diagnoses with case exercises
- Practicing a systematic approach to both history and PE
- Shadowing exemplary clinical faculty
- Practicing an organized review of systems approach (for example, head-to-toe) to gather relevant data and prevent premature closure

All of the above was recommended to Leon. He was required to take the skills course and online practice prior to re-testing for the clinical performance exam. He was also given a referral to a specialist to discuss his testing anxieties.

We pushed Martin to consider all dangerous entities when generating differential diagnoses. We asked him to purposefully broaden his differential if he noted that a diagnostic conclusion came to him quickly during patient encounters, and recommended that he deliberately practice using the review of systems and "head-to-toe" exam to ensure that he didn't miss any important organ systems.

We recommended that Paris and Jody review the anatomy, physiology, and pathophysiology of the cardiovascular and neurologic examination, respectively. We offered them a preceptor shadowing experience. We also enrolled them in our diagnostic skills course and asked them to deliberately practice what they learned during their subsequent clerkships.

Xavier took an online cardiac course created for students and residents to learn with visual and auditory cues about physiology and pathophysiology of the cardiac exam [22]. He was also asked to deliberately practice such an exam.

Step 4: *Reassessment*:
Must involve direct observation of student's performance with deliberate feedback after steps 1–3 above.
- Formal (standardized patient experience) or informal (at the clinic/bedside) direct observation of student performance
- Testing to verify improvement/mastery of skills. (See Chap. 6 for additional information on Clinical Reasoning deficits.)

Step 5: *Curricular questions*:
As previously mentioned, a students' expression of knowledge and skill reflects the education and training they receive. If multiple students are noted to have similar deficits, this may indicate a systematic deficiency in the curriculum and whether students need additional education and/or skill building in this arena. For example, several students independently claimed that their teaching of the cardiovascular exam omitted the pulmonary component. Perhaps confusion arises when these examinations are taught in separate contexts. Should this be further and more explicitly or even repeatedly taught? Should there be some methodological change in an area of the curriculum that focuses on system or chief complaint-driven examinations?

5.6 Conclusion

Remediation of PE skills is a complex enterprise. We have discussed four deficit domains, but most learners requiring remediation will demonstrate a combination of deficits, suggesting that remediation strategies must be individualized for best results. Though remediation can occur simply at the bedside using role modeling and impelling students toward deliberate practice, strategies increasingly include technological aids, for example, using simulation, multi-headed teaching or digitally enhanced stethoscopes, simultaneous cardiac echo, online games that reward accuracy, among others. Even You-Tube videos of examination skills can be useful teaching aids, though, ideally, there would be a catalog of "approved" ones that are most accurate and effective. Early identification, use of diverse remediation strategies targeted to learner needs, and confirmation of improving skill represent the core three steps to maximize learner proficiency in the physical examination.

Yet, significant logistical constraints in the remediation process remain to be addressed. Accumulating common themes of student PE errors can indicate a need to reassess or alter medical school curricula to ensure effective teaching of PE skills. Faculty clinicians with exemplary PE skills must have time and resources

available in order to perform assessments, remediate, and then reassess learners. Ultimately, with these approaches and close coaching, we believe that learners will attain the skills to be both excellent clinicians and capable teachers for future generations.

References

1. Life in the fastlane [Internet]. Australia: Frontier Group and GMEP; 2013. Sir William Osler memorable quotes [cited 5 July 2013] [about p. 8]. Available from http://lifeinthefastlane.com/resources/oslerisms/

2. Wilkerson L, Lee M. Assessing physical examination skills of senior medical students: knowing how versus knowing when. Acad Med. 2003;78(10 Suppl):S30–2. PubMed PMID: 14557088.

3. Herbers Jr JE, Noel GL, Cooper GS, Harvey J, Pangaro LN, Weaver MJ. How accurate are faculty evaluations of clinical competence? J Gen Intern Med. 1989;4(3):202–8. PubMed PMID: 2723833.

4. Kassebaum DG, Eaglen RH. Shortcomings in the evaluation of students' clinical skills and behaviors in medical school. Acad Med. 1999;74(7):842–9. PubMed PMID: 10429595.

5. Norcini JJ, Blank LL, Duffy FD, Fortna GS. The mini-CEX: a method for assessing clinical skills. Ann Intern Med. 2003;138(6):476–81. PubMed PMID: 12639081.

6. Harden RM. What is an OSCE? Med Teach. 1988;10(1):19–22. PubMed PMID: 3221760.

7. Barman A. Critiques on the Objective Structured Clinical Examination. Ann Acad Med Singapore. 2005;34(8):478–82. PubMed PMID: 16205824.

8. Frye AW, Richards BF, Philp EB, Philp JR. Is it worth it? A look at the costs and benefits of an OSCE for second-year medical students. Med Teach. 1989;11(3–4):291–3. PubMed PMID: 2518040.

9. Chang A, Chou CL, Teherani A, Hauer KE. Clinical skills-related learning goals of senior medical students after performance feedback. Med Educ. 2011;45(9):878–85. doi:10.1111/j.1365-2923.2011.04015.x.

10. Dornan T, Scherpbier A, Boshuizen H. Towards valid measures of self-directed clinical learning. Med Educ. 2003;37(11):983–91. PubMed PMID: 14629411.

11. Sargeant J, Eva KW, Armson H, Chesluk B, Dornan T, Holmboe E, Lockyer JM, Loney E, Mann KV, van der Vleuten CP. Features of assessment learners use to make informed self-assessments of clinical performance. Med Educ. 2011;45(6):636–47. doi:10.1111/j.1365-2923.2010.03888.x.

12. Saxena V, O'Sullivan PS, Teherani A, Irby DM, Hauer KE. Remediation techniques for student performance problems after a comprehensive clinical skills assessment. Acad Med. 2009;84(5):669–76. doi:10.1097/ACM.0b013e31819fa832.

13. Yudkowsky R, Otaki J, Bordage G, Lowenstein T, Riddle J, Nishigori H. Hypothesis-driven physical exam student handbook. Chicago, IL: Board of Trustees of the University of Illinois; 2008.

14. Nishigori H, Masuda K, Kikukawa M, Kawashima A, Yudkowsky R, Bordage G, Otaki J. A model teaching session for the hypothesis-driven physical examination. Med Teach. 2011;33(5):410–7. doi:10.3109/0142159X.2010.540269.

15. Yudkowsky R, Otaki J, Lowenstein T, Riddle J, Nishigori H, Bordage G. A hypothesis-driven physical examination learning and assessment procedure for medical students: initial validity evidence. Med Educ. 2009;43(8):729–40. doi:10.1111/j.1365-2923.2009.03379.x.

16. Clark RE, Vogel A. Transfer of training principles for instructional design. Educ Technol Res Dev. 1985;33(2):113–23. doi:10.1007/BF02769112.

17. Perkins DS, Salomon G. Transfer of learning. In: Husen T, Postlewaithe TN, editors. International Encyclopedia of Education. 2nd ed. Oxford, England: Pergamon Press; 1992 [cited 5 July 2013]. Available from http://learnweb.harvard.edu/alps/thinking/docs/traencyn.htm

18. Bickley LS, Szilagyi PG. Bates' guide to physical examination and history taking. 11th ed. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2013. p. 994.

19. DeGowin RL, Brown DD, LeBlond RF. DeGowin's diagnostic examination. 9th ed. New York: McGraw-Hill; 2009. p. 914.

20. Goldberg C. A practical guide to clinical medicine [Internet]. San Diego, CA: The Regents of the University of California. 1997–2009 [updated 16 Aug 2008; cited 5 July 2013]. Available from http://meded.ucsd.edu/clinicalmed/

21. Association of American Medical Colleges (AAMC). MedEdPORTAL [Internet]. Washington, DC: Association of American Medical Colleges; 1995–2013 [cited 5 July 2013]. Available from https://www.mededportal.org/

22. Criley JM, Keiner J, Boker JR, Criley SR, Warde CM. Innovative web-based multimedia curriculum improves cardiac examination competency of residents. J Hosp Med. 2008;3(2):124–33. doi:10.1002/jhm.287.

Assessing and Remediating Clinical Reasoning

Andrew Mutnick and Michael Barone

Abstract

Trainees must have excellent clinical reasoning skills to practice medicine safely and effectively. Even when a trainee has an impressive knowledge base, he or she can have difficulty applying that knowledge to patient problems. In this chapter, the authors discuss how the cognitive processes involved in decision-making apply in medicine. They propose a framework for how educators can teach and model decision-making to medical trainees based on the literature and their extensive experience with novice clinicians. They propose that learners should manifest progress of clinical reasoning in four ways: (1) an improved ability to develop and share a concise verbal or written problem representation; (2) an increasing and consistent use of semantic qualifiers; (3) the ability to state, seek, identify, and recall the defining and discriminating features of a patient's history and physical exam and link this to their knowledge base of "illness scripts" and (4) demonstrate an increasing metacognitive awareness which reduces cognitive biases in patient evaluations. They provide detailed descriptions of an array of strategies to address immature clinical reasoning.

6.1 Introduction

Physicians must have sound clinical reasoning that consistently leads to accurate diagnosis. Ensuring that trainees develop this complex skill

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is a foundational focus of medical education. Students begin by accumulating a medical science knowledge base, through a curriculum, which at most US medical schools is organized in organ- or system-based modules. However, patients present with symptoms and complaints, not organ- or system-based diseases. Clinical students must synthesize and interpret this problem-based information gathered from patients and learn to make a diagnosis. As medical educators we have a responsibility to our trainees and our patients to teach and assess clinical reasoning and be equipped with remediation strategies for use when the need arises.

The 1999 Institute of Medicine report *To Err is Human* estimated that up to 98,000 preventable deaths of hospitalized patients occur annually [1]. Initially, it was concluded that the majority of medical errors responsible for bad outcomes were the result of "faulty systems, processes, and conditions that lead people to make mistakes or fail to prevent them." Of late, diagnostic failure and misdiagnosis harm has been considered the next frontier of patient safety. Recent data have shown that 40,000–80,000 deaths related to misdiagnosis occur annually in the USA, and an estimated 5 % of autopsies demonstrate errors for which expedient diagnosis and treatment might have saved the patient. It is therefore imperative that diagnostic decision-making must be explicitly taught and modeled for physician trainees—in order to minimize these errors and enhance the safety of our patients [2].

In this chapter we will first selectively review research-informed conceptual models relevant to teaching, assessing, and remediating clinical decision-making. These will touch on the predominant human cognitive process related to reasoning and problem solving, how medical knowledge is organized, and common cognitive dispositions to respond (CDR's) which can trip up even the most experienced clinicians. Then we will propose criteria to assess normal development of clinical reasoning, describe two of the most common ways novices tend to struggle and share road-tested strategies to work with these learners to get them back on course.

6.2 How Humans Think: Dual Process Theory

There has been much interest in human information processing and decision-making. While clearly complex, decades of cognitive psychology research have given us some models, theories, and basic principles to guide us in teaching and assessing the reasoning of our trainees [3].

To start off, this work has demonstrated two distinct systems involved in decision-making—the fast, unconscious, highly efficient, yet error prone System 1 and the slow, effortful, analytical, less efficient, yet more reliable System 2.

To understand how this works, consider the following problem and work to solve it as fast as you can:
A bat and ball together cost $1.10.
The bat costs $1.00 more than the ball.
How much does the ball cost? [4]

Chances are at least half of you answered 10 cents. At first glance, the answer 10 cents certainly makes intuitive sense, however, on closer inspection the math just doesn't add up. If the ball cost 10 cents and the bat was $1 more, then it alone would cost $1.10 and together the items would cost $1.20. In order to satisfy the stipulations of the question, the ball must cost 5 cents. The bat would then cost $1.05 and together they cost $1.10. Kahnemann and Frederick delivered this question and two others as part of a Cognitive Reflection Test (CRT) to thousands of subjects—many of whom were students at elite US universities. Fewer than 50 % of those subjects answered the questions correctly. Why? Because System 1 operates quickly and unconsciously, relies on patterns or shortcuts—and is often wrong.

Now, consider and solve the following problem:

$$17 \times 24 =$$

Likely, for this problem you set down to crunch some numbers. Perhaps you began with a rough estimate—less than 1,000 but more than 250—and then settled into some mental effort to arrive at the answer, 408. This process illustrates the work of System 2, which allocates attention to effortful mental activities—such as calculations. System 2 processes can be painstaking and time-consuming, but it's a highly reliable system and less error-prone than its counterpart System 1. An awareness of these two systems and their interplay is helpful when discussing cognitive models of clinical reasoning.

The dual-process theory blends hypothetico-deductive strategies (described below) and intuitive reasoning and implies that both systems are jointly involved in clinical reasoning at all levels of expertise. Valences shift toward one approach or the other based on a number of factors that relate to the particular problem encountered. Intuitive, or System 1, processes prevail when time is constrained and problems are routine,

certain, and easily recognized. Analytic, or System 2, processes dominate when time permits, stakes are high, and problems are complex or unfamiliar. There is some evidence to show that novices primed to employ both System 1 and System 2 in their diagnostic decision-making may achieve the greatest diagnostic accuracy [5].

6.3 Models of Clinical Diagnostic Reasoning

The past 35 years has seen an evolution in the understanding of clinical reasoning and the way doctors think [6]. Elstein, Shulman, and Sprafka's original work through the Medical Inquiry Project described a hypothetico-deductive or analytic process of clinical reasoning [7]. This method relies upon cycles of data acquisition and the development and testing of hypotheses. The accuracy and quality of this reasoning process is dependent on the amount and organization of prior knowledge and highly influenced by the experience of the clinician or trainee as well as the context in which

the patient is being seen. Bowen has lucidly mapped out this process [8] (Fig. 6.1).

In order to illustrate Bowen's model of the clinical diagnostic reasoning process, consider the following case:

A 15-month-old male presents during the winter, with a 3-day history of low-grade fever and runny nose. He has now developed a cough and trouble breathing. His mother states that over the past day, he has had episodes of fast breathing, and she notices his belly moving more than usual. He has had one episode of vomiting after a coughing attack and no diarrhea. His immunizations are up to date. He has a 3-year-old sibling who is in daycare. There is no rash. There has been no travel or new exposures.

On PE, temperature was 100°F and RR 40/min. Heart rate and BP are within normal range. Oxygen saturation is 91 % on room air. The toddler is quiet in his mother's arms. There are intercostal retractions. HEENT exam is normal. The heart rhythm is normal, and there are no murmurs. There is good air exchange and wheezing with occasional crackles on lung exam.
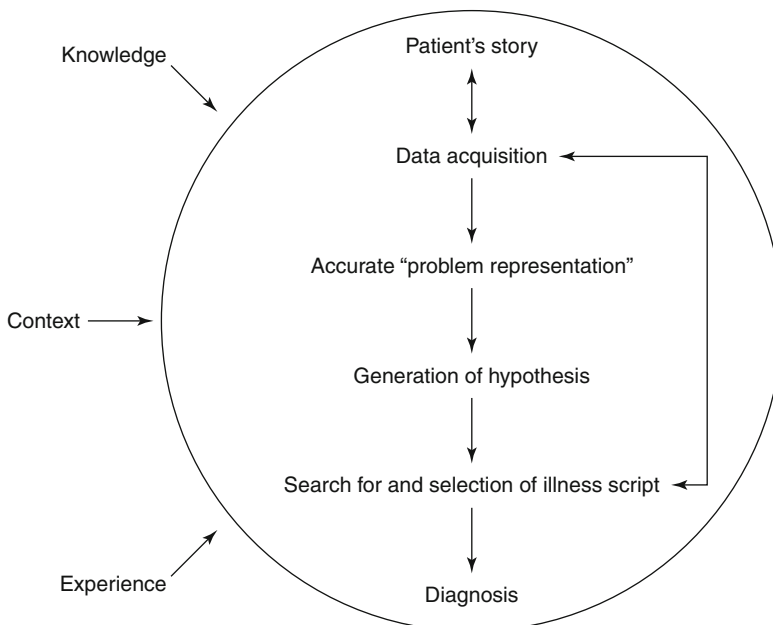
Fig. 6.1 Key elements of the clinical diagnostic reasoning process. Reproduced with permission from N Engl J Med, Bowen JL, Educational strategies to promote clinical diagnostic reasoning, 335(21):2217–2225. Copyright © 2006 Massachusetts Medical Society. Reprinted with permission from Massachusetts Medical Society

The abdomen is soft and non-tender. Tone is normal, and there are no focal neurologic findings.

As the patient's story unfolds, first through the chief complaint and subsequently through history and physical, a clinician forms impressions. The challenge for all clinicians, from novices to experts, is to synthesize the gathered data into a cohesive and accurate abstraction of the case that represents the overall clinical picture. This is referred to as the "problem representation." *Problem representations are summaries or "bullets" that encapsulate and succinctly organize the information about the patient's presentation and guide clinical reasoning in the development of diagnostic possibilities.*

Problem representations for the above case might take myriad forms. The novice may have difficulty in making editorial choices around key elements of the history and physical and not appreciate pertinent positive and negatives associated with the case. What might follow is an overlong problem representation that will merely rehash the history and physical. More experienced trainees will begin to separate wheat from chaff and hone in on elements that will suggest specific disease entities.

An accurate problem representation of this case scenario is as follows:

> "A **toddler** with **acute onset** of **moderate** respiratory distress and **low**-**grade** fever with **diffuse lower** respiratory findings on chest exam"

Key for the development of an accurate abstraction of the case is the judicious use of semantic qualifiers or axes. Semantic qualifiers are "paired, opposing descriptors that can be used to compare and contrast diagnostic considerations" [8] (Table 6.1). In this case, "3-day history" became "acute-onset" the respiratory parameters were transformed to "moderate respiratory distress" and the chest exam findings of "good air exchange and wheezing with occasional crackles" became "diffuse lower respiratory findings."

In this way, the problem representation can ignite clinical memory and activate a search for stored experiential or book knowledge in the

Table 6.1

Semantic qualifiers	
Acute	Chronic
Sudden	Gradual
Delayed	Abrupt
Progressive	Waning
Constant	Intermittent
Unilateral	Bilateral
Painful	Painless
Mild	Severe

form of illness scripts [9, 10]. Illness scripts are mental representations comprised of the following three key elements of a medical condition—first, the enabling conditions or predisposing, epidemiologic features; second, the fault or the relevant pathophysiologic process; and third, the consequences of the fault or the clinical features and sequelae.

The broad features of this case scenario might activate the particular illness scripts of bronchiolitis, croup, and foreign body—all conditions being associated with toddlers in respiratory distress. Clinicians then test this array of diagnostic considerations based on defining or discriminating features (Fig. 6.2). While bronchiolitis, croup, and foreign body aspiration might all produce respiratory distress (defining features), of these three diagnostic possibilities, only bronchiolitis produces respiratory distress with diffuse lower respiratory findings on auscultation (discriminating features).

This clinical reasoning model is an analytic or hypothetico-deductive process. It might also be described as a largely System 2 operation.

In addition to this analytic model of clinical reasoning, there are alternate cognitive functions in play that are non-analytic, rapid, and intuitive.

Consider the following case:

A 50-year-old man presents after the eruption of a rash on his chest. The appearance of the rash was preceded by 2–3 days of burning and tingling over the affected area. There has been no fever or associated systemic signs and no new exposures. His exam is notable for an erythematous, vesicular rash in a horizontal, band-like
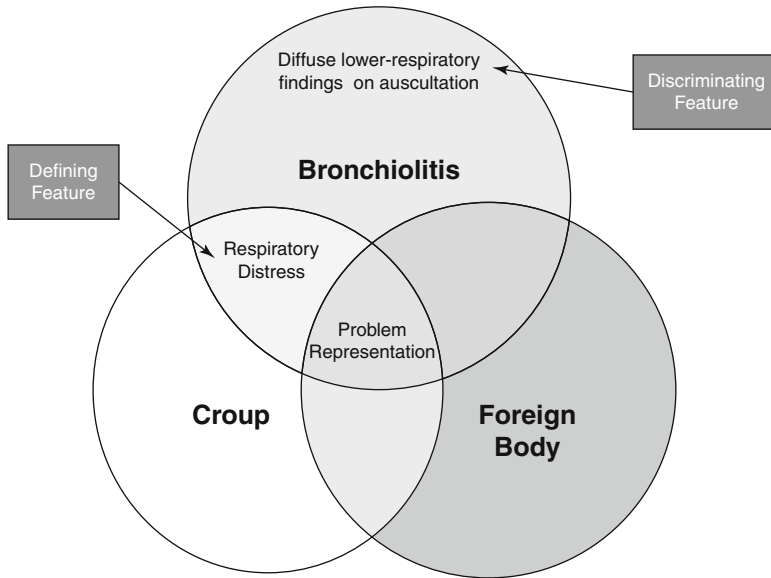
Fig. 6.2 The problem representation allows identification of three illness scripts that fit the defining features of this toddler with respiratory distress case. Diffuse lower respiratory findings on auscultation is the key discriminating feature, which allows a diagnosis of bronchiolitis

distribution across his left torso over an area that corresponds to the T6 dermatome.

For many physicians, this pattern is immediately recognized and a diagnosis of shingles is rapidly made. The need to consciously develop a problem representation or analyze the case in an iterative process is bypassed and minimal conscious effort is expended. This is a typical System 1 process—rapid, unconscious, efficient, and accurate. Undoubtedly, the ability to recognize this pattern relies on prior experience with similar cases. One might conclude that novices do not have access or rights to this cognitive domain and are bound to the hypothetico-deductive model. Actually, it has been shown that both novices and experts use non-analytic processes to solve clinical problems. In fact, both groups toggle between analytic and non-analytic approaches and, as Eva states, "…the strategy employed by even the most junior medical students is qualitatively indistinguishable from that employed by experienced doctors—both groups generate hypotheses very quickly, presumably based in part on non-analytic reference to past experiences" [11]. The difference between novice and expert, beyond the amount of knowledge and experience, is in the extent to which their knowledge is organized into detailed and accurate illness scripts.

6.4 Knowledge Organization and Clinical Reasoning

Bordage [12] described four types of knowledge organization in physicians and trainees— *reduced*, *dispersed*, *elaborated*, *and compiled*, each with its own characteristics and impact on making an accurate diagnosis. For practical reasons, the four levels of organization may be considered as stages of development within a content domain. Learners with:

- *Reduced* knowledge have either very limited or inaccessible illness scripts. They are often unable to translate relevant information from a

patient's presentation into meaningful diagnostic categories.

- *Learners with dispersed* knowledge possess more abundant illness scripts, but these still tend to be formulaic or static and thus remain difficult to adapt to the dynamic, multisystem presentations of patient care.
- *Elaborated* knowledge features improved use of structural semantics and use these relationships to hypothesis test against various diagnoses in their existing, more robust knowledge bases.
- *Compiled* learners, often considered expert clinicians, are able to quickly sift through clinical data based on their diversified set of semantics and deep knowledge base. These clinicians often demonstrate rapid pattern recognition and the unique ability to seek *missing* elements in the case.

Physicians with expert clinical reasoning and compiled knowledge should expend effort with novice learners to discuss how they think through a case - i.e. toggling between System 1 and System 2 - thereby demonstrating both the necessary knowledge and the cognitive connections one needs to become an accurate diagnostician.

It is important to remember that expertise in this domain is influenced more by prior knowledge and clinical experience in the specific domain than by training level. For example, a medical student who has had extensive experience with respiratory illnesses in children may demonstrate compiled knowledge and the ability to reason non-analytically and intuitively with accuracy in this domain but not in others. Critical thinking is the distinguishing characteristic of clinicians who are expert in clinical reasoning across content domains. Such individuals have a habit of being aware of their own thinking and therefore avoid common, dangerous cognitive biases.

6.5 Metacognition and Cognitive Bias

"Awareness of [cognitive psychology] might accomplish three things. First, it might broaden the list of pitfalls that a clinician can anticipate and

possibly avoid. Second, it can provide a language and logic for understanding repeated mistakes. Third, it may encourage greater circumspection in daily practice…"

—Redelmeier et al. [13]

With an understanding of our own thinking, students, residents, and fellows might better invoke and utilize analytic processes (System 2) appropriately, while confidently employing intuitive routes (System 1) in the proper context. Elder and Paul [14] define critical thinking as "the ability and disposition to improve one's thinking by systematically subjecting it to intellectual self-assessment." Their theory describes elements of excellent reasoning and intellectual standards and traits that characterize the "well cultivated critical thinker." Croskerry states, "The various approaches that have been taken toward decision-making have two implicit purposes: first, to explain the ways in which we think and, second, to generate a practical approach to decision-making that has important clinical utilization" [15]. This deliberate, heightened awareness of the processes and systems that govern our reasoning is referred to as *metacognition*. Quirk describes this as "thinking about one's own and another's thinking and feeling" [16] (see also Chaps. 13 and 14). Although limited evidence exists, there remains hope that metacognition might act as a powerful forcing strategy to help students and physicians slow down their thinking when necessary and avoid making diagnostic errors that result from biases and fallacies typically produced from System 1 processes. These cognitive biases have been collectively termed cognitive dispositions to respond (CDRs). Although Croskerry has compiled and described over 30 CDRs, a select few common cognitive biases deserve mention [17].

Premature closure: the tendency to accept a diagnosis before it has been fully verified. The consequences of the bias are reflected in the maxim: "When the diagnosis is made, the thinking stops."

Anchoring: this is the tendency to lock onto salient features in the patient's initial presentation too early in the diagnostic process and failing to adjust this initial impression in the light of

later information. This CDR may be severely compounded by the *confirmation bias*.

Confirmation bias: the tendency to look for confirming evidence to support a diagnosis rather than look for disconfirming evidence to refute it, despite the latter often being more persuasive and definitive.

Availability: the disposition to judge things as being more likely, or frequently occurring, if they readily come to mind. Thus, recent experience with a disease may inflate the likelihood of its being diagnosed. Conversely, if a disease has not been seen for a long time (is less available), it may be underdiagnosed.

Diagnosis momentum: once diagnostic labels are attached to patients they tend to become stickier and stickier. Through intermediaries (patients, paramedics, nurses, physicians), what might have started as a possibility gathers increasing momentum until it becomes definite, and all other possibilities are excluded.

6.6 The Development of Clinical Reasoning Competency

How do you know if your students are moving through the appropriate stages on their way to becoming efficient and accurate diagnostic thinkers? Although medical educators have not embraced a single predominant model for assessing clinical reasoning, we propose that trainees should demonstrate progressive mastery in:

- Developing and sharing a concise verbal or written problem representation of the patient case which communicates their assessment of the problem.
- Consistently using semantic qualifiers in their problem representations (see Table 6.1).
- Seeking, identifying, and recalling the defining and discriminating features ("pertinent positives and negatives") of a patient's history and physical exam and linking this to appropriate illness scripts.

- Demonstrating an explicit metacognitive approach to patient evaluations with fewer examples of bias (availability, anchoring).

6.7 Strategies for Assessing Clinical Reasoning

Many studies of how health professionals think employ a technique known as "think aloud" [18], wherein subjects speak about how they are thinking about a case or a clinical problem. This is the best available strategy in the day-to-day activities of teaching in a clinical setting to assess how our medical learners are thinking about and solving clinical problems. In the next section we list some examples of these opportunities.

6.7.1 Direct Observation of Clinical Skills

You can observe a lot just by watching

—Yogi Berra

While it may be resource- and time-intensive, direct observation of trainees in the clinical setting is invaluable. Doing so allows for insight into the learner's ability to actively generate hypotheses and ask appropriate follow-up questions as well as their ability to consider, search for, and elicit relevant findings on the physical exam. Some of the more common frameworks for direct observation include:

1. *The Structured Clinical Observations* (*SCOs*) described by Lane and Gottlieb [19] highlights three major domains of the encounter: history taking, physical examination, and information giving. SCOs can be tailored to unique assessment needs [20] and have been shown to be useful for learner self-evaluation [21].
2. *The Mini-Clinical Examination* (*Mini-CEX*) instrument has been broadly applied to inpatient and outpatient in-training assessments (ITAs) (see also Chap. 19) and has been widely adopted in clerkships and residency training programs. A single faculty or resident observer

typically completes the instrument, which is a single nine-point Likert scale for each of seven domains: Medical Interviewing Skills, Physical Examination Skills, Humanistic Qualities/Professionalism, Clinical Judgment, Counseling Skills, Organization/Efficiency, Overall Clinical Competency. The total time invested for the observation is approximately 20 min, and the tool is intended for the direct observation of a focused history and physical examination. Of all the direct observation tools, the mini-CEX has been shown to have the strongest inter-rater reliability and validity [22–26].

3. *The Brief Structured Clinical Observation* (*BSCO*) [27] can be useful in very busy clinics in which one preceptor is working with multiple learners. The preceptor focuses on a segment or a portion of the patient history in any one episode. Ideally in a longitudinal preceptor–student relationship, there are a number of BSCOs of a single learner performing multiple parts of the history (HPI, family history, sexual history, etc.) so that feedback can be given on each skill and summarized into a comprehensive evaluation at the end of a rotation. There are four phases of the BSCO as follows:

    • *Observe and record*—the observer writes down the learner's history gathering questions verbatim categorizing them as open-ended and leading or closed-ended questions.

    • *Debrief the learner*—the preceptor asks the learner "What did you find out with that question?" and "What else might be important?"

    • *Review the script*—the preceptor and the learner discuss what questions led to useful information and what additional questions might be needed.

    • *Conclude*—the preceptor points out 1–2 strengths and 1–2 things to improve upon. The BSCO can also be adapted to the specific aspects of the physical exam.

4. *Oral case presentations*: The prepared preceptor can use the clinical setting to assess and coach student clinical reasoning by listening to presentations and exploring the student's ability to gather relevant data and synthesize information in the form of a problem representation which then leads to a differential diagnosis. Novices may struggle with determining what information is diagnostically salient. After they state their patient assessment, ask them to "repeat it, but this time a little shorter." Coaching them to use more semantic qualifiers and identify pertinent defining and discriminating features ("pertinent positives and negatives"). Doing this once or twice allows them to efficiently flex their "salience determination" muscles.

6.7.2 The One Minute Preceptor

The One-Minute Preceptor, or the 5 microskills model, is widely used because it is adaptable to many clinical teaching settings [28]. In precepting the learner, the faculty member structures the session by doing the following:

1. Asks for a commitment from the learner regarding the patient's likely diagnoses
2. Probes the learners' thinking about "supporting evidence" for their decision
3. Teaches general rules about the patient/topic
4. Reinforces with the learner's reasoning strengths
5. Corrects any errors in knowledge and reasoning

6.7.3 Small Group Case Presentations

Small group case presentations such as teaching rounds, morning report, or didactic attending rounds allow for multiple pauses to discuss reasoning as a clinical case unfolds. Facilitators can probe the thinking of a number of learners of varying levels, from students to seasoned residents. Allowing for peer-to-peer facilitation in these settings can also lend insight into the teaching and reasoning skills of trainees.

6.7.4 Reading and Giving Feedback on Patient Notes in the Setting of Clinical Care

Many medical educators are concerned about the potential negative impact of electronic medical records on learners' clinical reasoning. This is due to the tendency to "copy forward" information and, as a result, not slow down and "think the case through" (a metacognitive strategy) [29]. Health profession students should be challenged to "force" themselves to generate updated problem representations on a daily basis. In this way—"A toddler with acute-onset of moderate respiratory distress and low-grade fever with diffuse lower respiratory findings on chest exam" might ultimately give way to, "a toddler with acute bronchiolitis." By reading progress notes with sensitivity to this type of progression in thinking, faculty members can assess a learner's clinical reasoning and give feedback aimed at developing the trainee's critical thinking.

6.7.5 Computer Cases with Diagnostic Frameworks

Instructional cases such as those available in Med U (http://www.med-u.org/) require that students list potential diagnoses and rank them in degree of likelihood.

6.7.6 Comprehensive Clinical Skills Exams

In June 2012, the USMLE Step II CS examination adopted modifications to the patient note, which require examinees to create a reasoned, focused differential, listed in order of likelihood, and supported with data from the history and physical examination. This extends the SOAP (Subjective, Objective, Assessment, Plan) note format, which only reflected the student's data gathering and initial diagnostic reasoning. Many medical schools have adopted a similar framework for their internal comprehensive clinical skills examinations or observed structured clinical examinations (OSCE). This framework explicitly asks students to share their illness scripts and therefore can serve as a measure of a student's clinical reasoning skills.

6.8 Remediation of Common Clinical Reasoning Problems

According to the literature and our extensive experience with medical students and residents the two most common clinical reasoning problems are [30]

1. Inadequate *problem representation*
2. Ineffective development or storage of *illness scripts*

These deficiencies may manifest individually or together, and both can contribute to trouble in developing a differential diagnosis. Of course, weak foundational knowledge ("reduced") is common among trainees; however, we caution clinical teachers against simply advising the trainee to "read more" (see Chap. 3) without also providing them with support in organizing their knowledge into useful illness scripts as part of active clinical reasoning practice. What follows are detailed descriptions of strategies we have found useful and effective (Fig. 6.3).

6.8.1 Difficulty with Problem Representation

6.8.1.1 Major Symptoms
Students who experience difficulty developing a problem representation may limit or completely eliminate their *assessment*—or commitment to what they believe the differential diagnosis is—from a case presentation. This results in what some refer to as SOP (Subjective, Objective, Plan) or SOSOP (Subjective, Objective, Subjective, Objective, Plan) presentations [31]. For instance:

SOP: *"This is a 15-month-old male with a 3-day history of low-grade fever, runny nose, cough and trouble breathing. There is good air*

| Major Symptoms | Primary Problem | Remediation Strategy |

Problem generation an assessment		Reverse presentation
	Inadequate problem representation/patient abstraction	Buy a qualifier
Problem developing a differential diagnosis		Precepting models
	Ineffective development or storage of illness scripts	Highlighting exercise; Persuade the MD
Problem gathering and reporting relevant data		Read about symptoms; Script sorting

Fig. 6.3 A strategy to understand and address the most common clinical reasoning problems of medical students

exchange and wheezing with occasional crackles on lung exam. I would like to get a CXR and give a trial of a bronchodilator."

SOSOP: *"This is a 15-month-old male with a 3-day history of low-grade fever, runny nose, cough and trouble breathing. On lung exam there is good air exchange and wheezing with occasional crackles. So my assessment is a 15-month-old male with a 3-day history of low-grade fever, runny nose, cough and trouble breathing whose exam reveals wheezing with occasional crackles. I would like to get a CXR and give a trial of a bronchodilator."*

Since an accurate problem representation serves as a launching off point for creating a relevant differential diagnosis, even students with well-developed knowledge compiled as illness scripts may struggle with developing a differential diagnosis if they cannot first articulate an accurate case summary. As a result, these students may give a "silo-ed" differential (a separate set of diagnoses for related symptoms), or a poorly prioritized differential diagnosis.

Silo DDx: *"This is a 15-month-old male who presents with a 3-day history of fever, rhinorrhea, cough and trouble breathing with respiratory distress and crackles on pulmonary exam. The differential diagnosis of fever includes viral infections, bacterial infections, connective tissue diseases and drug fever. The differential diagnosis of cough includes foreign body, tracheomalacia, etc."*

For the case above, a student with a poorly prioritized differential diagnosis might mention aspiration pneumonia (e.g., very unlikely in this scenario) at the top of his or her list of diagnostic possibilities.

6.8.1.2 Remediation and Practice Strategies

Strategies that help a student who is knowledgeable enough with the expected breadth and sophistication in his or her illness scripts but cannot develop a problem representation include (1) reverse presentations, (2) practicing the use of semantic qualifiers ("Buy a qualifier game"), and

(3) analyzing students' presentations using SNAPPS [32] or IDEA [33] precepting models.

1. *Reverse presentation* (*ASOAP*): Ask the learner to start the patient presentation with their assessment. The preceptor then carefully listens to determine if the proper positive and negative supporting data are reported which make the assessment credible. As an example, the student would start with the following assessment:

> *"This is a 15 month old male with bronchiolitis versus viral pneumonia and hypoxia. I believe he should be admitted to the hospital for supportive care with oxygen and IV fluids."*

The preceptor then listens carefully and coaches the student to include in the presentation elements that support the diagnosis and management plan.

2. *Practice with semantic qualifier* ("*Buy a qualifier*"): When the student presents the case like this:

> *"15 month-old male with a 3-day history of low-grade fever, runny nose, cough and trouble breathing. On exam there is good air exchange and wheezing with occasional crackles on lung exam"*

The preceptor should display a list of useful semantic qualifiers (see Table 6.1) and ask the student to "buy two." The student then, with playful coaching, gets a chance to analyze their assessment and rework it, hopefully toward a presentation that sounds more like this:

> *"A 15 month-old with* acute *onset of moderate respiratory distress and low-grade fever with* diffuse *lower respiratory findings on chest exam."*

3. *Precepting models*: Formal student presentations in the clinical setting can limit the opportunity to judge a student's reasoning. There are a number of precepting models, which focus on a student's reasoning. Such models as the One Minute Preceptor described above [27] are faculty-driven, with faculty providing the questions which prompt reasoning ("What do you think is going on with this patient? Why?"). Other models, such as SNAPPS and IDEA, are learner-driven and are useful for oral presentations and patient notes. Many video demonstrations of these models exist on the Internet.

SNAPPS: This model is structured explicitly to force the learner to articulate their clinical reasoning process. Originally described as a model for ambulatory teaching, the SNAPPS model is also easily adaptable to inpatient teaching—especially when rounds are hurried and need to be focused! The learner is provided with this six-step framework for the case presentation:

> *S*—Summarize briefly the history and physical
> *N*—Narrow the differential to 2 or 3 relevant possibilities
> *A*—Analyze the differential by comparing and contrasting the possibilities
> *P*—Probe the preceptor by asking questions regarding uncertainties
> *P*—Plan management for the patient
> *S*—Select an issue for self-directed study

The SNAPPS model has been shown to facilitate development of students' diagnostic reasoning in the ambulatory setting [31].

Let's listen to what a dialogue might sound like between a preceptor and a learner using the SNAPPS format:

Preceptor to John, medical student:
"Thanks for going to see that 15 month with respiratory issues John. Remember at the start of the clinic session, we discussed the SNAPPS framework. I'd like you to try to present the patient to me using SNAPPS. John: "OK, I will give it a try."
(S) I just finished seeing a 15 month-old male named Kevin. He was brought in by his father due to a 3-day history of low-grade fever, runny nose, and cough. He also developed some trouble breathing this morning described by his dad as fast breathing rate, using extra muscles to breathe and making some noises with breathing. There is no history of foreign body ingestion or aspiration. He's had sick contacts in daycare. He's fully vaccinated and he's had no recent travel out of the country or exposure to people with chronic cough. The rest of his systems review is negative for GI symptoms such as vomiting or diarrhea, as well as for rash, or growth problems. His father says that Kevin's primary care physician doesn't have any ongoing health concerns about Kevin. Kevin takes no medications. On exam he's a happy appearing child in mild to moderate respiratory distress as demonstrated by his respiratory rate of 45. He's using some accessory muscles to breathe and demonstrates suprasternal retractions and some nasal flaring. He has a prolonged expiratory phase. On his lung exam, there is good air exchange and I hear wheezing with occasional crackles in his bilateral mid to lower lung fields.

(continued)

(N): I think this child most likely has bronchiolitis, asthma or perhaps bacterial pneumonia.
(A): The reason I think he has bronchiolitis is that he is in the right age group (less than age 2), he has sick contacts in daycare who are probably sharing the same viral infection, and he has a bilaterally symmetric exam with wheezing. He also has other signs of a viral infection such as rhinorrhea. I thought about asthma, but there is no family history of asthma and the father says the child has never been sick like this before. I guess it could be the child's first asthma exacerbation, triggered by a viral infection, but I think this is less likely—especially given how common bronchiolitis is. Lastly, I thought about bacterial pneumonia based on the crackles on exam and the fact that he developed respiratory distress 3 days into a viral upper respiratory infection, suggesting maybe bacterial superinfection. But Kevin is not that ill appearing and his exam demonstrates bilateral crackles with wheezing which would be less common in bacterial pneumonia.
(P) I also thought about atypical organism infection—such as Mycoplasma, but I don't know how those present in children or even if they are pathogens in this age group. Can you tell me about that? Come to think of it, I also can't recall the most common viral causes of bronchiolitis.
(P) I would like to get a chest X ray given that it's Kevin's first episode of respiratory distress and also because there is an outside consideration of bacterial pneumonia. I would also like to give a bronchodilator and perhaps send some viral studies.
(S) Before sending any tests, I am going to quickly find out which viruses we might test for and how long it takes for the results to return, in order to see if any testing at all would be useful.

IDEA: The IDEA framework was developed to enable a clinical teacher's assessment of a student's clinical reasoning based on the written note. Students are encouraged to organize the assessment section of their write-up using the following anchor points:

I: Interpretive summary—a summary of the patient with the use of semantic qualifiers

D: Differential diagnosis with commitment to the most likely diagnosis

E: Explanation of reasoning for selecting the most likely diagnosis

A: Alternative diagnoses with an explanation of reasoning

> *An example of a written patient assessment in IDEA format might look like the following:*
>
> *(I): This is a 15 month-old with acute onset fever and upper respiratory symptoms, progressing to moderate respiratory distress, accompanied by diffuse lower respiratory findings on chest exam."*
>
> *(D): Diagnostic possibilities include (in descending likelihood) bronchiolitis, asthma, bacterial pneumonia.*
>
> *(E): Bronchiolitis seems most likely given the child's age, sick contacts in daycare and his bilaterally symmetric exam with wheezing. Asthma is a possibility but less likely due to no family history of asthma and no previous episodes. Lastly, there is a small consideration for bacterial pneumonia given the crackles on his exam and the progression of his illness.*
>
> *(A): Other less likely diagnoses would include aspiration pneumonia, foreign body aspiration, cystic fibrosis but there are no specific factors of the history or physical which support these strongly.*

The strategies listed above provide a remediation coach with the data needed to assess whether the struggling student has made progress. All remediation activities should be documented (see Chap. 20).

6.8.2   Problem with "Illness Scripts" (See Fig. 6.3)

As mentioned earlier in this chapter, the problem representation step allows for ignition of clinical memory that in turn leads to a search for stored illness scripts. Students with limitations in the quantity or organization of their illness scripts may be able to gather some data, but it will not typically have the proper attention to those key features that can help to generate, confirm, or refute hypotheses. As a result, these students may also struggle to generate a differential diagnosis.

6.8.2.1   Major Symptoms

Students with illness script problems miss relevant data on the history or examination due to their inability to test diagnostic hypotheses in real time, a process known as co-selection. Students may also focus unnecessarily on items of little relevance, or gather and report back information in their "comfort zone," for example, the social history, even if this is not particularly relevant. This has been described as the "unfiltered data dump" [30].

In addition to data gathering problems, students with deficient illness scripts may also have challenges creating differential diagnoses. Some differential diagnoses may be frankly inaccurate or can have other characteristics, often referred to as "frozen" or "zebra" differentials.

- *Frozen differential diagnosis* ignores relevant data, in this case a normal chest X ray: "This is a 15-month-old male who presents with a 3-day history of fever, rhinorrhea, cough and trouble breathing with respiratory distress and crackles on pulmonary exam. The differential diagnosis includes viral upper respiratory tract infection, viral or bacterial lower respiratory tract infection, foreign body aspiration and gastroesophageal reflux with aspiration. His CXR is negative. Given the fever and respiratory distress, I think the child most likely has bacterial pneumonia."

- *Zebra differential diagnosis* includes highly unlikely or rare diagnoses "This is a 15-month-old male who presents with a 3-day history of fever, rhinorrhea, cough and trouble breathing with respiratory distress and crackles on

Toddler with a Limp				
	Transient Hip Synovitis	Septic Arthritis	Reactive Arthritis	"Can't miss" Leukemia
Epidemiology				
Pathophysiology				
Clinical Presentation – History				
Clinical Presentation – Physical Exam				
Useful Diagnostic Tests				
Management				

Fig. 6.4 Horizontal reading exercise - The student is encouraged to do outside reading (asynchronous learning) and populate category boxes with 2–3 bullet points of relevant clinical information

pulmonary exam. The differential diagnosis includes viral upper respiratory tract infection, atypical infection such as Legionella or gram negative pneumonia."

6.8.2.2 Remediation and Practice Strategies

Strategies to remediate problems with illness scripts generally fall into two categories. The first can be considered "asynchronous," in that the learner can, with guidance from the teacher, work on remediation on his or her own time. *Asynchronous* techniques focus on building knowledge and interconnecting illness scripts. The other, *synchronous* or just-in-time strategies, involves teachers more actively as a coach and facilitator. Which strategies are used depends on time and other resources. In a busy clinical setting, it may not be practical to spend an additional 10 min per patient probing and remediating the reasoning around every case. In those cases, identifying the learning needs and giving the student an assignment to be reported on at a later time can be a more efficient strategy.

Asynchronous Strategies

Horizontal reading allows a student to transform a knowledge base that is organized in organ systems into one that applies more readily to patients' presenting symptoms. With a symptom as a starting point, for example, a toddler presenting with a limp, a student is asked to read about features of specific, common, and "can't miss" diagnoses. Such an exercise will promote the development of illness scripts with defining and discriminating features as well as encourage a more purposeful retrieval of their knowledge base. Figure 6.4 illustrates a typical grid for horizontal reading. This can be given to a student as a nightly assignment.

Script sorting: This technique is also based on the concept of discriminating and defining features as shown in Fig. 6.5. This process can allow students to compare and contrast certain signs and symptoms across a differential diagnosis, ascribing positive value to those signs or symptoms that speak strongly for a diagnosis and negative values to those that speak against a diagnosis. The end result demonstrates a representation of the relative likelihoods of various diagnoses given certain diagnostic features. A typical grid, again using the example of a toddler with limp, may look like the following, with (++) speaking strongly for the diagnosis, (+) speaking for diagnosis, (0) neutral, (−) speaking against diagnosis, and (− −) speaking strongly against.

	Abrupt Onset	Prior URI	Severe Pain	Normal CBC	Total
Transient Hip Synovitis	0	+	−	++	++
Septic Arthritis	++	0	++	−	+++
Reactive Arthritis	0	0	+	0	+
Leukemia	− −	−	+	− −	− − − −

Fig. 6.5 Script sorting exercise

A 16 yo male with no significant PMH who presents with chronic abdominal pain and reports of intermittent bloody diarrhea. Approximately 1.5 months ago, the patient started having waxing and waning sharp, generalized abdominal pain, which has been worsening over the past week. He states that the pain is constant and is worse in the RUQ. He has also had intermittent diarrhea with three episodes of large green grossly bloody stools in the past 2 days. Initially the patient had a few episodes of NBNB vomiting but then developed relative anorexia. His mother reports that the young man used to eat well but now barely eats one meal per day. He has been tolerating fluids well. No fevers. The patient reports that he has lost 10 pounds over the past month. He has also been fatigued. He has tried over the counter antacids without relief. He presented to an emergency department 4 days prior to this presentation due to the pain. At that visit, labs including a basic metabolic panel and complete blood count were normal. He was sent home on pain medication, which he reports, is not helping his pain. The patient has missed several days of school secondary to pain.

Fig. 6.6 Example of highlighter exercise

Synchronous/Just in Time Strategies

Diagnostic reframe: When students first learn the concept of differential diagnosis, mnemonics are often taught (e.g., VINDICATE), which prime the student to consider *all* known possible causes for particular patient's presentation. While this can be a useful exercise, many of the items are often disembodied from the case at hand. It is more effective to challenge students to first generate a relevant list of diagnoses based on the presenting complaint, and then revisit the comprehensive VINDICATE list. In revisiting the comprehensive list, students should be encouraged to focus on committing only to what they can justify are the most likely diagnoses and indicate which diagnoses may be rare or "can't miss." In this way the teacher coaches the student to reason through the initial list generated by the mnemonic.

Highlighter exercise: This highly effective strategy, as described by Stuart et al. [31] can be used with single or multiple learners. Starting with a written case presentation (a note from the electronic health record, case report from journal, etc.), learners are asked to highlight relevant information in the history they feel will help them discriminate among diagnostic possibilities. In general, when this is done with multiple levels of learners, the more novice learners highlight a great deal while the more expert clinicians highlight only a few high-yield items. Comparing and contrasting different results can lead to effective peer-to-peer teaching. Teaching faculty can debrief with one or many learners and discuss the clinical relevance of certain history and physical examination findings (for example, see Fig. 6.6).

Persuade the MD: This role-play scenario has the learner assume the role of a patient. The learner's challenge is to, in limited time, convince the preceptor that the "patient" has a certain diagnosis by giving a highly relevant medical history. For example, the preceptor might say to the student, "Let's assume you have a chronic cough: convince me in 30 seconds or less that you have tuberculosis." The novice learner, in playing the role of patient, may begin to wander in the presentation, talking about a long-lasting cough while forgetting to include defining features. The more seasoned learner would immediately use semantics such as progressive cough with fever, hemoptysis, and night sweats as well as include the relevant travel or exposure history. This demonstrates the seasoned learners' awareness of the key features (illness script) for this diagnosis. This type of exercise can be used to analyze the reasoning in a student's previous case presentation. For example, a teacher–learner dyad discussing a case may take one item on the student's differential diagnosis. "Let's say for example that you were this patient and you indeed have cholecystitis. Convince me in 20 seconds that this is your diagnosis." <student responds> "Now, how did your presentation compare to the one of the patient we are seeing?"

6.9   Summary

A primary goal of medicine is to make accurate diagnoses in order to improve health outcomes and reduce costs. To that purpose, the importance of this information to clinical teachers and their students cannot be overstated. There have been great advances in the past 40 years in understanding the processes that govern how people reason and, by extension, how physicians make decisions and diagnoses. Medical teachers should be attuned to the relevant body of knowledge from the field of cognitive psychology. These theories themselves—and not just the teaching strategies—are also relevant to students. With this in mind, we recommend instructing trainees in the principles of diagnostic decision-making. Teach them about hypothetico-deductive reasoning and

pattern recognition. Explicitly point out when they are engaged in one, the other, or toggling between both. Notice when they take shortcuts and comment on whether they do so wisely or not. Help your learners understand how their reasoning connects with their stored knowledge and illness scripts. Of the thousands of medical students that we have worked with over the past 10 years, virtually all have expressed the goal of becoming master clinicians. In our role as educators, we can best aid our students in this quest by demonstrating a keen awareness of the process of diagnostic decision-making they engage in, rather than focus solely on their ability to get the right answer.

In our experience, most students who have challenges in clinical reasoning can be remediated with attention paid to their knowledge base and their thinking patterns. Students with the greatest difficulty are those who struggle to engage in reflective practice (see Chaps. 13 and 14). Although some of these students may ultimately not succeed, the more we are able to promote the value of metacognition and reflection, the more we may be building upon the foundational guideposts that will allow all students to map their course to clinical excellence and expertise.

References

1. Kohn LT, Corrigan JM, Donaldson MS. To err is human: building a safer health system. Washington, DC: National Academy Press; 2000.
2. Newman-Toker DE, Pronovost PJ. Diagnostic errors—the next frontier for patient safety. JAMA. 2009;301(10):1060–2.
3. Kahnemann D. Thinking fast and slow. New York: Farrar, Straus, and Giroux; 2011.
4. Frederick S. Cognitive reflection and decision making. J Econ Perspect. 2005;19(4):25–42.
5. Ark T, Brooks LR, Eva KW. Giving learners the best of both worlds: do clinical teachers need to guard against teaching pattern recognition to novices? Acad Med. 2006;81:405–9.
6. Groopman J. How doctors think. Boston: Houghton Mifflin; 2007.
7. Elstein A. Thinking about diagnostic thinking: a 30-year perspective. Adv Health Sci Educ. 2009;14:7–18.
8. Bowen JL. Educational strategies to promote clinical diagnostic reasoning. N Engl J Med. 2006;335(21): 2217–25.

9. Charlin B, Boshuizen H, Custers EJ, Feltovich P. Scripts and clinical reasoning. Med Educ. 2007;41:1178–84.

10. Charlin B, Tardif J, Boshuizen H. Scripts and medical diagnostic knowledge: theory and applications for clinical reasoning instruction and research. Acad Med. 2000;75:182–90.

11. Eva K. What every teacher needs to know about clinical reasoning. Med Educ. 2004;39:98–106.

12. Bordage G. Elaborated knowledge: a key to successful diagnostic thinking. Acad Med. 1994;69(11):883–5.

13. Redelmeier DA, et al. Problems for clinical judgment: introducing cognitive psychology as one more basic science. CMAJ. 2001;164:358–60.

14. Elder L, Paul R. Critical thinking development: a stage theory. http://www.criticalthinking.org/pages/critical-thinking-development-a-stage-theory/483. Accessed 12 Nov 2012.

15. Croskerry P. A universal model of diagnostic reasoning. Acad Med. 2009;84(8):1022–8.

16. Quirk M. Intuition and metacognition in medical education: keys to developing expertise. New York, NY: Springer; 2006.

17. Croskerry P. The importance of cognitive errors in diagnosis and strategies to minimize them. Acad Med. 2003;78(8):775–80.

18. Fonteyn ME, Kuipers B, Grobe SJ. A description of think aloud method and protocol analysis. Qual Health Res. 1993;3(4):430–41.

19. Lane JL, Gottlieb RP. Structured clinical observations: a method to teach clinical skills with limited time and financial resources. Pediatrics. 2000;105 (4 Pt II):973–7.

20. Hamburger EK, Cuzzi S, Coddington DA, Allevi AM, Lopreiato J, Moon R, Yu C, Lane JL. Observation of resident clinical skills: outcomes of a program of direct observation in the continuity clinic setting. Acad Pediatr. 2011;11(5):394–402.

21. Zimmer KP, Solomon BS, Siberry GK, Serwint JR. Continuity-structured clinical observations: assessing the multiple-observer evaluation in a pediatric resident continuity clinic. Pediatrics. 2008;121(6):e1633–45.

22. Norcini JJ, Blank LL, Arnold GK, Kimball HR. The mini-CEX (clinical evaluation exercise): a preliminary investigation. Ann Intern Med. 1995;123(10):795–9.

23. Norcini JJ, Blank LL, Duffy FD, Fortna GS. The mini-CEX: a method for assessing clinical skills. Ann Intern Med. 2003;138(6):476–81.

24. Durning SJ, Cation LJ, Markert RJ, Pangaro LN. Assessing the reliability and validity of the mini-clinical evaluation exercise for internal medicine residency training. Acad Med. 2002;77(9):900–4.

25. Kogan JR, Bellini LM, Shea JA. Implementation of the mini-CEX to evaluate medical students' clinical skills. Acad Med. 2002;77(11):1156–7.

26. Kogan JR, Holmboe ES, Hauer KE. Tools for direct observation and assessment of clinical skills of medical trainees: a systematic review. JAMA. 2009;302(12):1316–26.

27. Pituch K, Harris M, Bogdewic S. The brief structured observation—a tool for focused feedback. Acad Med. 1999;74(5):599.

28. Neher JO, Gordon KC, Meyer B, Stevens N. A five-step "microskills" model of clinical teaching. J Am Board Fam Pract. 1992;5(4):419–24.

29. Schenarts PJ, Schenarts KD. Educational impact of the electronic medical record. J Surg Educ. 2012;69(1):105–12.

30. Wolpaw TM, Wolpaw DR, Papp KK. SNAPPS: a learner-centered model for outpatient education. Acad Med. 2003;78(9):893–8.

31. Stuart E, Slavin S, Blankenburg R, Butani L, Konopasek L. Clinical reasoning. In: Morgenstern B, editor. Guidebook for clerkship directors. 4th ed. Syracuse, NY: Gegensatz Press; 2012.

32. Baker E, Ledford C, Liston B. Teaching, evaluating, and remediating clinical reasoning. Acad Intern Med Insight. 2010;8(1):12–3, 17.

33. Wolpaw T, Papp KK, Bordage G. Using SNAPPS to facilitate the expression of clinical reasoning and uncertainties: a randomized comparison group trial. Acad Med. 2009;84(4):517–24.

Remediating Lapses in Professionalism

7

Muriel J. Bebeau and Kathy Faber-Langendoen

Abstract

This chapter describes how medical educators can use measures of moral reasoning and professional identity formation to provide students with a diagnostic assessment of strengths and shortcomings in their understanding of the ethical and moral dimensions of professionalism. In addition to providing examples of programs designed to address an event for an individual or group (e.g., cheating, subpar behavior in practice), the authors highlight strategies they have found effective in therapeutic interactions with students who present particular challenges.

7.1 Introduction

Our recommendations for remediating lapses in professionalism are guided by an evidence-based psychological theory (Rest's Four-Component Model (FCM) of Morality) that is further supported by evidence from 20 cohorts of professional school students who completed an ethics curriculum designed to promote the capacities defined by the theory. Beginning in the early 1980s, Bebeau and colleagues (see [6] for a recent summary of the various measures) designed and validated theoretically grounded

performance measures. These measures have been used to both identify the need for an ethics educational intervention and demonstrate long- and short-term program effectiveness. In addition to designing ethics educational programs for dentistry students [1], I (MJB) have designed individualized ethics remediation programs for over 50 professionals disciplined by a licensing board [40, 41], and, together, we (MJB and KFL) have designed and implemented an ethics remediation program for medical students involved in academic dishonesty (see "Case Study" below). In this chapter, we show how an assessment of two of the four components of morality informs the design of remediation programs that effectively promotes professional identity formation by empowering both professionals and students to recognize the shortcomings in their capacities that explain lapses in behavior. Based on our experience with dental and medical students, we discuss performance patterns that present special challenges for educators. In addition to general

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guidance for ethics remediation courses, we high-light coaching strategies we have found effective with challenging students.

7.2   The Components of Morality

In the early 1980s, following a decade of research on moral judgment development and its relationship to moral behavior [25], James Rest reviewed morality research from multiple theoretical perspectives in an effort to illuminate the internal processes—in addition to moral reasoning and judgment—that might explain lapses in moral behavior. Four clusters of findings [26] suggested these independent reasons for moral failure: moral blindness, defective reasoning, lack of commitment to moral ideals, and deficiencies of character and competence. His model of morality[1] operationally defines four independent competencies or capacities that need to be developed if one is to conscientiously, purposefully, and consistently engage in a pattern of behavior that one's peers would judge to be moral or ethical.

The Four-Component Model of Morality: Capacities Required for Effective Moral Functioning
Moral sensitivity:
Focuses on the interpretation of a situation, the various actions that are available, and how each action might affect the self and others. It involves imaginatively constructing possible scenarios (often from limited

(continued)

cues and partial information), knowing cause–consequence chains of events in the real world, and having empathy and role-taking skills. Both cognitive processes (perception, appraisal, and interpretation) and affective arousal (e.g., anger, apathy, anxiety, empathy, and revulsion) contribute to the interpretation of problematic situations.
Moral judgment:
Once a person is aware that various courses of action are possible, one must ask which line of action is more morally justified. This is the process emphasized in the work of Kohlberg [19]. Even at an early stage, people have intuitions about what is fair and moral, and make moral judgments about even the most complex of human activities. The educator's job is to understand how best to promote reasoning development, especially for students who have not developed the ability prior to professional education.
Moral motivation and commitment:
Involves prioritizing moral values over other personal values. People have many competing values (e.g., careers, relationships, institutional loyalties, hedonistic pleasures). Whether the individual gives priority to moral concerns seems to be a function of how deeply moral notions penetrate self-understanding [10]. When faced with a dilemma one must first decide on a morally correct action and then conclude that the self is responsible for that action. Moral motivation is a function of an internal drive for self-consistency. Blasi [11] argues: "The self is progressively moralized when … moral values guide the construction of self-concept and one's identity as a person."
Moral implementation/character and competence:
Having the strength of your convictions, the courage and persistence to overcome distractions and obstacles, and having the

(continued)

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[1] In contrast to other models of moral function that focus on the traditional three domains—cognitions, affect, and behavior—Rest argued that cognition and affect co-occur in all areas of moral functioning. Thus moral action is not simply the result of separate affective and cognitive processes operating as part of an interaction. Instead, each component is a mix of affective and cognitive processes that contribute to the component's primary function. Consistent with the current focus on professional competencies, we use the term competence or capacity to describe each of the four processes in Rest's Four-Component Model.

skills and ego strength to implementing the best action. A person may be sensitive to moral issues, have good judgment, and prioritize moral values; but if he or she is lacking in moral character and the competence to implement an action plan, he or she may wilt under pressure or fatigue, may not follow through, may be distracted or discouraged, and moral behavior will fail. This component presupposes that one has set goals, has self-discipline and controls impulse, and has the strength and skill to act in accord with one's goals.

It is noteworthy that the model is not conceived as a linear problem solving model. For example, moral motivation may affect moral sensitivity, and moral character may constrain moral motivation. In fact, Rest [26] makes clear the interactive nature of the components; each of the four components is a mix of affective and cognitive processes that contribute to the component's primary function.

Adapted from Bebeau [3], Bebeau et al. [9].

It is possible, of course, for persons to enter a profession without giving much thought either to the rules governing professional practice or to one's motivation for doing so, just as a child or adolescent may unreflectively (or even accidentally) simply obey the rules or the directives of parents—whether out of a desire to please, or a belief that authority ought to be respected. Also, strength of commitment and motives may vary. Yet for consistency in moral action, especially in the context of challenging professional practice, Rest thought individuals need to have four capacities (sensitivity, moral reasoning and judgment, moral motivation or identity, and moral implementation—i.e., the will or character, and the interpersonal and problem solving competencies) that give rise to conscious and effective, rather than accidental or unreflective, ethical decision making. Figure 7.1 references various measures

designed to assess professional competence for capacities Rest defined.

Evidence from a wide range of studies[2] supports Rest's view that each of these capacities develops throughout life. Thus, at any point in life, one's inadequately developed competence in ethical sensitivity, moral judgment, one's undeveloped sense of professional identity, or some failing in interpersonal interaction or competence in problem solving could result in what others judge as a moral failing. For example, a disgruntled patient or employee might report unhappiness with a professional to the licensing board. Such an act sets in motion a time-consuming investigation and, eventually, a judgment. If the judgment suggests someone has been harmed or wronged, questions emerge about a professional's competence and intentions. Actions judged as unprofessional are not necessarily the result of bad intentions. The role of assessment is to determine whether there are shortcomings in one or more of the capacities that, in turn, can help the individual engage (perhaps with the assistance of a mentor) in self-reflection, goal setting, and the development and implementation of a learning plan whose end-point is to enhance ethical competence and reduce the chances of unprofessional behaviors in the future.

7.3   Measuring Moral Reasoning Development and Professional Identity Formation

Unlike the various roles assumed by individuals in the general population, there tends to be a general consensus (typically set forth in codes of professional responsibility) that persons granted a license to practice are expected to engage in actions that benefit others [14, 16, 33–35]. Of course, professionals vary in the degree to

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[2] See Bebeau (2009a, b) for an example of the way the measures referenced in Fig. 7.1 have been used to diagnose and remediate dental professionals sanctioned a licensing board.

Four Component Model of Morality (FCM) (Rest, 1983)

Moral Capacity (Predictors)	Operational Definition	Measures
Moral Sensitivity	• capacity to **interpret ambiguous clues** in real-life settings	DEST
Moral Judgment	• capacity to **analyze moral issues** and provide justifications for decisions	DIT DERIT
Moral Motivation	• capacity to internalize and give priority to **professional values**	RCE PROI PIE
Moral Implementation	• capacity to empathic interaction and **problem solving**	PPS

Moral Behavior
Unethical, Ethical, Unprofessional, Professional

Fig. 7.1 Measures of each of the four components or capacities of moral or ethical behavior. The DEST (Dental Ethical Sensitivity Test) [34]. The DIT (Defining Issues Test) [25], described in this chapter. DERJT (Dental Ethical Reasoning And Judgment Test) (Bebeau and [36]). Three measures of moral motivation and commitment— the PIE (professional identity essay) is described in this chapter. The PROI (Professional Role Orientation Inventory) and RCE (Role Concept Essay) (see Bebeau 2009a). For validity data on these measures [37]. The PPS (Professional Problem Solving) [38]

The Evolving Professional Identity

What is the individual grappling with?

Constructing a discerning principled identity. Staying centered & responsible attuned to & tolerant of complexity

Being a team member or team player.
Concern for societal role, professional ideals
Balancing commitments to self, family, & profession

Individualistic performance.
Achievement and approval

Kegan, R. (1982)

Not everyone continues to develop

Fig. 7.2 The professional identity formation trajectory over the life-span

which their decisions are reflective, deliberate, and resistant to self-interest. However, within professional populations, there is the expectation that professionals are able to reflect on the moral basis of their actions (reason well) and to place the interests of the client before the self (prioritize the interest of others). We see the formation of a professional identity as a process by which professionals incorporate professional values, aspirations, and actions into their identity and develop increasingly complex understandings of what it means to be a professional. This process begins prior to entry into professional education programs and continues across the professional lifetime. Figure 7.2 illustrates the issues professionals encounter as they develop.

Ideally, if one achieves competence in reasoning and an understanding and commitment to professional values and expectations, idiosyncratic factors influencing action are reduced and behavior becomes consistently professional. In this section we describe two practical measures that relate to professional identity formation, their scoring, and interpretation of the results. Students and practitioners often get referred for remediation based on unacceptable behaviors (e.g., [23]). Yet, the specifics of those behaviors don't translate directly into remediation strategies. We have been able to show that effective remediation is best guided by measures of the individual's capacities and understandings that drive the behavior (Bebeau 2009b; [6, 8]). The first, the *Defining Issues Test* (*DIT*), provides a general assessment of the kinds of moral arguments the individual finds persuasive when confronted with a moral problem. The second, the *Professional Identity Essay* (*PIE*), elicits the individual's conception of the role of a professional in contemporary society.

7.3.1   The Defining Issues Test

Rest [25] asks respondents to choose among alternative actions when confronted with a series of moral dilemmas presented as brief written cases. Each dilemma is followed by 12 statements that reflect each of three general moral schemas (a Personal Interests Schema, a Maintaining Norms Schema, and a Postconventional Schema) (see Fig. 7.3) that adults tend to use to justify their action preferences as well as a few nonsense phrases that serve as a reliability check.

To gauge the development of an individual's moral judgment the respondents are asked to rate each statement and then select four of the 12 deemed most important to their decision making about the case and further rank order the selected statements. The DIT-2 takes the medical students on average 25–30 min to complete. Scoring responses across cases reveals (1) whether or not the individual has a preferred moral schema, (2) whether or not the individual tends to use the preferred schema in decision making, and (3)

whether the individual responded with reasonable consistency across cases and distinguished between coherent and nonsense statements. Recall that a moral dilemma isn't just a tough problem that is hard to resolve, but a situation that presents competing claims that thoughtful people can disagree with. Although there isn't one "right answer" to many difficult moral dilemmas, some answers are more defensible than others.

The DIT is an extensively validated and widely used measure of moral reasoning development and, unlike many preference measures, is highly resistant to social desirability bias, particularly to "faking" high scores. Norms are available for many groups who have taken the test. See Thoma [31] for a comprehensive interpretation of test results, for an update on validity and reliability of the test, as well as Rest et al. [27], a book detailing the validation of the Personal Interest Schema, Maintaining Norms Schema, and Postconventional Schema for adult development. For information on the availability of the DIT-1 or the DIT-2, see http://www.ethicaldevelopment.ua.edu/.

7.3.2   How Is Knowing One's Preferred Moral Schema Helpful?

People make moral choices many times a day, often without giving much thought either to the rationale that motivates their decision, or to the rules, societal norms, or professional code of ethics intended as action guides. In fact, for most decisions in daily life one needn't ponder *what one should do* morally, as rules are well known. One may, however, ponder *whether to do* what is morally indicated. In professional life, unless one is unfamiliar with general rules governing professional practice, reflection on the *should* question is seldom required. Further, reflection on the *should* question is unlikely unless (a) either the person recognizes that the problem presents a conflict between competing norms or rules, or (b) the person's decision is challenged. When challenged, professionals may reflect on the action and their understanding of the norm or rule

Three Kinds of Moral Justification

- Personal Interests (PI)
  - Arguments that appeal to personal interests
- Maintaining Norms (MN)
  - Arguments that appeal to laws and norms
- Postconventional (P)
  - Arguments that appeal to moral ideals
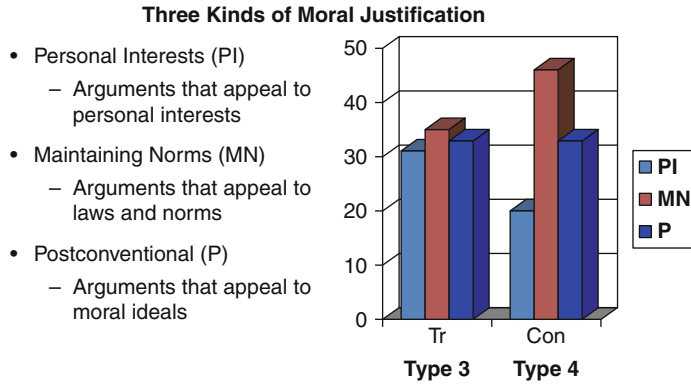
Fig. 7.3 The figure illustrates two DIT profiles indicating the percentage of time these individuals select each of three kinds of moral justifications. *Note*: A profile is classified as Transitional (TR) when a respondent has difficulty discriminating between justifications; the consolidated (Con) respondent clearly discriminates among justifications. Type reflects a particular pattern of schema (justification) predominance and consistency. Types range from 1 to 7 as illustrated in Fig. 7.4

Type 1	PI Predominant schema consolidated
Type 2	PI Predominant schema, transitional
Type 3	MN Predominant schema, transitional; PI secondary schema
Type 4	MN Predominant schema consolidated
Type 5	MN Predominant schema transitional; P secondary schema
Type 6	P Predominant schema, transitional
Type 7	P Predominant schema and consolidated
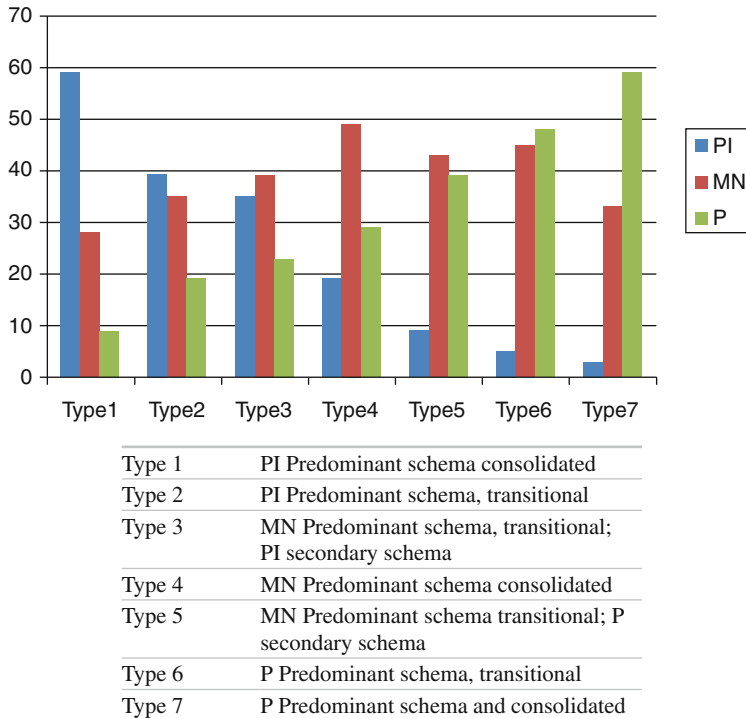
Fig. 7.4 The figure illustrates seven DIT profiles or types in terms of development and consistency in moral reasoning. Type 7 represents the ideal for persons in the most learned professions. *PI* personal interests, *MN* maintaining norms, *P* postconventional

and either admit to error or offer a justification. On the DIT, the justifications selected by respondents are judged. If the justification seems self-serving, or reveals a misunderstanding of the codes, rules, or norms, the judgment is negative. A justification that fails to articulate the moral conflict may also be negatively judged. Scores on the DIT can reveal the kinds of arguments one finds persuasive and thus is most likely to offer in defense of one's judgment. See Figs. 7.3, 7.4, and 7.5 for how this information may be useful.
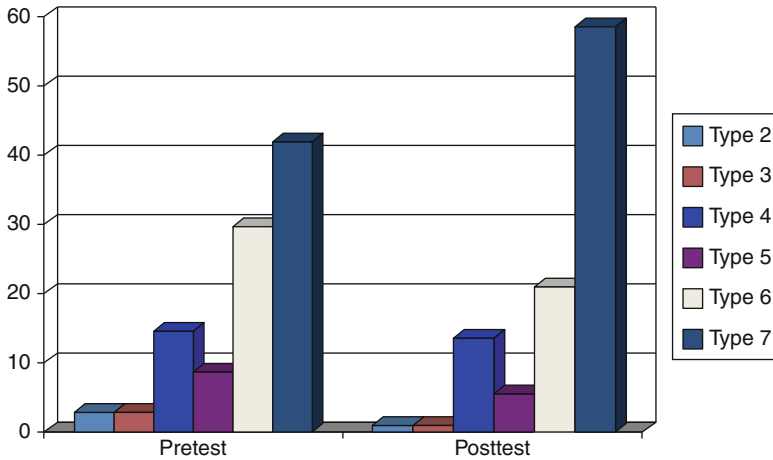
Fig. 7.5 The figure illustrates DIT profile changes from pretest (administered at entry to professional school) to posttest (administered 4 years later) for 15 cohorts ($n = 1,207$) who participated in a well-validated dental ethics curriculum. *Note*: cross-sectional analysis prior to the implementation of the curriculum indicates no change [38]

In sum, the test does not indicate whether someone is a good person or a law-abiding citizen, but it does help the person see what kinds of justifications he or she finds most persuasive. Also, the test does not discriminate, as does Kohlberg's [19] Moral Judgment Interview (MJI), among types of personal interest arguments typically used by children and adolescents, nor does it distinguish among the more complex theoretical approaches used by moral philosophers and ethicists. For example, the test does not discriminate which postconventional theoretical approach an individual uses to ground his or her moral judgments (e.g., casuistry, utilitarian, or virtue theory approach), but simply whether the individual prefers arguments that appeal either to procedural fairness or to ideals that ground coherent moral theories as described by research with the DIT shows that individuals use all three arguments to some degree in their moral thinking, but a preference for postconventional thinking tends to increase with higher educational attainment. Because professionals are often required to apply ethical principles or ideals to new problems that emerge in their profession, this skill is necessary for effective moral functioning. Research indicates a strong relationship between postconventional thinking (P Index) and a wide range of prosocial actions (including clinical performance for health care professionals). By examining the norms for persons at different levels of education, it is also possible to see how one's judgments are likely to be viewed by others. In sum, the test provides a coarse-grained assessment of the person's ability to distinguish among the kinds of arguments used to justify a moral action. For further details on the interpretation of scores, see the sample explanatory letter sent to DIT respondents (Appendix A).

7.3.2.1 Data on Professional Students' Moral Reasoning Development

Higher education, especially a liberal arts education, has a powerful effect on moral judgment development, and students entering medicine typically demonstrate reasoning development scores higher than the average adult. However, it appears that moral judgment development for entering professional school students and college students is currently less mature and driven by more personal considerations than it has been in previous cohorts. Consistent with other findings

indicating an increased emphasis on the self [32], observed a narrowing of social reasoning as measured by the DIT. It appears that moral judgment development for entering professional school students and college students is currently driven by more personal considerations than it has been in previous cohorts. Further, evidence suggests that in the absence of a curriculum in professional ethics, students do not enhance their reasoning development during professional school [35]. A recent study supports earlier observations that DIT scores of residents are typically lower than those of medical students and practicing clinicians and DIT scores have been associated with malpractice claims in practicing orthopedic surgeons.

7.3.3   Professional Identity Essay

The PIE consists of a series of open-ended questions designed to elicit the individual's conception of the role of a professional in contemporary society (see Appendix B). Responses scored criteria adapted from Kegan's life-span model of self-development [7]. Kegan's approach to the study of identity formation is based on constructivist notions that individuals are by nature engaged in making sense of the world and in so doing form conceptions of various social categories such as the self, the self as a member of society, as a professional, parent, and so on. Kegan and colleagues propose a life-span long developmental model in which individuals can be located in terms of prototypic identity formation.

We reworked Kegan's model [5] to focus on how the professional comes to understand his/her specific professional role (Appendix C) and incorporated Blasi's [10] view that individuals differ in the degree to which moral considerations penetrate the conception of self. In this view, *seeing oneself as responsible is at least part of the bridge between knowing what one ought to do and doing it*. Because students entering post-baccalaureate professional programs are often very capable of expressing themselves

in writing, we used a series of open-ended questions to elicit understanding of a professional identity consistent with Kegan's descriptions of development stages.

A scoring guide offers descriptions followed by prototypic statements that characterize stages and transition phases of an Evolving Professional Identity. In validation studies, trained evaluators have been able to achieve high levels of interrater reliability in judging levels of development [7]. To date, the primary utility of this measure is as a formative assessment to engage students in accurate self-assessment and reflection as to where they are on a developmental continuum typical of professional life and to develop a reasonable plan for self-development. Thus, ideally there should be an expectation that students will periodically revisit and reassess as they progress through the curriculum and through career advancement. Given the tendency of some to overestimate their level of development, the role of the mentor in this process is critical.

7.4   Educational Interventions

Even when applicants express an altruistic desire "to help others" as a motivation for pursuit of a professional, this idealist motive is seldom well grounded in an understanding of professional values and expectations. To further complicate the matter, as mentioned above, evidence from cross temporal meta-analyses of personal attributes [32] reveals today's students as even more self-centered than previous generations. The increase in self-centeredness is also supported by declines in moral judgment development among college and professional students. These trends present interesting challenges for educators. For example, even if students can be convinced that a profession should assume responsibility for self-regulation, they may be unwilling to accept personal responsibility holding that they are uncertain

about the validity of their judgment, perceive danger in challenging a superior, or lack the skills to do so.

Below we describe remediation program we designed and implemented based on a commitment to engage students as they self-assess and reflect the two interrelated processes of (1) their emerging identity as a health care professional, and (2) their current level of competence in reasoning about the complex moral problems likely to arise during in professional practice.

7.4.1   Case Study: Remediation Curriculum Developed in Response to a Cheating Scandal

After reviewing the literature, speaking with students, and considering our own experiences with ethics/professionalism remediation, we came to the conclusion that the students who cheated or failed to report cheating erred in one or more of a variety of ways.

Reflecting on this, we focused the remediation program on three domains of professionalism:
1. Commitment to the profession's ethic/code
2. Altruism towards patients and society
3. Responsibility to self-regulate the profession

> *A medical student alleged that several classmates were involved in collaborating on on-line quizzes for a required course. When confronted, approximately half of the class came forward and admitted to cheating. We were asked to develop a remediation program for these students.*

The course was delivered in 10.5 h over four sessions. Sessions were a combination of large group lectures, in-class writing assignments/assessments, and small group discussion. Students had eight writing assignments (some in-class, some outside of class) with an estimated

Errors Made by Students Committing Academic Dishonesty
- Not considering the consequences of one's actions
- Blame-shifting from oneself to the professor, administration, etc.
- Lack of moral imagination to create and consider other possible actions/choices
- Myopic focus on one's own immediate success, rather than broader focus on what sort of physician one aspires to be
- Lack of moral courage to report others
- Rejections of professional values of integrity and self-policing

12–15 h of homework. Successful completion of all writing assignments and attendance at all sessions were required; students failing an assignment were given the opportunity to redo the assignment.

Session One began with a lecture explaining the purpose of the course, which was to help the students reflect, self-critique, and reaffirm their commitment to professional values, and to come to a better understanding of the connection between academic integrity and professionalism in the clinical setting. In class, students completed the PIE (Appendix B). To provide students insight into their moral reasoning process, they were asked to complete the DIT, first individually, and then by consensus in groups of three.

Session Two included a lecture on moral capacities, six characteristics of a profession (with a particular emphasis on the social contract and resulting professional expectations), and the meaning of DIT results. Students were provided with their DIT results and an explanatory letter (Appendix A). After the Session Two lecture, students reviewed the PIE completed during Session One, assessing the extent to which their initial essay addressed each of the characteristics of the profession covered in the lecture (Appendix D). After completing this, students were given oral, aggregated feedback on their PIEs.

In preparation for Session Three, students reviewed a paper on developing a well-reasoned response to moral problems in professional ethics and wrote an analysis of a hypothetical case of a student who must decide whether or not to look at an illicit advance copy of an upcoming exam [2]. Students were divided into small groups of 8–9 for a faculty discussion of the case. Faculty leaders attended a development session prior to Session Three, to ensure quality and similarity of approach among the groups. After a discussion of what the hypothetical student should do and the justifications (including examining the affected parties, the various action choices, the consequences of those actions, and the student's obligations) students were asked to write briefly in class about a related question: Having decided not to look at the exam, should the student report that an advance copy of the exam had been available to other students? The students discussed this issue in the small groups, and then revisited their written analyses of both issues post-discussion, revising or strengthening their arguments based on the discussions. The collected written work was evaluated with a detailed rubric, and students were provided with this feedback.

In preparation for Session Four, each student critically analyzed an article from the literature on academic dishonesty; articles included self-reported incidences of academic dishonesty with demographic correlates and articles examining the correlation of academic dishonesty with future unprofessional behavior. Students also read an essay on the psychology of cheating and completed a written reflection on which rationalizations most appealed to them, what beliefs they had that made those rationalizations compelling, and counterarguments to the most compelling rationalizations. This written work formed the basis for small group discussion during Session Four where students were also presented with a hypothetical case of being asked by a new patient in their ambulatory rotation whether the student was one of those caught cheating (the cheating scandal had been reported in the local media). Students wrote about their

imagined responses and discussed this in small group setting. The session closed with a lecture on the stages of identity formation as related to the health professions (Appendix C), and guidance as to how to self-assess stage of identity formation and strengths and shortcomings vis-a-vis professionalism, in order to develop a written Learning Plan (Appendix E) as the final assignment in the course. The grading rubric used to assess these Learning Plans is also included (Appendix F).

All assignments were successfully completed on the initial attempt by 86 % of students. When an assignment was not satisfactorily completed, the student met with the professor to discuss the concerns and was offered the opportunity to redo the assignment. At the end of the course, the Learning Plan was successfully completed by 96 % of students on the first attempt. Eventually, all students except one satisfactorily completed the coursework; this student was referred back to University Administration for further consideration.

7.4.2 Coaching Strategies for Interacting with Students who Challenge the Instruction

In this last section, we highlight strategies we have found effective in therapeutic interactions with students who present particular challenges. As noted above, not all students in the remediation course successfully completed the assignment on a first attempt. This is similar to my (MJB) experience with an introductory course for first year dental students. Following instruction, it is not unusual for 15-20 % of students to express dissatisfaction on course evaluations, with the most frequent criticisms being that the instructor is "imposing values" and students "should be able to develop their own values." Although such viewpoints are often expressed anonymously, I have noticed (across cohorts) that the proportion of students who express dissatisfaction with the course or the instructor is nearly equivalent to the proportion whose learning plan

is returned with comment and suggestion for revision.

In both the remediation course and the introductory course, we met one-on-one with students who failed to complete the course requirements to explore this atypical behavior. Most often, the underlying problem could be viewed as a developmental issue. Seeing the issue from the student's perspective enabled us to provide feedback that was both developmentally appropriate and effective. Following are five examples of self-assessments that illustrate developmental issues commonly encountered with professional school students. Each is followed by a suggested coaching strategy. For additional guidance see Bebeau and Lewis [5].

Case (1) On the first draft of a self-assessment one student likened his highly individualistic approach to identity formation to an admirable form of creative expression. He opined:

"*When taking ceramics courses in undergrad I [made] a conscious effort to not look at examples of other artists' work … I made this effort to avoid squashing my own creativeness so that I would know, deep down, that the art I was doing was completely original, unique and uninfluenced by concepts that other people … In certain ways, I feel that my development as a professional should also be of my own doing, utilizing my own morals and freewill in developing strategies that will maximize my ability to deliver quality oral care. There are certain concepts that I have plucked from this University's accepted doctrine of ethical parameters that I do feel are applicable to my unique professional development.*"

Coaching Strategy: This student saw the development of his professional identity as highly individualistic, honoring only his *own* morals and free will. He deliberately separated his approaches from that of the profession he chose to join, and assumed he was not required to accept the profession's value frameworks. While we might recognize and support the need for professional autonomy, it was unclear that he understood fully what it meant to learn and seemed to believe that studying the works and

view of others will undermine his individualism. This student was *not* helped during his undergraduate education to see that:

"*Creative ideas, even those that are radically new, are firmly planted on ideas that came before. There are always antecedents to any creative idea. The reason that it sometimes looks like an idea comes out of nothing is because we observers are ignorant of the knowledge base of the individual producing the new idea.*" (*p. 53*)

Case (2) This student felt he should not have to rewrite an essay judged to be "*so general as to not be responsive to the questions.*" Because he viewed the profession's values as in conflict with religious values and felt that religious values should trump the profession's values in cases where they came into conflict. He opined:

"*The information you presented was already common knowledge for me… I am a strong Christian, which I feel influences my ethical decisions greatly. …I base my life on the Bible and try to live and act accordingly. …, I feel that I am more professional and ethically minded than most of my fellow students. As far as improving my professional and ethical awareness, I continue to read books and stories about ethical and professional matters… There are some great Bible stories, which you could use as great examples. For example, the Adam and Eve story. They came to an ultimate decision of eating the fruit or not. Unfortunately they chose to not listen to God and suffered the consequences. These could be considered ethical decisions. There are other stories in the Bible, which show people who make the correct ethical decision. I am not perfect so I will always have room to grow ethically and professionally. I feel that as long as I follow God's word and seek his advice on my decisions I will act ethically and professionally.*"

In summarizing he added:

"*You are more than welcome to disagree with me and then we can agree to disagree on these points. These are my opinions, strong as they may be, and I am not about to change them. I am willing to meet with you to discuss further.*"

Coaching Strategy: Initially I try to clarify that religious values address questions such as "Why be moral?" or "Why do I conduct myself as I

do?" from a personal perspective. Whereas a person's faith commitments form the basis for living a moral life (and in shaping the core and the content of that morality), this understanding guides the behavior of the individual and ought not simply be imposed on those who stand outside that particular faith commitment. In order for professionals to work in a pluralistic society, the profession needs to be able to appeal to—or at least accommodate—a common morality (Gutmann and Thompson [15]).

As presented in the lectures, the values of the profession are grounded in the social contract that the profession has with society. In many cases, a profession's values and one's religious values may be in alignment. At other times, particularly when students have repeatedly experienced situations when their religious values conflicted with broader societal norms, they may reflexively assume that their religious values will conflict with professional norms. In such cases, the student should be asked to explain specifically the nature of the conflict; in some instances, this alone will lessen the student's sense that there is, in fact, a substantial conflict. In cases where there is an irreducible conflict, the individual needs to decide whether or not he/she wishes to join the profession. *No one is required to become a member of a profession, but the profession does have a right to expect that its members will abide by the profession's ethical codes and the foundational values that undergird these codes*.

Before engaging a student in this discussion, I find it helpful to see how the individual responded to the DIT, as it will give me a sense of where the student is developmentally. If the student is consolidated on a "Postconventional Moral Framework," as was the student in the example above, this discussion should be fairly easy to have. I showed the student his responses to the DIT, helped him recognize that he believed that rules, norms, and authorities (including the profession's norms and authorities) were open to challenge. Further, by engaging him in perspective taking, it became clear that he didn't believe that a professional should

be able to impose his particular *religious* view (like a prohibition against blood transfusions) on a patient, especially if the patient was in need of a transfusion. As our conversation proceeded, it became clear that he and I did not see things differently.

On the other hand, if this student's DIT profile suggested that he was consolidated on a "Maintaining Norms Moral Framework," this discussion would have been more challenging, as the student might believe there are "right answers" to moral problems that flow from authorities (religious or legal) that are not open to question. Even if a subsequent course in the curriculum is designed to challenge this notion and gently promote moral judgment development, it may be helpful to acknowledge that much of the time our rules and norms do provide guidance. As long as one is aware of the rules, norms, and codes of ethics that guide professional practice, one needn't continually reflect on what one "ought" to do. Yet this may be a good time to point out that the practice of a profession is grounded in science and with scientific and technological advances, new problems can emerge (e.g., patient privacy in the internet age) that require "rethinking" of rules and laws governing professional practice. This may also be a good time to stress historical changes brought about by the bioethics movement—particularly with respect to patient autonomy. Codes of ethics have changed to reflect greater pluralism of thought and value, and a "much needed taking of physicians and dentists off of pedestals." [KFL] Further, a historical review of codes of ethics of one's profession will show how frequently codes are modified and revised to take to accommodate new problems that emerge in professional practice. To emphasize that its code of ethics is grounded in moral ideals or principles, a recent revision of the American Dental Association code of ethics is organized around these principles: autonomy, beneficence, nonmaleficence, justice, and veracity. Further engaging the student in perspective taking will likely be helpful, as will assuring the student that working through these issues is part of professional ethical development.

But, it is worth emphasizing that in the end, becoming a professional is a choice. Prior to taking the oath, each of us needs to decide whether we can reconcile our personal values with the profession's values. If not, there are lots of other ways to earn a living.

Case (3) This student challenged the general view that society and the profession have expectations of persons granted a license to practice. She opined that many good professionals do not see themselves as having to "*serve the underserved*," and that becoming a professional does not mean one must "*join the professional association*," pointing out membership in professional organizations "*is not legally required*." This student argued: "*As long as a person abides by the laws governing the practice of dentistry, they can practice as they deem appropriate*."

Coaching Strategy: Whereas most students completing the assignment seem to accept the responsibilities articulated in the lecture, it is often difficult to determine whether the student's expression of a responsibility to "serve the underserved," is heart-felt, and not simply "telling the instructor" what they think the instructor wants to hear. With respect to this issue, it is particularly important to acknowledge that the expectations are not particularly easy to fulfill, and some are more difficult to navigate than others, especially when the student is confronted with the reality of developing competence, and figuring out how to make a living. I often state: "Some of you were brave enough to reveal the discomfort you feel with the expectation to 'serve the underserved'. And you should!" Then, I point out that many of the exemplary professionals indicate that in their initial years of practice they did not see professional responsibilities to others in the same way they see them now. One moral exemplar that I often quote advises, "First excel; then help others."

Case (4) Students often challenge a responsibility to govern their profession—opining that this is the profession's responsibility, not theirs [24]. The following student demonstrates a developing understanding of the responsibility, but expresses reluctance to engage in confrontation, something she is not prepared for.

> "*I had not really comprehended that as a professional, I am a representative and it is my duty to report those professionals that are not meeting the requirements and standards…. This makes sense to me now because the dental profession is based on a trust relationship between the practitioner and society. If someone were to shatter that fundamental principle, people would become skeptical of the profession as a whole and would lose respect for the profession's members. I can see this area becoming a challenge for me because I am not a really critical person and would feel out of character confronting one of my colleagues. If the patient was being harmed in any way, I would have no trouble reporting the dentist, but if it was a matter of a procedure not being up to standard, I may run into an issue.*"

Coaching Strategy: When responding to a comment like this, one might write in the margin "Maybe you shouldn't think of it as 'confronting,' 'calling out,' or 'reporting,' but rather as 'informing,' 'empowering,' or 'enlightening.'" However, a more fulsome response is usually required. The student is articulating a struggle that can't be handled in the margins of a paper. In our experience, many professionals struggle with this responsibility. Some are exceedingly effective at providing feedback, others less so. If we expect professionals to become effective at giving feedback to each other, to patients, or superiors, the skill must be developed (see Chap. 15). Actual lessons, with assessment and feedback, must be devised to hone this critical interpersonal and intraprofessional skill.

Case (5) A most challenging type of student is what we have sometimes referred to as the "alienated idealist," who comes to the profession with high expectations that members of the profession would all exhibit great skill and unbridled altruism, an almost all-encompassing devotion to the profession. When the student observes that many clinicians fail to meet these lofty expectations, the

student may disengage, become cynical, or believe that only a select few truly understand professional values. Most typical is a kind of cynicism about superiors and peers who they see as acting inconsistently with the ideals they espouse. I (KFL) observed that: "*Some of these students with extremely high ideals are prone to becoming alienated from colleagues. On the other hand, some of them could possibly become passionate advocates for changing the system (like Paul Farmer, perhaps)—they might irritate a lot of others but go off and actually accomplish great things in their field, more as a lone horse. The danger is that they might burn out, become totally disillusioned and end up bailing on clinical practice and open a vineyard. I don't know, of course, but I am wondering it they stand apart from the classification somewhat.*"

Coaching Strategy: After acknowledging the high standards the student has set, both for herself and others, it may be useful to ask her to identify the particular competence that is missing for the person she is criticizing—or to recognize the competence required to accomplish an exceptionally challenging task, or to cite an exemplar she has encountered who could do "what is needed" or "what would be admired." Each of the dental exemplars studied by Rule and Bebeau [28] demonstrated exceptional commitment to professional values, but also particular competencies that contributed to their exceptional achievements. For example, Hugo Owens, a highly effective dentist, community leader, and civil rights activist, saw himself as "able to do things that others thought should be done—like confront an unfair policy or rule—but couldn't do for themselves." His exceptional interpersonal competence and problem solving "know how" made him an effective change agent for integration of a public library and community golf course, as well as generally enhancing race relations in his community. In this way the student is being coached to have empathy for colleagues who may not have extraordinary skills in all domains and to make realistic judgments about the competence of those who may disappoint at times.

7.5   Summary and Conclusions

It is often argued that we ought to do a better job of screening applicants for entrance into the professions. And yet as Sui and Reiter [30] point out, we do not have measures that are effective for discriminating among applicants to the learned professions. They simply lack predictive validity. Some progress has been made in selection of students to the medical school based upon a Mini Medical Interview (MMI) [12], a measure that appears to assess some aspects of professionalism. And while such findings are encouraging, we agree with Shulman [29] that professional education will always need to address the formation of professional identity "with a moral core of service and responsibility around which the habits of mind and practice should be organized." *As educators we do not fulfill our responsibility if we assume that students will intuit the professional's values and expectations from the general socialization process*. Emphasis must be placed early in professional education on assessing capacities that are known to be necessary conditions for behavior, and then engaging students in self-assessment and reflection regarding attainment of these capacities. Just as a medical school curriculum provides for the development of technical knowledge and its application to clinical care, we advocate assessment, instruction, reflection, and further assessment of professional identity formation. In the end, of course, each student is responsible for his or her own learning, and is expected to maintain competence throughout a lifetime of professional practice. In the case of ethical development and professionalism, we show how measures of *moral reasoning and professional identity formation* can provide an evidentiary basis to help students take responsibility for the professional ethical development. Additionally, by engaging students in self-assessment, reflection, and feedback, we are able to observe evidence of professional development (see also Chaps. 14 and 15).

Appendix A

Interpreting DIT-2 Results

In the first session of this course, I explained briefly that four abilities are needed to effectively resolve complex professional problems:

1. Moral sensitivity: the ability to recognize ethical issues in situations we encounter
2. Moral judgment: the ability to apply moral principles or ideals when developing a solution
3. Moral motivation and commitment: the ability to distinguish between competing values and commit to the moral value
4. Moral character and competence: the ability to develop and carry out a concrete set of plans to effectively resolve the moral dilemma

The DIT-2 (the assessment you completed during Session One) deals specifically with **moral judgment**—the ability to distinguish among moral arguments that appeal to the different justifications one could use to resolve a moral dilemma. The DIT-2 and that which it measures, moral reasoning and judgment, have been shown to relate to a wide range of prosocial behaviors, including the clinical performance of health care professionals.[3,4,5]

Review of the DIT-2

The DIT-2 asked you to consider several dilemmas. The problems are dilemmas because many people feel they cannot be fairly resolved by simply applying explicit rules or laws. After taking an initial position on a dilemma, you were asked to rate and rank arguments that some people consider important in deciding what to do.

The arguments presented on the DIT-2 reflect different strategies or conceptual frameworks people use to explain their actions. Even though there are many kinds of arguments, research shows that, for adults, the arguments cluster into three major groups. These groups are described below:

Index[a]	Index abbreviation	Reflects arguments that appeal to…
Personal interest	PI index	Personal interest and/or to maintaining one's loyalty to family/friends
Maintaining norms	MN index	Maintaining existing laws, rules, and/or societal norms (also called "conventional arguments")
Post-conventional	P index	Procedural justice and/or to moral principles and ideals upon which conventions, norms, rules, laws are based
Utilizer score	U score	Extent to which arguments preferred are consistent with action chosen

[a]Proportion of times you ranked this class of argument as most important.

Another useful index derived from the DIT-2 is the U score. The Utilizer score indicates whether you tend to apply the arguments you indicated were more important to you. Sometimes people recognize more adequate moral arguments, but do not use them in making a decision. Scores typically range from −0.5 to +0.5. A low U score indicates less consistency between the arguments selected as important, and the position that a test-taker ultimately chose.

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[3] Sheehan et al. Moral judgment as a predictor of clinical performance. Eval Health Prof. 1980;3:393–404.

[4] Baldwin et al. Moral reasoning and malpractice; a pilot study of orthopedic surgeons. Am J Orthop. 1996;481–4.

[5] Candee et al. Moral reasoning and decisions in dilemmas of neonatal care. Pediatr Res. 1982;16:846–50.

What do these scores mean? DIT scores <u>do not</u> tell you whether you are a good or kind or caring person, whether you are a law-abiding citizen, or whether you will be an excellent physician. What <u>do</u> tell you is something about your preferences for different conceptual frameworks—the kinds of arguments that you find appealing at this point in your life and the extent to which the arguments you chose are consistent with the action choice you chose on the measure.

One's preference for different moral arguments tends to change as a person develops and changes. Knowing your preference helps you see whether you are likely to be in agreement with people in your profession should you be confronted with problems such as those presented on the test.

Remember also that there are other ethical abilities that are also necessary for consistent ethical actions. These include sensitivity, moral motivation and commitment, and ethical implementation abilities. The DIT-2 does not measure these abilities.

Are higher _P_ scores better? In general, as people develop as a result of education, they tend to come to prefer postconventional arguments. The extent to which they do so varies among professions. For example, persons who devote their professional lives to working on complex moral problems, like philosophers, ethicists, and political scientists, prefer arguments based primarily upon moral principles and adherence to an underlying moral framework (postconventional moral reasoning). Accordingly they tend to have a higher P Index (mean of 65) than do persons in other walks of life, including physicians. As a group, physicians tend to have somewhat lower _P_ scores, with proportionally higher MN scores, reflecting a greater emphasis on maintaining societal norms and rules; the average medical student selects postconventional arguments about 50 % of the time. The average adult selects postconventional arguments 40 % of the time.

What if my P Index is below the mean of my group? Research shows that as we expand our thinking as the result of higher and professional education, our relative preference for postconventional moral arguments increases. While we do have data correlating "_P_-score" (preference for postconventional thinking) with clinical performance measures and lower likelihood of malpractice judgments, we do not know whether higher scores cause these correlations. It is likely that preference for postconventional thinking equips physicians to resolve morally complex dilemmas when faced with rules/laws/norms that are ambiguous, contradictory, nonexistent, or inappropriate. As a result, the person takes a broader range of perspectives into account when making a decision about what to do.

If you got a low score on the P Index, you probably got a higher than average score on the MN Index, indicating that, as you responded to the cases, you placed a higher emphasis on adhering to explicit rules and laws than to adhering to an independent underlying moral framework.

What if I got a high MN or PI score? We all use personal interest arguments some of the time and maintaining norms arguments much of the time. There is nothing wrong with doing so UNLESS doing so disadvantages someone in a way that is fundamentally unfair. The challenge seems to be to figure out when reliance on personal interest argument or on maintaining norms does not meet the situation's needs (when a postconventional framework is needed). The ability to distinguish among different kinds of moral arguments and to use arguments based on professional values and ideals (those which underlie rules, laws, guidelines) can be improved by rigorous discussion of complex moral dilemmas; ELSIM (first year) and Bioethics at the Bedside (third year) include such discussions.

What does the U score mean? The U score indicates the degree of consistency between the preferred arguments and the preferred action choice. If you are inconsistent, it may say that you are not sure why you picked the action you did or that you had a reason other than one of the preferred arguments. Or it may mean that you are open to reconsidering your judgment, a mark of moral maturity.

<u>How will these results be used in this course?</u> There is no passing or failing score on the DIT-2.[6] We use this measure as a way to help you reflect on your approach to moral judgment and reasoning, one of several areas covered in your education on ethics and professionalism. Your specific scores will not be shared as such with anyone. De-identified results may be pooled across the class and incorporated in reports that evaluate the curriculum. If you would like to discuss your specific results or the DIT-2 in general, please contact the course director.

| | Individual DIT-2 results | | | |
| Student: _____ | Date DIT completed:_____ | | | |
Index	Index abbreviation	Reflects arguments that appeal to…	Your individual score[a]	Mean score (±s.d.) [entire class or cohort] $n=$
Personal interest	PI index	Personal interest and/or to maintaining one's loyalty to family/friends		
Maintaining norms	MN index	Maintaining existing laws, rules, and/or societal norms (also called "conventional arguments")		
Postconventional	P index	Procedural justice and/or to moral principles and ideals upon which conventions, norms, rules, laws are based		
Utilizer score	U score	Extent to which arguments preferred are consistent with action chosen		

[a]Proportion of times you ranked this class of argument as most important

Appendix B

Professional Identity Essay

Please print your Name and today's date on the front of your BlueBook.
This essay explores how you understand the meaning of professionalism at this point in your development and how that relates to the formation of an ethical professional identity. Research suggests that the meaning of professionalism and one's identity with the profession evolves throughout one's career. Respond as fully as you can to each of the questions. In subsequent sessions you will have an opportunity to compare your responses with responses of persons contemplating becoming professionals, as well as with persons in later stages of professional development. The purpose is to engage you in self-assessment, reflection and goal setting.
Please answer these questions as fully as time allows. <u>Write at least a paragraph for each question. Print clearly in the BlueBook provided and number each response</u>.
1. What does being a member of the medical profession mean to you? How did you come to this understanding?
2. What do you expect of yourself as you work towards becoming a full-fledged physician?
3. What will patents expect of you?
4. What will the profession expect of you? How did you come to this understanding?

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[6] At the same time, the measure has reliability checks to pick up random responses, missing data, consistently selecting items for style (rather than meaning), or not following instructions. If the scoring shows significant issues in these areas, I will discuss this with you individually, as it indicates a lack of understanding of or serious engagement with the task.

5. What conflicts do you experience or expect to experience between your responsibility to yourself and others—patients, family, profession? How do you resolve them?
6. What would be the worst thing for you if you failed to live up to the expectations you have set for yourself?
7. What would be the worst thing for you if you failed to live up to the expectations of your patients?
8. What would be the worst thing for you if you failed to live up to what society expects of physicians? How did you come to this understanding?
9. Think of a physician you consider an exemplar of professionalism. Describe why you chose this person, illustrating with an incident or pattern of decisions or actions that supports your choice.

Appendix C

The Evolving Professional Identity

Expectations and Obligations of the Professional[7]
- To acquire the knowledge of the profession to the standards set by the profession.
- To keep abreast of changing knowledge through continuing education.
- To make a commitment to the basic ethic of the profession—that is, to place the interests of the patient above the interests of the professional, and to place the health interests of society above the interests of the profession.
- To abide by the profession's code of ethics, or to work to change it, if it is inconsistent with the underlying ethic of the profession.
- To serve society (i.e., the public as a whole)—not just those who can pay for services.
- To participate in the monitoring and self-regulation of the profession. There are at least three dimensions to this expectation: to monitor one's own practice to assure that processes and procedures meet ever-evolving professional standards, to report incompetent or impaired professionals, and to join one's professional associations, in order to participate in the setting of standards for the continuation of the profession. The latter is not a legal, but rather an ethical responsibility.

The Evolving Professional Identity[8]
Robert Kegan [17] suggests that all human beings are continuously involved in a process of constructing meaning. As individuals gain an increasing amount of experience in an extremely complex world, they construct progressively more complex systems for making sense of it. Similarly, each person constructs an understanding of what it means to be a professional, and a professional's understanding may be qualitatively different from that of the general public.

Kegan's five levels of identity transformation were adapted for the professions by Bebeau and Lewis [5] to enable educators to coach professional students, as they reflect on their evolving professional identity. Three levels of identity formation are typically evident among aspiring professionals.

The Independent Operator
These individuals look at themselves and the world in terms of individual interests and concrete, black-and-white role expectations (their own, others', their employer's, etc.). Personal success is par-

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[7] Bebeau MJ, Kahn J. Ethical issues in community dental health. In: Gluck GM, Morganstein WM, editors. Jong's community dental health. 5th ed. St. Louis: Mosby; 2002. pp. 425–445.

[8] Adapted from Bebeau MJ, Lewis P. Manual for assessing and promoting identity formation. Available from the Office for the Study of Ethical Development, University of Alabama; 2003. Also, Rule JT, Bebeau MJ. Dentists who care: inspiring stories of professional commitment. Chicago, IL: Quintessence Publishing Co.; 2005.

amount. It is measured by concretely accomplishing individually valued goals and enacting specific role behaviors. The perspectives of others may be overlooked, misunderstood, or misconstrued by these individuals.

How the typical *Independent Operator* understands professionalism. These individuals understand professionalism as meeting fixed, concrete, black-and-white role expectations, rather than a broader understanding of what it means to be a professional. Motivation for meeting standards is wholly individual and based on a desire to be correct and effective. Said one aspiring professional, "*There are professional guidelines and codes that shape your life*."

The Team-Oriented Idealist

Unlike *Independent Operators* who view themselves and others as individuals, each with his or her own agendas and interests, *Team-Oriented Idealists* view themselves and others as having shared interconnections. Their capacity to make sense of the world, by taking multiple perspectives simultaneously, profoundly changes their sense of self and how they understand social reality—as shared experiences, psychological membership, and the internalization of social expectations and societal ideals. While *Team-Oriented Idealists* still possess and can articulate *individual* interests and specific behavioral goals, individual interests are no longer central.

How the *Team-Oriented Idealist* understands professionalism. Unlike *Independent Operators*, these professionals are both idealistic and internally self-reflective. They understand and identify with (or worry that they are not yet fully identified with) their chosen profession. They no longer see professionalism as enacting specific behaviors or fixed roles (the *Independent Operator's* view). Rather, the *Team-Oriented Idealist* sees professionalism as meeting the expectations of those who are more knowledgeable and legitimate, and even more professional. As one professional remarked, "*We must always hold ourselves to the highest expectations of society*." Because their identity is grounded in others, and particularly external authorities, the Team-Oriented Idealist is vulnerable to "going along with others" for the sake of "getting along," and can have difficulty seeing boundaries between self and other.

The Integrated Professional. If a *Team-Oriented Idealist* is characterized by embeddedness in and identification with a set of shared or collective identities, *the Integrated Professional* forges a personal system of values and internal processes for evaluating those shared identities. *Team-Oriented Idealists* often find themselves torn among multiple shared identities (e.g., physician, parent, spouse) with no easy way of coordinating them. As one's responsibilities multiply, life as a *Team-Oriented Idealist* often becomes one of constantly trying to balance the felt obligations of multiple identities. The self-system of the *Integrated Professional* provides an internal compass for negotiating and resolving tensions among these multiple, shared expectations. Conflicts among the inevitable competing pulls of various roles and their attendant obligations are negotiated by adherence to one's own internal standards and values.

How the *Integrated* individual understands professionalism. These individuals, unlike *Team-Oriented Idealists*, are no longer identified solely with external expectations of their professional role. Instead, having freely committed themselves to being a member of the profession, they have constructed a self-system comprising personal values integrated with those of the profession. These provide principles for living. While their identity is not wholly embedded in their profession, they have created a vision of the "good" profession that is grounded in reflective professional practice. As *Integrated* individuals continue to transition to the next level ([17] *Humanist* or [28] *Moral Exemplar*),

they are able to stand aside from their own profession and even look across professions. They critically assess aspects of the professions, yet remain strongly committed. They are authentic persons who may emerge as leaders within the profession. Thus, *Integrated* individuals often become change agents within their profession.

In the lifelong process of identity development, individuals spend a considerable amount of time (typically many months) in the transition between stages. Transitions are characterized by the process of encompassing one's current way of making meaning within the broader and more complex framework of the next developmental stage. Both stages may be demonstrated, with the higher stage expressed in a tentative and less well-articulated manner. Research suggests that many college-age students are in the transition between the *Independent Operator* and the *Team-Oriented Idealist*, whereas the transition between the *Team-Oriented Idealist* and the *Integrated Professional* is more typical of early to mid-career professionals. Rarely is full transformation to the *Integrated Professional* evident before mid-career.

Appendix D

Professional Expectations: Self-assessment and Reflection

Review the Professional Identity Essay (PIE) you wrote during the previous session and the personal statement from your residency application, to see which ideas were already a part of your understanding and what new insights you gained from the readings and lecture. Then answer the following questions in the time allowed during this session.

Please print legibly.
Name_____
Date: _____

1. **Acquire the knowledge base**.
   To what standard?
   As you prepare to graduate, have you met the standard for acquiring a knowledge base? What else is required?
   Was this idea part of your initial understanding as expressed in your PIE and/or Personal Statement? If not, what new insight have you gained?
2. **Keep abreast of evolving knowledge**.
   How is this accomplished in professional life? What are some examples?
   Was this idea part of your initial understanding? If not, what new insight have you gained?
3. **Commit to the profession's ethic**, which is … (Be sure you are able to express this in your essay)
   What is the profession's ethic? (By "profession's ethic," we mean the basic, fundamental promise of the profession, both to individuals and society).
   Is commitment to the profession's ethic a matter of choice?
   Does the profession have a right to expect that persons who join the profession will commit to the profession's ethic? Why or why not?

   Was this idea part of your initial understanding as expressed in your PIE and/or Personal Statement? If not, what new insight have you gained?

4. **Abide by the code**, unless …

   Are there any circumstances under which one would not obey the code (e.g., expectations as formulated in the AMA's Code of Ethics, the American College of Physicians' Ethics Manual, or statements of ethical expectations from other professional societies)? What are some examples?

   What is the difference between these sorts of codes/statements and the "ethic" of the profession?

   What other rules or laws apply to the practice of medicine?

   Are there different consequences for violation of the various laws and ethical codes?

   Was this idea part of your initial understanding as expressed in your PIE and/or Personal Statement? If not, what new insight have you gained?

5. **Serve society**.

   What is meant by "service to society?" What is the basis of society's expectations of professionals?

   What are the limits on those expectations?

   What is meant by the term "pro bono" as used in some professions? How does that relate to medicine?

   What are examples of ways (in addition to serving those who pay) that physicians can "serve society"?

   Was this idea part of your initial understanding as expressed in your PIE and/or Personal Statement? If not, what new insight have you gained?

6. **Regulate yourself and participate in monitoring your profession**.

   What are some examples of self-monitoring or self-regulation?

   What is expected of each professional with respect to monitoring the profession?

   If it isn't legally required, why would professionals join their professional associations?

   What three elements are required to meet this responsibility?

   Were these elements part of your initial understanding as expressed in your PIE and/or Personal Statement? If not, what new insight have you gained?

For your reference, here are the expectations and obligations of the professional.

- To acquire the knowledge of the profession to the standards set by the profession.
- To keep abreast of changing knowledge through continuing education.
- To make a commitment to the basic ethic of the profession—that is, to place the interests of the patient above the interests of the professional, and to place the health interests of society above the interests of the profession.
- To abide by the profession's code of ethics, or to work to change it, if it is inconsistent with the underlying ethic of the profession.
- To serve society (i.e., the public as a whole)—not just those who can pay for services.
- To participate in the monitoring and self-regulation of the profession. There are at least three dimensions to this expectation: to monitor one's own practice to assure that processes and procedures meet ever-evolving professional standards, to report incompetent or impaired professionals, and to join one's professional associations, in order to participate in the setting of standards for the continuation of the profession. The latter is not a legal, but rather an ethical responsibility.

Appendix E

Develop a Learning Plan for Your Professional Ethical Development

Directions: Please prepare a three- to five-page typed, double-spaced summary that reflects your assessment of your professional ethical development and your plans to enhance your development

with respect to (1) professional identity formation and (2) ethical reasoning and judgment. **This final, capstone assignment is the most important assignment**. It gives you the opportunity to synthesize what you have learned through lecture, the assessments, and the writing exercises, to understand your strengths and challenges, and to develop a plan for developing into an exemplary professional.

1. Professional Identity Formation

   Review the various documents in your portfolio—your Professional Identity Essay, your Self-assessment of that essay and feedback from the instructors, your response (and revisions) to the Kramer exercise, your responses to *Professional Expectations: Self Assessment and Reflection*. Reflect also on the lectures and small group discussion, designed to enhance your understanding of what society expects of its professionals.

   Summarize the new insights you have developed about what is expected of you as a future medical professional. Include challenges you see yourself as facing as you begin to understand and meet professional and societal expectations.

   Then study Kegan's descriptions as discussed in the *Evolving Professional Identity* and the examples you were given that illustrate the stages and transition phases. In writing:

   (a) Rate your level of identity formation. Support your judgment with statements from documents *you have written* (i.e., entries in your portfolio). Be sure to cite yourself, indicating which documents you are citing

   (b) Using the descriptions of the evolving professional identity, describe an area you believe you need to further develop. Indicate what you will do to enhance your development in this area. In addition, describe and specify the resources that you would use to aid you in this development (e.g., research and tell us what specific books, educational resources, etc., that you would use)

2. Ethical Reasoning and Judgment

   Summarize what you learned about the strategies you use when approaching complex social problems like those on the Defining Issues Test. What do the results tell you about your strategies compared with others in the profession? How did your group's scores compare with yours? What did you learn about your strategies?

   Then, reflect on the lecture notes, the readings, the Landry case discussion, and your analysis/revised analysis of it. What do you think you need to do to enhance your reasoning ability? How will you accomplish this?

Handing in the Assignment

This assignment is due one week after the completion of your course. Assignment should be emailed to the course instructor. The document should be typed as a Word document and double-spaced; please label the file with your last name. You are responsible for making sure that the assignment is received; an email acknowledging receipt of your assignment will be sent.

Appendix F

Learning Plan Grading Rubric

Name_____
Identity Formation

1. *Summarizes **new insights*** [*NOTE*: *Possible to check both 1 and 2*]

   _____ Shows a willingness to cite personal shortcomings in earlier understanding of expectations

      _____ Explains (in depth) new insights developed and cites sources of earlier understandings
      _____ Explains some insights in a general way, without particular examples
      _____ Simply repeats expectations as presented in class
      __ Does not summarize insights

2. *Discusses **challenges*** [*NOTE*: *Possible to check both 1 and 2*]
      _____ Challenges described flow from description of insights gained
      _____ Challenges described reflect an understanding of personal strengths and shortcomings
      _____ Does not list challenges with respect to the expectations of a professional

3. *Rates **level of identity formation***
      _____ Rating is described in terms of Kegan's descriptions of the Evolving Professional Identity
      _____ Does not rate level of identity
      _____ Rating illustrates misunderstanding of the task

4. Accuracy of rating of level of identity
      _____ Consistent with professor's judgment
      _____ Overestimates
      _____ Underestimates

5. ***Supports rating*** *with evidence from portfolio entries*
      _____ Shows exceptional insight in supporting the judgment
      _____ Shows good support for judgment
      _____ Offers support for judgment
      _____ Does not support judgment with evidence

6. *Has* a plan for developing his/her professional identity
      _____ Plan reflects personal research on possible options for enhancing abilities
      _____ Lists what he/she will do in a general way
      _____ Doesn't describe a plan

Ethical Reasoning and Judgment

7. *Summarizes **individual DIT results***
      _____ Summary reflects understanding of the data
      _____ Summary reflects misunderstanding of the data
      _____ Does not fully summarize DIT results

8. *Describes **individual performance in comparison with others**' ratings*
      _____ Compares self with others' ratings
      _____ Comparative judgments not included

9. *Describes **individual performance in comparison** with group/consensus performance*
      _____ Compares self with others' ratings
      _____ Comparative judgments not included

10. *Provides **data**-**based assessment** of his/her strengths and shortcomings in terms of ethical reasoning*
      _____ Assessment reflects insight about personal strengths and shortcomings
      _____ Assessment reflects some understanding of the data
      _____ Assessment reflects misunderstanding of the data
      _____ Does not provide data-based assessment

11. *Has **a plan for enhancing reasoning** development*
      _____ Plan reflects personal research on possible options for enhancing abilities
      _____ Lists what he/she will do in a general way
      _____ Doesn't describe a plan

Writing

Mechanics
_____ Observes rules of grammar, spelling, and sentence structure
_____ Minor errors are observed
_____ Numerous errors are observed

Length
_____ Appropriate length
_____ Could be edited for length without compromising content

Other

Reflects on his/her **involvement and choices in the cheating scandal?**
_____ Explicitly reflects on involvement, examines what defenses or lack of capacities were involved, reflects on relevance to his/her professional identity.
_____ Mentions his/her involvement but does not reflect on it extensively
_____ No significant explicit mention

Summary Judgment

_____ Exceptional Essay (Honors)
_____ Very Good Essay (High Pass)
_____ Good Essay (Pass)
_____ Did the assignment to minimally acceptable standards (Pass)
_____ Did not complete satisfactorily (Fail)
COMMENTS:

References

1. Bebeau MJ. Influencing the moral dimensions of dental practice. In: Rest JR, Narvaez D, editors. Moral development in the professions: psychology and applied ethics. Hillsdale, NJ: L. Erlbaum Associates; 1994. p. 121–46.
2. Bebeau MJ. Developing a well-reasoned response to a moral problem in professional ethics. Minneapolis, MN: University of Minnesota School of Dentistry. p. 104. http://www.ethicaldevelopment.ua.edu/wp-content/uploads/2011/03/Rev-2-Teaching-Assessment-Materials-Course-Designed-to-Facilitate-the-Development-of-Moral-Reasoning-and-Judgment.pdf. Accessed 1 July 2013.
3. Bebeau MJ. Evidence-based character development. In: Kenny N, Shelton W, editors. Lost virtue: professional character development in medical education, Vol 10 (advances in bioethics). Oxford: Elsevier Ltd.; 2006. p. 47–86.
4. Bebeau MJ, Born DO, Ozar DT. The development of a professional role orientation inventory. J Am Coll Dent. 1993;60(2):27–33. PMID: 8408994.
5. Bebeau MJ, Lewis P. Manual for assessing and promoting identity formation. Minneapolis, MN: Center for the Study of Ethical Development, University of Minnesota; 2003.
6. Bebeau MJ, Monson VE. Guided by theory, grounded in evidence: a way forward for professional ethics education. In: Narvaez D, Nucci L, editors. Handbook on moral and character education. Hillsdale, NJ: Routledge; 2008. p. 557–82.
7. Bebeau MJ, Monson VE. Professional identity formation and transformation across the life span. In: McKee A, Eraut M, editors. Learning trajectories, innovation and identity for professional development, Vol 7 (innovation and change in professional education). Dordrecht: Springer; 2012. p. 135–62.
8. Bebeau MJ, Thoma SJ. Moral motivation in different professions. In: Heinrichs K, Oser F, Lovat T, editors.

Handbook on moral motivation: theories, models, applications. Rotterdam: Sense; 2013. p. 475–98.

9. Bebeau MJ, Rest JR, Narvaez DF. Beyond the promise: a perspective for research in moral education. Educ Res. 1999;28(4):18–26.

10. Blasi A. Moral identity: its role in moral functioning. In: Kurtines WM, Gewirtz JL, editors. Morality, moral behavior, and moral development. New York, NY: Wiley; 1984. p. 129–39.

11. Blasi A. Moral understanding and the moral personality: the process of moral integration. 1991 (unpublished manuscript).

12. Eva KW, Reiter HI, Rosenfeld J, Norman GR. The ability of the multiple mini-interview to predict pre-clerkship performance in medical school. Acad Med. 2004;79(10 Suppl):S40–2. PMID: 15383385.

13. Freidson E. Professionalism: the third logic. Chicago, IL: University of Chicago Press; 2001. p. 250.

14. Gutmann A, Thompson D. Democracy and disagreement. Cambridge, MA: Belknap Press of Harvard University Press; 1996. p. 422.

15. Hall RH. The professions. In: Hall RH, editor. Occupations and the social structure. 2nd ed. Englewood Cliffs, NJ: Prentice-Hall; 1975. p. 63–135.

16. Kegan R. The evolving self: problem and process in human development. Cambridge, MA: Harvard University Press; 1982. p. 318.

17. Kegan R. In over our heads: the mental demands of modern life. Cambridge, MA: Harvard University Press; 1994. p. 396.

18. Kohlberg L. Essays on moral development, Vol 2, the psychology of moral development: the nature and validity of moral stages. San Francisco, CA: Harper Row; 1984. p. 729.

19. Mercuri JJ, Karia RJ, Egol KA, Zuckerman JD. Moral reasoning strategies of orthopaedic surgery residents. J Bone Joint Surg. 2013;95(6):e361–9. doi:10.2106/JBJS.K.01439.

20. Monson VE, Roehrich SA, Bebeau MJ. Developing civic capacity of professionals: A methodology for assessing identity. Paper presented at American Educational Research Association (AERA) Annual Meeting, 24–28 March 2008; New York, NY.

21. Papadakis MA, Loeser H, Healy K. Early detection and evaluation of professionalism deficiencies in medical students: one school's approach. Acad Med. 2001;76(11):1100–6. PMID: 11704509.

22. Rennie SC, Crosby JR. Students' perceptions of whistle blowing: implications for self-regulation. A questionnaire and focus group survey. Med Educ. 2002;36(2):173–9. PMID: 11869446.

23. Rest JR. Development in judging moral issues. Minneapolis, MN: University of Minnesota Press; 1979. p. 305.

24. Rest JR. Morality. In: Mussen PH, Flavell J, Markman EM, editors. Handbook of child psychology, Vol 3: cognitive development. 4th ed. New York, NY: Wiley; 1983. p. 556–629.

25. Rest JR, Narvaez D, Bebeau MJ, Thoma SJ. Post conventional moral thinking: a neo-Kohlbergian approach. Mahwah, NJ: Erlbaum; 1999. p. 229.

26. Rule JT, Bebeau MJ. Dentists who care: inspiring stories of professional commitment. Chicago, IL: Quintessence Publishing Co.; 2005. p. 176.

27. Shulman L. Foreword. In: Cooke M, Irby DM, O'Brien BC, editors. Educating physicians: a call for reform of medical school and residency. San Francisco, CA: Jossey-Bass; 2010. p. 304.

28. Siu E, Reiter HI. Overview: what's worked and what hasn't as a guide towards predictive admissions tool development. Adv Health Sci Educ Theory Pract. 2009;14(5):759–75. doi:10.1007/s10459-009-9160-8.

29. Thoma SJ. Research on the defining issues test. In: Killen M, Smetana JG, editors. Handbook of moral development. Mahwah, NJ: Erlbaum Associates; 2006. p. 67–92.

30. Twenge JM. Generational changes and their impact in the classroom: teaching generation me. Med Educ. 2009;43(5):398–405. doi:10.1111/j.1365-2923.2009.03310.x.

31. Welie JV. Is dentistry a profession? Part 1. Professionalism defined. J Can Dent Assoc. 2004;70(8):529–32. PMID: 15363212.

32. Welie JV. Is dentistry a profession? Part 2. The hallmarks of professionalism. J Can Dent Assoc. 2004;70(9):599–602. PMID: 15473943.

33. Welie JV. Is dentistry a profession? Part 3. Future challenges. J Can Dent Assoc. 2004;70(10):675–8. PMID: 15530264.

34. Bebeau MJ. Professional responsibility curriculum report. American College fellows serve as expert assessors. Teaching ethics at the University of Minnesota. J Am Coll Dent. 1983;50(2):20–3.

35. Bebeau MJ. The defining issues test and the four component model: contributions to professional education. J Moral Educ 2002;31(3):271–95.

36. Thoma SJ, Bebeau MJ. "Intermediate concepts" and the connection to moral education. Educational Psychol Rev 1999;11(4):343–60.

37. Bebeau MJ, Thoma SJ. Guide for DIT-2. Minneapolis: Center for the Study of Ethical Development, University of Minnesota, 2003.

38. Bebeau MJ, Thoma SJ. The impact of a dental ethics curriculum on moral reasoning. J Dent Educ. 1994;58(9):684–92.

39. You D, Bebeau MJ. Gender difference in ethical abilities of dental students. J Dent Educ. 2012;76(9):1137–49.

40. Bebeau MJ. Enhancing professionalism using ethics education as part of a dental licensure board's disciplinary action Part 1. An evidence-based process. J Am Coll Dent. 2009a;76(2):38–50.

41. Bebeau MJ. Enhancing professionalism using ethics education as part of a dental licensure board's disciplinary action Part 2. Evidence of the process. J Am Coll Dent. 2009b;76(3):32–45.

Part II

Contextual Factors

"You Said, I Heard": Speaking the Subtext in Interracial Conversations

Elizabeth Brondolo and Kristy-Lee Jean-Pierre

Abstract

Medical trainees who come from racial and ethnic minority communities and/or from economically and educationally disadvantaged backgrounds face unique external and internalized challenges that may lead to academic difficulties. Given there are still few faculty members from racial and ethnic minority communities, supervision is likely to be cross-racial. Using illustrative cases and their own personal experience as supervisor and student, the authors, the director of the Social Stress and Health Research Unit in the Department of Psychology of St. John's University and a PhD candidate in this program, review what is known about the dynamics of racism, its effects on mood, the pathways through which racism may affect academic performance. In particular, they discuss what is known about interracial communication styles, race-based stereotypes, and formation of schemas about self and others. They suggest strategies to combat the formation of judgments of which we are not even aware, to recognize stereotype threat and confirmation bias, and to address these issues within student and teacher relationships.

You are very concerned. This is your fourth meeting with ST for remediation after she failed the end of clerkship year OSCE. Getting her to discuss her performance

(continued)

difficulties openly has been unusually frustrating. You have been holding these meetings for years, and typically—once students are reassured that you are there to be helpful—they engage in the discussion about their performance in detail. The students usually participate in designing and committing to a remediation plan with energy and eagerness to "get this over with and move on." You are very proud of the fact that you are respected among your peers and students for your skill at creating

(continued)

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a "safe" and therapeutic relationship with struggling students. But this time, things are not working out the way you planned.

ST arrives 15 min late, beautifully dressed, respectful, polite, and emotionally composed. After the usual checking up and reviewing her remedial work, you decide to take a more confrontational approach. "ST, this is the fourth time we have met. You have done most of the things you have been asked to do, but I continue to be concerned that we haven't really talked about how these difficulties developed. It's hard for me to tell what you are thinking. I can't tell how motivated you are to address the issues."

After a long pause, she responds, angrily in a low whisper with her eyes cast down, "I don't know what you people want from me!"

You are confused and nervous, but the emotion behind ST's statement compels you to reach out. "What do you mean 'you people'?" As she haltingly answers your questions, you realize how isolated and alone this Black woman—an academic superstar in her community high school and college—has felt since coming to a medical school of mostly White and Asian students and faculty. You are also surprised, as a White woman, at how unprepared and unskilled you feel to handle this situation.

8.1   Introduction

Relationships with faculty are critical to success in all of graduate education [1]. These relationships help shape a young professional's identity and are the major medium through which professional norms are communicated. But medical students who are members of cultural or racial minority groups may face specific challenges in developing these professional relationships. These obstacles to the development of effective

interracial student–faculty relationships become especially problematic when a student is struggling with academic or performance problems.

Effective mentoring helps all students to identify barriers to professional achievement and generate the motivation they need to surmount those barriers and accomplish their goals. Students from ethnic or racial minority groups may face barriers that are a product of racial or ethnic discrimination (i.e., racism). Many of these barriers can be a function of past and ongoing difficulties gaining access to the opportunities and resources necessary to build skills and gain knowledge. But other barriers may be internal, a function of racism-related changes in the ways students think and feel about themselves, others, and the world around them.

The barriers facing students who have been exposed to discrimination are not always apparent to either the faculty member or the student [2]. Consequently, both faculty and students can find it hard to develop effective strategies to address the difficulties. In the first section of this chapter, we make these barriers more visible by reviewing ways in which racism at all levels can affect professional development. We examine the effects of cultural, institutional, interpersonal, and internalized racism on expectations and preparation for professional training. We do this to help faculty both understand and discuss the ways in which discrimination may be contributing to student's difficulties in performance.

Effective communication between students and faculty can help clarify these issues and strengthen motivation. But racism can also undermine this communication and the development of effective student–faculty relationships [3]. In the second section of the chapter, we examine the ways racism-related changes in the way we think and feel about ourselves and others can affect the development of the relationships necessary to support professional development.

To illustrate these issues, we apply these concepts to an examination of our own mentoring conversations and articulate the subtext of our conversations—the unspoken ideas and feelings that drive the interactions. We demonstrate that these subtexts reflect, in part, the effects of discrimination

on our thoughts and feelings about ourselves and other people. Because these unspoken ideas and unarticulated feelings can undermine our ability to communicate effectively, understanding this implicit subtext can help engage both faculty and students more fully in the process of professional development.

8.2 Racism Affects Professional Development

8.2.1 Student–Faculty Communication Is Integral to Effective Performance

Learning to communicate efficiently and effectively with faculty and other mentors is particularly critical in medical education [1]. Aspiring physicians must work with a wide variety of faculty (i.e., professors, residents, and attending physicians) in both academic and clinical settings. To maximize their chances of success in each training environment, students must quickly establish relationships with their faculty supervisors and understand the implicit rules governing these relationships. If successful, they will be more effective at addressing internal and external barriers to performance in the classroom and in the clinic.

Effective trainee–faculty communication is especially important and difficult in the clinical clerkships. The clerkship setting is less familiar than the classroom or laboratory; the pace of the workload is much more intense, and the consequences of error more severe. Despite the increase in demands, the social protocols for requesting information or guidance from faculty are often ambiguous, and they may vary substantially across faculty [1, 4].

The need for the rapid development of student–faculty relationships may be particularly challenging for students who are members of ethnic or racial minority groups. As a result of persistent and significant racial disparities at the faculty and leadership level in medical education [5], students who are members of ethnic or racial minority groups will receive most of their mentoring from individuals who do not share their cultural or racial background. This can be problematic, because culture and social class influence our understanding of the rules governing social communication, including our implicit and explicit knowledge about the ways to communicate with authority figures [6, 7].

Our culture and social class shape the contexts (i.e., including our family life, schooling, and early work experiences) in which we learn how to communicate respect and ambition, to resolve conflicts, and to ask for guidance or support [8]. Therefore, in interracial or cross-cultural interactions, students and faculty may have been exposed to different opportunities for learning these social rules and as a result interpret the social interactions differently. Because so many of these social rules are learned through experience rather than acquired as a function of explicit instruction [9], the lack of shared experiences may prevent both faculty and students from relying on an implicit understanding (i.e., on intuition) to repair unproductive interactions.

Cross-cultural or interracial communication can be particularly challenging when the student comes from an ethnic or racial group that has faced substantial stigmatization and discrimination [3, 10, 11]. From the student's perspective, a personal and group history of being targeted for discrimination can make the student wary of faculty members and reluctant to ask for guidance [12]. From the faculty member's perspective, a lack of familiarity with the student's experiences and concerns about appearing biased, as well as actual bias, can impair attempts to engage students and promote professional growth [13]. Unspoken concerns and frustrations can hinder or even obstruct the process of developing effective faculty–student relationships.

The overall aim of this chapter is to provide guidance for "speaking the subtext" in cross-race student–faculty interactions. It is a complex task, which involves recognizing the ways in which cultural and social contexts influence the meaning of interpersonal interactions. The interaction partners must thoughtfully articulate the concerns and frustrations that can emerge in cross-race communication. Directly communicating

previously unspoken anxieties, expectations, and frustrations can make student–faculty communication more effective and support the professional development of both the faculty and the student. (For more information on the nature of this implicit bias, it can be helpful to see the e-learning tutorial provided by the AAMC. See link below and #14 in reference list: [14] https://www.aamc.org/initiatives/leadership/recruitment/178420/unconscious_bias.html).

8.2.2 Conversations in Context: The Role of Social-Cognitive Processes

Each interpersonal exchange between a student and faculty member has the possibility of supporting academic growth. But the effectiveness of the exchange depends, in part, on how each person interprets their own and the other person's words, tone of voice, and facial expressions. For instance, a flat or skeptical expression can inhibit inquiry; a smile can engender trust. The explicit communication of racial bias will clearly undermine the exchange, but implicit or subtle acts of exclusion or rejection can also raise concerns about the possibility of race-based maltreatment [15].

8.2.3 Schema Theory

The interpretation of words and emotional cues are affected by the current exchange as well as past experiences. Research on social cognition provides a frame for our analysis of racism-related experiences. In particular, we focus on mental structures called schemas, defined as constellations of ideas, attitudes, and feelings that "develop through past experiences and guide the processing and interpretation of new information" [16].

Schemas are shaped by life experiences, including exposure to race/ethnicity-based prejudice and discrimination [17]. Student–faculty relationships, like all interpersonal relationships, are driven by schemas about the self, other people, and the world. These schemas influence the student's and the faculty's expectations, feelings,

and actions in the relationships and consequently may determine the degree to which this relationship can effectively support the student's motivation.

Schemas about the self include ideas and feelings about our self-worth and value to others [18–20]. Schemas about the world reflect ideas about the degree to which other people and the world in general are predictable, controllable, and threatening [21]. Relational schemas concern our interpersonal relationships [17].

These schemas shape our moment-to-moment perceptions of interpersonal communication [22]. They influence the focus of our attention, our perception of the meaning and implications of the communication, and our perception of our ability to resolve interpersonal communication problems. If our underlying schema reflects the belief that the world is threatening, we will be more likely to search for signs of potential danger and be more motivated to take protective action.

Schemas are shaped by both our unique and shared circumstances. Much of the formation of these schemas occurs in moment-to-moment interactions, as a routine part of daily life [23]. We develop these schemas through direct instruction, social modeling, and the experience of the positive and negative consequences of our actions and the actions of those we observe. The influence of these schemas on our actions, emotions, and information processing is largely outside conscious awareness [24–26].

8.2.4 The Effects of Racism on Achievement and the Development of Relational Schemas

Racism has been defined broadly as "the processes, norms, ideologies, and behaviors that perpetuate racial inequality" [27]. Racism at any level can create external barriers to achievement and shape interpersonal interactions. As a consequence, racism can have effects on the development of schemas about the self, other people, and the world at large. More information on these concepts can be found in Brondolo [2] and the

American Psychological Association's website for Division 38 [28] (http://www.health-psych.org/APADivision38Racism.cfm).

The barriers presented by each level of racism make it harder for students to achieve because these obstacles require that students have a much higher level of motivation. In the next sections, we identify levels of racism, examine their effects on schemas, and identify the increase in demands for motivation.

8.2.5 Cultural Racism

Ideas and attitudes about race and ethnicity are communicated through the media, including TV programs, movies, and newspapers [15]. The explicit and implicit messages that are conveyed about different racial/ethnic groups shape the schemas we hold about our group(s) and other groups [29]. The content of the messages influence our ideas about the group's values, beliefs, social behaviors, roles, and status. The sensory (i.e., visual and auditory) components of the messages provide the images and elicit the emotions we attach to the ideas [30–32]. This combination of intellectual, sensory, and emotional communication drives the development of the schemas we hold about our own group and that of others [33].

Cultural racism results when these messages communicate negative stereotypes about a particular group (e.g., Asians are subservient; Blacks are angry and lazy) [33]. Research supports the notion that these media communications strengthen existing stereotypes and shift attitudes about members of those groups [34, 35] even when the viewers are unaware of the effects [26]. Media communications of these stereotypes can shape the way in which members of the stereotyped group think of themselves [36]. These stereotypes can influence performance evaluations [37]. These stereotypes can distort both the faculty member's and the student's expectations of the student's professional competencies. Without active critical thinking about the information presented by the media, these stereotypes may prove difficult to adjust [38].

8.2.6 Institutional Racism

Cultural racism can create a desire among some groups for social distance from members of stigmatized groups. Consequently, individuals may consciously or unconsciously avoid contact with members of other groups, promoting racial segregation [2, 39]. Residential racial segregation further contributes to the exacerbation and maintenance of racial disparities in achievement [40, 41].

Residential segregation changes how we learn about others and ourselves [42]. In racially/ethnically diverse communities, we absorb knowledge about the qualities associated with other ethnic or racial groups in much the same way as we learn about our own—through actual and observed interactions with individuals from diverse backgrounds. These face-to-face interactions provide an opportunity to challenge biased beliefs, allowing for more elaborate and deeper understanding of specific individuals. In contrast, residents of segregated communities must depend on the media for much of their knowledge about members of other groups. These media portrayals can heighten attention to visually salient phenotypic or cultural characteristics and can strengthen stereotypes.

For some groups, most notably Black, Latino, and Native American individuals, residential racial segregation can be confounded by neighborhood poverty [43]. In segregated low-income communities, there may be fewer opportunities to gain preprofessional social or academic skills. There may be fewer individuals who serve as accessible professional role models or who can provide technical or instrumental support. Students may face greater demands to provide emotional or practical support to other family members, and their attention and energy may be diverted from pursuing academic goals.

The developmental experiences that students (and faculty) have in their residential environments shape their schemas about themselves and the larger world. Students from neighborhoods with few social and practical resources may hold less developed and potentially more negative schemas about their own competence and their ability

to negotiate the larger world. In contrast, in an environment high in opportunity and supportive resources, students have the ability to develop more detailed and more realistic appraisals of their own interests and competencies. With greater knowledge about their capacities under a wide variety of situations, students can perceive a broader range of activities as challenges, rather than threats.

8.2.7 Individual or Interpersonal Racism

On an individual level, we may experience race-based maltreatment during many different types of social exchanges. In the academic and professional environment, race-based maltreatment can be manifested as social exclusion, as preferential work assignments, or as very negative or stigmatizing work evaluations. Sometimes the motivation for an episode of maltreatment is clear and the racial bias is obvious. But often, the maltreatment is subtle and determining the cause is more difficult [44]. We make judgments based on small variations in social behavior, including the nonverbal behaviors used to communicate acceptance and rejection.

Social psychologists have reported that even when we are overtly included in a group, we may not trust this acceptance, if the small nonverbal cues of inclusion are not fully communicated [45]. For example, a faculty member might smile warmly to a student from the same racial/ethnic background but offer a slightly briefer smile to a student from a different background. These split-second interactions can cause students to worry about their standing and begin to mistrust the possibility of being included and valued in future contact [45]. Even when we are not aware of their impact, these social interactions have the potential to affect the degree of positivity in our schemas about others and ourselves [26].

8.2.8 Internalized Racism

When we are exposed to cultural, institutional, and interpersonal racism, we can inadvertently internalize racial or ethnic bias and (consciously or unconsciously) accept negative attitudes towards our own groups [46, 47]. We may develop schemas about our own group that incorporate widely disseminated negative stereotypes. For example, in one of his stand-up comedy routines, Chris Rock, the comedian, talked about moving to an upscale neighborhood in New Jersey. He joked about keeping his bag packed, because he does not believe that it is true that he lives in such a nice neighborhood [48]. In this interview on National Public Radio, he explicitly talks about internalizing the stereotype that Black people do not live in affluent suburbs [49].

We engage in this type of self-stereotyping when we worry that we possess characteristics consistent with stereotypes associated with our group [50]. Students may internalize certain stereotypes about themselves and as a consequence develop schemas about their potential strengths and limitations that are based on these stereotypes and not on their actual abilities. Understanding the potential stereotypes that are commonly associated with particular groups can help identify the types of self-stereotyping that different students might experience.

Even when we do not accept the negative stereotypes communicated about our group, we may still be aware that other people may hold prejudicial beliefs. This awareness can elicit stereotype threat and drive stereotype confirmation concern. *Stereotype threat* occurs when we are in situations in which we are primed to activate stereotype-related schemas about our group [51]. For example, researchers have demonstrated that when African American students are primed to be aware of their race before they perform an academic task, this priming can elicit stereotypes threat (i.e., activate negative schemas about Black individuals and intelligence) and impair performance on academic tasks [52].

Stereotype confirmation concern refers to unease that one might exhibit behavior or attitudes that confirm other people's stereotypes or negative beliefs about your own group. For example, a Latino medical student might worry that asking for help with an assignment will confirm stereotypes that Latinos are not independent [13].

Stereotype threat concerns can be elicited by a wide range of behaviors and values that have been portrayed as consistent with their ethnic or racial group, from choice of foods to choice of profession.

8.2.9 Summary: The Consequences of Racism on Motivation

When students do not meet expectations (i.e., fail to perform or to communicate their needs), faculty members may perceive them as lazy, unmotivated, or rejecting. They make these value judgments because they base their evaluation of the demands of the situation on their own experiences and those of the students they have worked with in the past. They calculate the amount of motivation and skill needed for the situation based on these demands and their own access to the internal and external resources needed to meet these demands. The faculty member's estimates may be reasonable approximations of the student's experiences in many cases, particularly when the students and the faculty member have a common cultural, racial, or economic background.

But as medical education draws students from increasingly diverse backgrounds, the faculty may need to adjust their estimations of the level of effort and the type of training needed to achieve professional goals. The ability to adjust these estimates is often hampered because many of the barriers are not always clearly visible to the faculty member or to the student. In this chapter, we have focused on making visible the particular issues facing students from stigmatized racial or ethnic minority groups. As we have seen, racism on every level may create additional external and internal barriers that require students to exert more effort and undermine their ability to quickly establish effective relationships with faculty or others who can help.

As a consequence of cultural racism, students will require additional motivation and effort to develop self and group schemas that are independent of biased portrayals in the media. Limited cultural models of effective cross-race communication can undermine both the students' and fac-

ulty members' confidence in their ability to overcome communication difficulties. Students will need to evaluate the degree to which the feedback they receive from faculty is affected by the faculty member's internalized stereotypes about their group.

Residential segregation can limit social and professional opportunities and leave students with gaps in foundational technical and interpersonal skills. Students will require extra motivation to gain these skills, in addition to those taught in the normal medical education curriculum. Learning these skills is more difficult when there are fewer opportunities to have access to professionals who can provide advice and guidance in informal settings (i.e., settings in which help can be obtained without fear of professional repercussions). Fears about identifying these gaps (i.e., fears of stereotype confirmation concern) can raise further barriers to seeking supervision. To overcome these barriers, students will need sustained motivation and encouragement.

In some cases students may not recognize or be aware of these gaps. There is some evidence that race-based ostracism can decrease self-awareness in the area of health behavior [53] and is likely to do the same in academic settings. Changes in self-awareness may make students less aware of their need for guidance and support and consequently decrease motivation when it is most needed.

Residential segregation can also heighten the pressure to succeed. Some students may choose to study medicine because it is one of the few professional career paths about which they (and their families) have some knowledge. There are visible and respected role models for a medical career for almost every race or ethnic group. Each obstacle to success along this one path may feel more serious, in part, because they do not have well-developed ideas about other possible career pathways.

Throughout their training, students are likely to have interpersonal encounters with peers, patients, and faculty that are affected by explicit or implicit racial/ethnic bias [54]. They will need extra motivation and emotional resourcefulness to learn to negotiate interactions that evoke concerns about race-related maltreatment and to manage the

emotions evoked by these interactions. But without access to faculty members from similar backgrounds, students may not have access to mentors who have themselves experienced these difficulties and can provide guidance based on intimate knowledge of the setting and the situation.

8.2.10 Racism and Negative Mood

It would be hard to overestimate the effects of racism on negative mood [44]. At the moment it occurs, race-based maltreatment can elicit negative emotions. Stereotype threat concerns can leave students feeling anxious and defensive. But over time, racism can foster negative schemas about the self and the world at large, creating a cycle that intensifies negative emotion. The research literature is clear that negative schemas facilitate depression [55]. And depression itself is a barrier to action: we require much more motivation to perform when we are depressed [56].

As important, negative moods make negative feedback more threatening. Negative moods partly mediate the link between race-based maltreatment and stereotype threat concerns [52]. Identifying difficulties can feel increasingly harmful, if the student is already feeling uncomfortable and insecure. The faculty may avoid providing corrective feedback if they sense the student's emotional concerns. And as a consequence, students become less able to overcome future obstacles.

8.2.11 Cross-Race Supervision Is Cognitively and Emotionally Demanding

XW was referred for remediation after failing the psychiatry clerkship because of poor attendance, unprofessional behavior, and poor performance on the shelf exam. This failure was surprising and unanticipated. XW had been an academically successful and well-liked student, active in the

(continued)

student government, musical theater club, and student orchestra. Born in China and raised in San Francisco by garment workers, he speaks unaccented English in a distinctly southern California dialect. After years of consistently high academic performance all through public school, he followed his two older sisters to medical school. Because he speaks Chinese fluently, he reports that throughout his clerkship year, he was pulled into patient rooms by patients and their family members and the healthcare team to help with communication tasks. On psychiatry, because of his language ability and expressed desire to help, he was assigned to care for three very challenging Chinese-speaking Asian patients. After the first week of the rotation, his faculty supervisors praised his work and acknowledged his professionalism. Three weeks later they noticed that he started missing sessions with his patients, he began giving confusing explanations of his behavior, and he was often unavailable when paged. The psychiatry clerkship director called him repeatedly asking XW what the problems were and offering help. But despite these efforts and for the first time in his life, XW continued to do the minimum work and failed the rotation.

What happened? Multiple factors may be at work here: racism at all levels may interact with the unexpected demands of working with severely ill psychiatric patients. Cultural racism can influence both the faculty member's and the student's expectations about XW's technical skills and his stress tolerance. There are widespread beliefs that all Asian individuals are highly competent and have a strong work ethic. XW's supervisors might have assumed that his competence in his basic science programs would also extend to clinical competence in psychiatry. But interactions with very disturbed psychiatric patients can present highly ambiguous and challenging clinical

circumstances. XW may have been unaware of the technical complexity of the task he was facing. XW's supervisors may not have been attuned to his increasing stress, because they may have unconsciously been holding stereotypes about the emotional experiences of Asian individuals (i.e., these stereotypes suggest that Asians, being "inscrutable" and "alien," experience emotions differently than do Caucasians. In turn, this situation may have elicited some stereotype threat concerns for XW. He may have internalized some of the beliefs and expectations about Asian individuals' competence and stoicism and been afraid to acknowledge both his confusion about how to handle the clinical situation and his own distress. Without an understanding of the degree to which his difficulties and his emotions were normative, he may have assumed he was failing and would shame himself and other members of his ethnic group.

Why was XW "in over his head"? Because there were very few faculty members who were competent in speaking other languages or communicating across a complex cultural divide, XW, like many ethnic minority students, was assigned high-level responsibilities without access to an effective role model. His ethnic pride and his sense of loyalty might have made it very difficult for him to turn away any patient in need. He needed his supervisors to help him determine how much responsibility he could reasonably accept. And yet his needs were largely invisible to himself and to his faculty supervisors.

As this example suggests, racism increases the cognitive and emotional demands on faculty members as well as students. The faculty will need a wide range of competencies to develop the professional capacity of students from a broad range of cultural and social backgrounds. They must consider not only the information the students need to master as part of the medical education curriculum but also the additional training that may be required if students have not had the opportunities to learn prerequisite skills. The faculty may need to provide instruction in a broader range of social and communication skills to address cultural and social class

variations in interpersonal behavior. Faculty may need to consider that the supervision process itself might be perceived negatively by individuals with different experiences of justice or equality [57].

As is the case for students, the faculty may also face significant barriers in developing the skills and emotional resources needed to negotiate cross-race interactions. Many faculty members are unfamiliar with the norms associated with social and cultural backgrounds different from their own [58]. They may not yet developed first-hand or intuitive knowledge about the challenges facing students and the implications of those challenges for supervision. They may be reluctant to intervene when they perceive a gap between their perceptions of the student's difficulties and the student's awareness of his or her own performance [59]. Faculty members may need to ask for assistance in initiating and sustaining anxiety-producing conversations about culture, race, and disparities. Asking for help, particularly in managing cross-race interactions, may seem daunting.

8.2.12 Objectives for Sect. 8.2

1. Recognize that you may not immediately or intuitively understand the historical and personal experiences of individuals who come from groups different from your own.
2. Recognize the stereotypes that are commonly communicated about different groups, including your own.
3. Accept that you may not be aware of your own biases, just as students may not be aware of theirs.
4. Recognize that racial bias is not a fixed characteristic. Stereotypes can be challenged.
5. Recognize the effects of social disparities on mood, including symptoms of anxiety and depression.
6. Estimate the ways in which race or culture-related maltreatment may raise barriers to achievement and change the level of motivation the student needs to perform.

8.3 Speaking the Subtext: Applying the Science to an Analysis of Our Own Conversations

In the next section of the chapter, we provide examples that illustrate the ways in which racism at all levels can be able to create barriers to communication. We illustrate the ways in which speaking the subtext—making these implicit barriers explicit—can reduce these barriers. We include excerpts of the authors' (EB and KLJP) mentoring conversations. The conversations were painful but also interesting and beneficial. Our goal in sharing our own experiences is to increase both students' and faculty members' willingness to tolerate the stress that comes from communicating to reap the benefits.

EB is a Caucasian professor, and KLJP is an African American doctoral level graduate student. We describe the conversations from the student's perspective, first recounting the teacher's comments ("You said") and then the student's interpretation ("I heard"). Next, we describe the subtext of the conversation, providing an analysis of the ways in which racial and ethnic discrimination shape the perception of meaning and the emotions of both teacher and student. "Speaking the subtext" allowed us to make conscious and explicit the feelings and ideas that influenced our conversations, even when they were not initially apparent to us. Although the setting in which these exchanges took place is a psychology doctoral program, similar underlying issues have been identified in our experiences training medical residents.

We deconstructed these conversations in a series of emails and in the context of supervision meetings. We hoped that openly acknowledging our difficulties could help us to understand each other better. We also reviewed these sentences in more public contexts including our lab meetings. These group discussions provided students from a broad range of ethnic backgrounds an opportunity to contribute their own interpretations of the conversations and provide their own "subtext" to

similar conversations with other mentors. They offered some support for KLJP and made the exercise a little less personal.

KLJP is working on her master's thesis in clinical psychology. EB asks her to rewrite a draft she submitted and to meet to analyze some data. KLJP never responds and several months go by.

> KLJP says: *"I was trying to complete a second draft of my master's thesis. I have already completed a first draft, but I was told (by EB) that it was not academic enough. Now I am afraid to write another draft or even attempt it. My anxiety and avoidance levels are at about an 8 or 9 on a scale from 1 to 10. It is virtually impossible for me to rewrite my thesis."*

What happened? Why did the communication go awry? Why was KLJP unable to move forward with her academic work? In the next sections we examine social-cognitive processes that influence student–faculty communication and students' ability to negotiate barriers to academic success.

To facilitate our ability to resolve our difficulties and reduce the barriers to KLJP's efforts to get her work done, we decided KLJP should write out the sentences she heard EB say in our earlier discussions and to write what these sentences meant to her (see Table 8.1).

8.3.1 The Pervasive Power of Stereotypes

As we reviewed the "You said, I heard" sentences, we noticed that each sentence evoked a specific common negative stereotype about African Americans. Stereotype-related feedback may elicit student's concerns that the feedback is a function of racial bias on the part of the teacher.

This conversation confirmed findings from our prior research. We asked participants to provide

Table 8.1 Writing the subtext

Supervisor said	Student heard	Potential stereotypes evoked
"You need to learn how to …" "You must learn how to…" and "You still have to learn how to"	Sounds condescending You don't take me seriously as a competent person	Low intelligence—low knowledge
"Think logically, think as if you were me"	"Your way of thinking is flawed or inadequate. Your reasoning skills are subpar"	Lazy, primitive, shiftless
"Your paper does not sound academic"	What you wrote sounds ignorant	Low-life

narratives of negative interactions, some of which were discriminatory, and some which were not. An analysis of these stories revealed that participants experience negative interpersonal behavior as implicit or covert racism (i.e., as motivated by racial bias, if the behavior evokes stereotypes), even if there is no explicit mention of race [60].

8.3.2 Why It Was So Difficult for KLJP to Get the Work Done? The Effects of Potential Interpersonal Racism on Mood, Information Processing, and Motivation

All negative feedback can raise anxiety. However, exposure to negative feedback that includes references to stereotypes about the student's ethnic/racial group may present particular difficulties in an academic context. The student must evaluate the mentor's comments and determine if the feedback is specific to the current situation or reflective of the mentor's conscious or unconscious bias [61]. This strains cognitive resources and can distract from academic work. Students develop expertise in making these evaluations, but even with practice, the additional cognitive

demands increase the level of motivation required to complete academic tasks. As KLJP points out:

> KLJP: *"Normally, (when I have to get down to work) I only have to overcome my own natural apathy and procrastination, but in this situation the motivation I need to get over the anxiety and doubt increases exponentially. Because (when I hear things like Dr. B. is saying), I don't know if I am encountering racial bias or not. There are so many more thoughts to combat and fears to quell. So the motivation I need to get started on my work is much, much greater.*
>
> *Other students may need about a '5' level of motivation (on a scale from 1 to 10). They may be anxious about their work, but I think it seems more manageable for them.*
>
> *For me, it seems insurmountable. Now I need so much more motivation—way beyond level '10'. Why? Because I heard, 'You're stupid and incapable of writing.' I imagine Dr. B thinks I should be brighter. I worry that I am not, and this ignorance is shown through my writing. Whenever my writing is criticized, it brings up these feeling of inadequacy and worries about being an outsider."*

Giving negative (and positive) feedback is part of the educational process. For all students, negative feedback about academic performance can engender concerns about their own intelligence and academic competence. For Latino(a) and African American students, this can present particular difficulties, since one negative stereotype about African Americans and some groups of Latino(a)s is that they are less intelligent and less hardworking than other racial or ethnic groups. Therefore, for some African American and Latino(a) students, stereotype threat concerns can include concerns that any evidence of difficulty will confirm stereotypes about their incompetence.

And consequently, these concerns can lead to worries that if they ask for help they will be discounted in academic settings [62].

For many groups of Asian Americans, the stereotypes include the idea that they are more intelligent and hardworking than members of other groups [63, 64]. Consequently, they may not receive as much feedback or be provided with as much support or guidance as students from other groups. Asian students can experience concerns that they will be a disappointment to their race/ethnic group if they need help or have difficulty completing their work. Failure to conform to the model minority stereotype can elicit shame and engender anxiety and depression.

After reflecting on KLJP's concerns and identifying the stereotypes that could be evoked by her comments, EB wrote to KLJP:

> *If I stopped to think about what stereotypes could be elicited by my comments, I would have taken the time to clarify my intent and message. I see that my comments are not thoughtful. When I say 'Think like me…', I am actually asking you to use a strategy for thinking that we demonstrated in class. But this is not apparent. Because of the shorthand way I am expressing it, my sentences can easily be seen as communicating that you and your way of thinking is not acceptable.*
>
> *I could have said that your writing on your thesis needs to be improved, but it is my responsibility to see that the feedback is clear and specific to the paper in front of us, and not perceived as a comment on your general intelligence or somehow attributable to your race.*
>
> *I want to reduce your anxiety and the extraneous cognitive demands, because I want you to be able to get to work on your paper. The topic is very interesting, and I want to see what you find in the data. It is in both of our best interests for me to ask what you are thinking and to clarify the communication.*

After this discussion, we could more easily identify when feedback might elicit concerns about stereotypes. As we moved forward in our writing together, we made sure it was very clear why the feedback was being given in the particular circumstance. The goal was for KLJP to focus on her writing and not on worries about EB's motivations or their relationship.

8.3.3 Identifying the Moments When Things Are Going Wrong: Avoidance of Negative Emotions

Avoidance is a common problem. Sometimes the avoidance is obvious. Students/trainees fail to hand in assignments or fail to attend meetings, classes, or clinical assignments. Other times the avoidance is subtle. Students/trainees agree to complete work, look motivated, promise to do better, but still don't perform. Or they may perform, but won't have the types of sustained direct communication necessary to demonstrate their thinking and move it to a more sophisticated level necessary to achieve excellence.

Sometimes people use nonverbal behavior, not direct expression, to communicate their feelings. They may avoid eye contact, shift in their seat, or move farther back. These more subtle kinds of avoidance may indicate that students are trying to avoid experiencing anger or shame or fear.

The desire to avoid confrontation or feelings of fear or shame is understandable. But it limits professional development. Professional growth requires confronting a host of negative emotions. We need to learn to use the negative emotions we feel when we fail; these feelings are powerful motivators of learning.

In interracial interactions, both parties may have difficulties recognizing or decoding emotions [65, 66], and consequently, they cannot use these emotional cues as a guide through interpersonal difficulties. Racial prejudice may lead us to assume that members of other groups experience emotions differently. If we hold stereotypes of Asians as less emotional or Latino(as) as more emotional, we can forget that all students

experience anger, fear, and shame even if we do not know how to easily gauge the intensity of their emotional reactions.

Therefore, anticipating situations in which students may be avoiding or struggling with negative feelings can be helpful. It can be useful to directly ask students: (a) "How do you usually handle different kinds of negative feedback?" and (b) "How do you recognize when you are not able to prevent negative emotions from blocking your engagement and performance?" Proactively addressing these issues can also help students and faculty recognize when communication has gone awry or when students are struggling with race-related blocks to progress.

8.3.4 Warmth and Competence: When Different Stereotype Confirmation Concerns Get in the Way

It is very important to KLJP that she is perceived as competent. EB wants to be perceived as competent, but it is also important to her that she is perceived as caring. These competing stereotype confirmation concerns undermine their communication. Why does this happen? Fiske and colleagues have proposed a model for considering stereotypes of different groups [67]. She notes that we categorize both individuals and groups along two key dimensions: warmth and competence. Commonly, Whites are rated as competent, but not warm; in contrast, Latino(a)s are seen as warm, but less competent.

Empirical research suggests that cross-race interactions can produce anxiety in part because stereotype confirmation concerns can create competing subtexts for the conversations. White individuals may be trying to maximize the appearance of warmth; Latino(a) and African American individuals may be trying to maximize the appearance of competence. These different motivations can drive the conversations in competing directions [68].

It may be worth noting that some of these same concerns about warmth/competence arise in workplace communication between men and women.

As EB notes, *"As a woman working in psychophysiology, a field initially dominated by men, I wanted to be careful not to be too personal. I wanted to be seen as competent. My early career experiences as a minority because of my gender made me concerned about stereotype threats in much the same way Black and Latino(a) students are. I wanted to be taken seriously."*

Here is another example, which illustrates how differences in the failure to recognize stereotype-related concerns can elicit difficulties in communication. In this case, the faculty member's actions were intended to communicate concern for student well-being, but they also communicated other unintended messages as well.

Sara is a White medicine resident supervising Janine, a psychiatry intern rotating on the medicine service for the first time. Sara also supervises Nadia, a medicine intern 3 months into the year. Janine is Black, and Nadia is White. It becomes obvious to everyone that Sara is giving the less challenging cases to Janine and all the "great cases" to Nadia (who doesn't appreciate all the extra work). Janine begins to worry about being stigmatized. She wonders: "Sara thinks I'm lazy, dumb, and incompetent. Not only am I Black, but I am a psychiatry intern."

Janine spent a few days avoiding both Nadia and Sara as an attempt to deal with her own growing embarrassment and Nadia's growing resentment. Finally, Janine gets up the nerve to ask Sara to redistribute the caseload. Sara is flummoxed by the request, but says "I am so glad you came to me…I was concerned you didn't think I was teaching you enough. You have been kind of quiet. But you are doing such a good job with your patients; I was going to ask you to take on a few more cases. I didn't want to overwhelm you. Nadia has been at this longer after all."

In this case the resident was thinking that she wanted to make sure the interns had the necessary training experience to handle the cases and was afraid of overloading the psychiatry intern. She is very concerned about appearing sensitive and caring to the Black resident, not overwhelming her. On the other hand, Janine wants to be perceived as competent and capable. Because Sara did not see that the intern might have perceived the task assignments as discriminatory, she did not understand why the intern was distant and tense whenever they talked. She did not understand that the intern felt as if she were being singled out and belittled deliberately, possibly as a function of racial bias. Once lines of communication were opened and assumptions examined, the tension dissipated and the team was able to work well together caring for their patients.

8.3.5 An "Outsider Status": The Costs of Institutional Racism

KLJP worries that she lacks certain academic skills. She is concerned that her lack of skills will confirm the stereotype that will be perceived as less intelligent, less hardworking, and less cultured than others because she is Black.

How does this develop? Institutionalized racism, including racial residential segregation, often has a wide range of effects on social and academic skills. Students whose early education experiences were relatively poor or who do not come from homes in which the parents have higher levels of education may, in fact, lack certain academic and social skills. However, as any teacher can attest, students from affluent backgrounds can also have significant academic gaps. Academic and social skills can be taught. But students may have residual concerns about the unspoken social knowledge (i.e., knowledge about culturally appropriate manners) that they did not acquire. They may be ashamed that they will be perpetual outsiders, never able to master these skills.

Institutional racism can create gaps in social and cultural access that undermine conscious and unconscious knowledge of the rituals and norms of elite society. The perception (or misperception)

of these gaps can drive avoidance. We see this in KLJP's story.

> KLJP says: *"Do all the other students know how to correctly compose a thesis? They must. I think I am the only one that is so stupid that I can't. Even with evidence to the contrary, I can't get past these feelings of inadequacy and fear. So I can't write.*
>
> *Why? As far back as my grammar and high school education, I believe that the teachers did not push us as hard as they did White children in better schools. Our work seemed remedial in comparison. I knew someone who went to a better school in a better district, and the books they were reading and their assignments were more advanced.*
>
> *It seems that White students are given more room to be creative and think critically about things from an early age. They are exposed to more. Schools that serve inner city kids tend to focus on the basics. You learn just enough to get you by and free thinking is not encouraged.*
>
> *I remember my high school teacher urging me to apply to Howard University and saying that inner city schools teach their kids how to be employees and staff while White schools teacher their students how to be managers. They spelled out the idea that inner city school socializes Black children not to be free thinkers but to stay in line.*
>
> *So with writing assignments, I start to wonder: if because I did not become a free thinker or true critical thinker until Howard (University), am I behind White students who have been critically thinking and held to a higher standard since birth? In comparison it feels like in K-12 the bar was set so low. If some people have been training since birth and I just started training vigorously in college, of course I am going to have to some anxiety. I worry that skills are ingrained in them, but these skills are new and somewhat foreign to me."*

One more example to consider:

During your initial conversation with ST you ask about an incident, noted in her surgical clerkship evaluation, where she had come "woefully unprepared for a MSMM conference." She sits very still and says nothing. Medical Student Morbidity and Mortality rounds on the Surgery Clerkship are a grand tradition at your school that sends excitement and fear through the class. A student is chosen by the chief residents 2 days before to present a patient case where something "went wrong" and the chairman leads a discussion of the case by questioning the student. While the discussion can get rough, it is assumed by the clerkship leadership that it is highly educational for students and is an important aspect of the professionalism, accountability, and patient safety curriculum. In general, students who "survive" MSMM admit to having learned a great deal, as do their peers who usually stay up all night helping the chosen student prepare. ST was the first student in her group to be selected for this task, because she had cared for a patient who died from a complication of surgery.

Later that day you ask: "How did you feel about the MSMM rounds? Usually students are terrified at having to present and prepare the whole night before…"

ST shrugs.

"How did you prepare?" you ask.

ST says: "I did what I always do… I wrote out the case, I presented it the way I was taught… I didn't know I was supposed to be able to answer all those questions…"

"ST, didn't the chief resident offer to help you? That is his job…" you ask.

"He said I should come by, but I didn't know what to ask him. So I just went home and read up about the case," she offered.

Knowing that there is a lot of "buzz" in the dorm the night before these conferences

(continued)

and that there is a tradition of the senior students helping prep the clinical clerks, you ask,

"What advice did you get from the other clerkship students in the dorm?"

"I live at home," she offers plainly.

8.3.6   Why Can't We Just Talk About It? Different Groups, Different Relational Schemas, and Different Rules About Authority and Assertiveness

It may not be enough to simply ask students to express any concerns they have if they feel they are being mistreated or if they are having any difficulties. The meaning of the request to communicate concerns in a direct or assertive manner may be perceived differently by members of different ethnic groups. For example, EB asked KLJP to be more *assertive* (i.e., specifically, to feel free to address any concerns she had about EB's communication of negative stereotypes and to demand more time and attention for supervision). KLJP agreed, but she felt extremely uncomfortable. She would allow weeks to pass without any communication about the status of her work.

When we discussed her progress, she disclosed that she had not been working on her paper. She reported that even though she did not understand the required structure, she did not want to bother me with questions. She couldn't find a way to ask for the help she needed.

As we were having this conversation, another student chimed in. DS is an orthodox Jewish student. He empathized with KLJP's concerns. He said he had many concerns about being perceived as "pushy or greedy or self-aggrandizing," negative stereotypes that are associated with being Jewish. This made him wary about being too assertive with teachers. As a Jewish person, EB could identify with DS's concerns. She told both students that she has had the same stereotype confirmation concerns herself (i.e., worries about being seen as bossy or self-promoting).

DS said that when EB gave him permission to be "pushy" and to ask persistent questions, he felt relieved and was able to be appropriately assertive. EB and DS share a common culture. They could empathize about their shared fears. DS had reason to believe EB was sincere in her willingness to tolerate assertiveness.

But KLJP pointed out that this was not as easy for her. To act in a more direct way and communicate her needs or concerns, she must challenge deeply ingrained images of African American women and face two types of stereotype confirmation concerns. She worries she will be seen as an "uppity aggressive Black woman." But she also worries about appearing ignorant if she needs help and cannot figure out her work on her own. She worries she can't win if she asks and can't grow if she doesn't, so she feels paralyzed.

> *After months of avoiding the remediation team with serious consequences for her academic standing, ST finally tells you she could not complete her work on time because was struggling with very serious family problems and was working full-time to support her mother. When you ask her why she never told you of her struggles, ST said she did not want to seem like "just another poor Black person who can't keep up." You pick up the phone, call the dean, and try to negotiate a personal leave of absence for ST rather than the immediate dismissal that was planned after your conversation with her.*

8.3.7 The Role of Racial Identity

Racial identity, which can be seen as schemas about the self and one's ethnic or racial group, also plays a role in shaping reactions to requests for communication. We experience anxiety and may avoid action when we are asked to act in ways that are not consistent with our group or individual identity [69]. As we discussed the role of racial identity, it became clear that aspects of

KLJP's identity as a Black woman sometimes conflict with the demands of her training.

Developing both research and clinical skills requires collaboration. Through the process of collaboration, students can develop the ability to recognize gaps in knowledge and skills and identify the appropriate people to ask for help. Learning to work with others and benefit from the experience of older students and faculty is part of the process of developing as a scholar and clinician.

In contrast, many of the characteristics KLJP associates with her identity as a Black woman are strongly connected to the idea of self-sufficiency and self-denial. The subtext of these messages is that Black women are not supposed to have needs of their own. Pride in independence is a strong positive value. But it can be undermining if reaching out for help is seen as dangerous, weak, or inconsistent with one's identity.

Similarly, respect for elders is also a good value. But in professional training, this value can prevent students from developing or expressing independent judgment or expressing concerns about difficulties. From a training perspective, we need to recognize how identity-related concerns can undermine our ability to make students both more independent and more collaborative.

Students can wonder if the direct expression of concerns or problems is safe or likely to provide any benefits. *Students can reasonably assume that the faculty has some stereotype confirmation concern about appearing cruel or biased.* Students may worry that the request to be direct could be seen simply as a way of assuaging the faculty's anxiety. Speaking the subtext openly and repeatedly can provide an opportunity to address the multiple layers of mistrust that might contribute to problems in communications.

8.3.8 Addressing Interpersonal Racism: "Getting to Know You"

One underlying theme KLJP and many other students have articulated is the concern that their value as a person and their intellectual capabilities may not be perceived if their social behavior is not

as polished or writing skills are not as proficient as their White peers. KLJP has expressed the idea that without a full knowledge of her as a person, she will be judged as deficient based on her phenotype or perceived academic deficiencies.

She writes:

> *"So when it comes to working with White faculty members, I think they may feel that if I do not know something it is because I am not capable of learning, because I am Black. I don't believe they will understand that I wasn't given the vast exposure that the White kids were. Even though I believe that Howard (University) helped a great deal, I still feel uncomfortable about writing. The belief that 'there is some microknowledge that I am not aware of' gets activated when it comes to writing assigned by some White faculty members. I think I understand that I don't have to be perfect, but if I make too many mistakes, then I won't be judged as KLJP (smart, but needs corrections just like everyone), I will be seen as an indigent black girl (i.e., stupid and undeserving of being a graduate student).*
>
> *What's worse is that instead of asking Dr. B. for help, I stay quiet because I don't want her to know that I am dumb. I want to impress her with how smart I am. But how can I, if I have to ask her how to appropriately draft this paper?"*

KLJP writes further about the differences that occur when she interacts with a Black faculty member, but in particular a Black faculty member who has taken the time to get to know her.

> *"If she (EB) was RW, I would have no problem asking for help because RW would understand that I am not stupid, I just never did this before. She won't secretly be thinking 'What an idiot!' Plus, I don't have to worry*

> *about confirming the stereotype with her because RW knows it is not true anyway, but Dr. B doesn't know that. I'm sure she will connect my inability to do this with the color of my skin and I can't have that. So, I'll just have to figure it out on my own, so that Dr. B. thinks that I am the exception or even better. She can see that Blacks are just as smart."*

How do we get to know each other as people? KLJP and RW simply spend time talking in the lab. Recently, EB observed an African American colleague, SS, work with one of her graduate students, who is White. As they started working, SS stopped and made sure she asked her student about her weekend. The student responded and they conversed about the student's children and the upcoming vacation. Then SS and her student got down to work.

It is clear that this type of interaction has some benefits, but it also raises some concerns for EB. EB writes,

> *"I don't think I have ever asked anyone about their weekend. It just isn't my style. I get to know people through their work, and they get to know me. I was 'raised' in a work environment in which too much closeness could be perceived as crossing boundaries. And I have always been a working mother; I just am too pressed for time to spend much time on conversations that are not work-related."*

Without speaking her own "subtext" and clarifying her history, EB's lack of communication could lead KLJP to think she is uninterested or unwilling to devote time to get to know her. Speaking the subtext in the context of the work conversations can help students and faculty get to know each other. By observing evidence of avoidance and signs of distress, faculty members can identify opportunities for direct communication. If they ask questions about beliefs and fears and

barriers to progress, they have the opportunity to get to know the student as a person as they address the professional development issues.

8.3.9 It Is a Process: Making the Commitment

Interracial communication difficulties are not resolved in a single conversation. It takes time and continued effort. After many different and more positive interactions, EB and KLJP hit another bump. EB made an offhand comment to KLJP during the conversation. KLJP was complaining about one of her student's writing, and EB pointed out that she made similar mistakes. Later that week in a writing meeting, EB recognized that KLJP was very uncomfortable, she was moving about in her seat, not making eye contact, and the tension in her jaw was apparent. They discussed their difficulties and EB asked KLJP to write out the subtext of the conversation:

"When the time for our meeting came, I decided not to say anything. I was tired of talking about how hurt I was or that I was offended. I felt like a baby, like I was too sensitive. Because I did not want to address the issue, the meeting was tense and the communication was edgy. If she tried to elaborate on something, I would tell her that I was fully capable of understanding it. I just felt like I had to make clear to her that I was not stupid and I was just as good as anyone else.

By the end of the meeting, she asked me what was up and I told her. She apologized, and I just wanted to leave. I was so annoyed that we had to talk about this again. I was annoyed because I felt that no matter what she says, I have to be able to finish my thesis so that I can get my degree. If she is the person who is responsible for guiding me during this journey, I should be able to feel as though (1) she would not intentionally hurt my feelings or self-esteem and (2) that I can talk to her about things that may get in the way of my success."

In the context of the discussion, EB said to KLJP that they were "*in a committed relationship*" and that the work was what mattered. EB said, "*We can have as many conversations as we needed to in order to develop trust.*"

Following this conversation, KLJP wrote a different set of "You said, I heard" sentences.

"The turning point for me came when she in essence said that no matter the problems, we are in 'a committed relationship.' What I heard was, 'If we have to have difficult conversations every time, I will still be here. I will not abandon you or decide that this is too much to deal with. If you are willing to work, I am too.'

This was reassuring to me. It made clear that this is going to be hard, but she is committed to seeing this through. She also emphasized that I am allowed to have a problem and voice it. There is no need to be concerned that if I state how I feel, that she will refuse to address it or even work with me anymore.

Another thing Dr. B. emphasized was that the most important thing was the work—the patients and the writing. What I heard was 'At the end of the day, after all the emotions are dealt with, the work still needs to be done.' It actually makes completing the work easier. It has been made clear that nothing will get in the way of the work being completed. I am coming to understand that if I feel that my work is not up to par, she will correct it and we will move forward. The focus is not on my perceived deficits but rather on the completion of this task."

EB wrote:

"I used a metaphor—referring to a committed relationship—to communicate my ideas about the supervision process. What I meant when I said we were in a 'committed relationship' was that I was

(continued)

committed to working though any difficulties in our relationship. In some cases the commitment might be for a semester or for a practicum rotation, but no matter what the context is, the commitment is there. I accepted that communication might be harder for me with some students than with others, but every student's education is my professional responsibility. My development as a professional and as a person was dependent on our growth together."

The situation is complicated. And the interpersonal communication required to support professional achievement requires commitment. This commitment from faculty is needed to help students maintain motivation to persist in the hard work that is involved both in mastering the technical material and processing the many moments of negative emotion that accompany all types of professional development. In "Appendix" we offer a rubric for analyzing and remediating difficulties that exist in these relationships.

Racism can affect many facets of the processes involved in achievement. In some cases, there are actual gaps in either technical or social knowledge that are a function of residential or academic segregation and its effects on access to educational and professional opportunities. But in other cases, the gaps are perceived to be much more salient than they really are. Sometimes, the faculty member's racial bias will influence their perception of the magnitude or importance of students' mistakes. In other cases, students anticipate making mistakes or catastrophize the consequences as a function of self-stereotyping or stereotype threat concerns.

More problematic than any particular skill deficit are the emotional consequences of these gaps. When students feel stigmatized, they are likely to become angry. Unaddressed anger and resentment can damage the relationships necessary for professional development. When students stigmatize themselves, they are likely to feel afraid, ashamed, and defensive. Shame and fear leads to avoidance, and avoidance will undermine relationships and disrupt professional

growth. Learning to recognize these emotions and use them to identify the underlying sources of stigmatization and disempowerment can be a powerful and meaningful experience for both the student and faculty.

When we have limited understanding of the lives and social experiences of members of different race groups, we may be less likely to challenge (often unconscious) beliefs that members of other groups experience and perceive interpersonal relationships in a different way. We may worry that we do not share the same social reality and cannot communicate across this divide. But speaking the subtext allows us to put our social realities "on the table." And once they are made explicit and clearly understood, then our social realities can converge. We can create the opportunity to work together to solve any existing difficulties.

Medical students are prepared for complex diagnostic and clinical challenges. They are learning to be alert to signs and symptoms and to generate hypotheses about the factors which precipitate the symptom presentation. When the potential diagnosis involves identifying factors contributing to racial disparities in achievement, the task of identifying the causative factors can be challenging. It can be useful to consider the ways in which discrimination at any level can influence access to opportunity and support; change schemas about the self, others, and the world at large; and subsequently undermine the student's ability to benefit from or seek out supervision. This knowledge can guide the supervision. When faculty are committed to learning to recognize and point out signs of difficulty, and when they are willing to speak the subtext and ask students to do the same, they can develop professional relationships that can reduce racial disparities in achievement.

8.3.10 Objectives for Sect. 8.3

1. Recognize when feedback has the potential to communicate racial bias.
2. Recognize signs of avoidance: lack of eye contact, apparent distraction, physical distancing, signs of physical agitation, failure to hand in

work, and repeated agreement with priorities but no change in behavior.

3. Identify the ways stereotypes may affect the communication rules for different ethnic and racial groups.
4. Identify your communication goals and stereotype confirmation concerns: Do you want to be seen as competent, warm? How anxious are you about not being perceived as warm (or on the contrary, how anxious are you about feeling that you don't want to be perceived as "easy" or gullible)?

Appendix A: Putting It All Together (A Rubric for Analyzing and Remediating Difficulties and Presenting Problems)

There can be many examples of presenting problems that may be influenced by race-based maltreatment (e.g., the student does not complete assignments, the student does not ask for guidance with difficult problems, the student appears uncomfortable in conversation or avoids communication with the faculty, or the student's behavior is not professional (i.e., too informal/too formal, too inhibited/too aggressive, unprepared/too much preparation and detail, cannot acknowledge mistakes/over-apologizes)).

Provide a Clear Description of the Difficulty (Identifying Signs and Symptoms)

It can be most helpful to formulate the problem in specific measurable terms (e.g., "*You are 3 weeks behind in handing in this report and have not incorporated the suggestions we made an earlier draft.*" or "*You don't seem to make eye contact or volunteer information when we are discussing cases.*" If appropriate, make explicit the point that you are not making comments about the student's overall competence, but are concerned about this specific piece of behavior.

Identify Risk Factors

- *Proactively identify stereotype concerns*: Think about the stereotypes that might be communicated by the particular feedback (e.g., Are you communicating about the student's trustworthiness, intelligence, class?). Can you clarify that you are speaking about a specific issue and not making general statements about the individual?
- *Pay attention to nonverbal expressions of distress*: Watch for signs of avoidance or agitation and scan for evidence of depression.
- *Gather information about the history of barriers and resources*: What are the cultural messages communicated about the student's racial or ethnic group? What kinds of environmental supports does this student have? What kinds of social supports does this student have? Is there a reason to suspect that the student is concerned about or does not have experience with social rules or communication or writing rules? How do the resources available and the perceived or real barriers change the amount of motivation needed?

Interventions

Consider speaking or writing the subtext to clarify the messages you are giving and receiving. Write down the sentences you spoke when you gave feedback. Ask the student to provide information about their perceptions of the sentences and the emotional meaning of the sentences to the student. You can ask them about their professional identity and their concerns about stereotype threat. You might inquire about their beliefs about independence or their fears of being perceived as ignorant or incompetent if they ask for assistance.

- *Provide models:* Models can help students make improvements independently. If students are worried about not understanding the subtle details of communication, provide models of writing. If students are not expressing themselves clearly or handling themselves professionally, try

role playing exercises. Examples of exercises are included in the next section.

- *Anticipate potential barriers:* Ask if the student is facing any of the common barriers to academic achievement (i.e., confusion about writing, outside demands, family responsibilities).
- *Speak the subtext yourself*: The faculty can provide explicit comments on their own concerns about these conversations, communicating their stereotype threat concerns. It can be helpful for faculty to discuss their worries about the costs and benefits of having personal conversations with students. You can address the nature of the "commitment" students can expect from faculty.

Appendix B: Applying the Knowledge: Remediation Ideas and Exercises

Here are some exercises to increase understanding of the effects of cultural, institutional, and interpersonal racism. In each exercise we are attempting to increase the ability to speak the subtext—to communicate the ways in which social contexts and interpersonal interactions can undermine professional development.

Exercises to Increase Understanding of Cultural Stereotypes

Discussing the stereotypes that are frequently communicated in the media can help students and faculty become aware of the ways their beliefs may have been influenced by cultural communications.

In Table 8.1 we provided examples from our own experience of some common stereotypes about African Americans, and that KLJP internalized. Awareness of stereotypes for other racial and ethnic groups (not to mention other groups of diversity) may help you anticipate when students might have concerns about implicit bias and take the time to clarify your feedback, increasing its detail and specificity and avoiding more global judgments. If you see a student become uneasy

(i.e., avoid eye contact, provide brief answers, or become overtly agitated), you can ask questions about their concerns about implicit stereotyping.

To increase awareness of stereotypes, students and faculty members can identify different movies or TV shows that portray stereotypes and others that present alternative models. It can be useful for faculty and students to hear how different people from different ethnic or racial groups perceive the characters portrayed.

Exercises to Understand the Effects of Institutional Racism/Residential Segregation on Access to Resources

Medicine can be a dynastic profession (i.e., there are often many generations of physicians in a family). But students who are the first in their family to go to college or graduate school may not have these resources available. Asking or finding out about educational and opportunities and informal support networks can be useful. You can ask: "Who do you turn to rehearse tough conversations with faculty or patients—someone who can give you the inside scoop?"

Some students may not have someone to explain tough course material or difficult clinical situations. For those students, it can be valuable to provide a low-stakes mentor—someone who can give them "behind the scenes" advice and information. This person can provide the knowledge and confidence that can bridge the gap between the student and a high-stakes faculty (i.e., a clerkship faculty). More senior students or program administrators can sometimes serve as "low-stakes" support.

Exercises to Improve Recognition of the Effects of Racism on Motivation

Think about the neighborhoods you lived in and the schools you attended when you were growing up. What cultural messages did you receive about the characteristics associated with you and your ethnic group? Did those messages increase or decrease your motivation to work hard? What

physical and social resources were available that helped you feel successful (i.e., what kinds of strength did you gain from your family, neighbors, or relatives or your teachers, mentors, or spiritual leaders?) What kinds of opportunities to develop new skills were available in your early years (i.e., after-school programs, recreation areas, enrichment programs)? Did the resources help you think you could succeed? Did they make it easier to be motivated to try? On the other hand, what obstacles slowed down your ability to succeed (e.g., interpersonal conflict, lack of resources)? How much motivation did you need to overcome these barriers? Most people can "turn on the steam" or find the motivation to work intensely for a short period (i.e., sprint to the finish line of a course), but it is much harder if extra motivation is needed for longer periods of time.

Exercises to Improve Recognition of Subtle Interpersonal Maltreatment

We all communicate much more information through our nonverbal behavior than through the content of our words. Our nonverbal behavior may be communicating message we do not realize or intend. Research from social psychologists indicates that African Americans can make reasonably accurate judgments about someone's implicit racial bias, based on a 30 s brief of routine conversation. Increasing awareness of the emotional message we communicate can help us improve interpersonal communication.

One exercise includes brief role plays to help students identify the emotions communicated by even minor variations in nonverbal behavior. This exercise is an adaptation of work we have done in different employee groups [70, 71]. It can be especially helpful if students first engage in the exercise with no faculty present. Then when they are more familiar with the process, students can repeat the exercises with both faculty and students participating.

Participants sit in a circle. The assignment is for each person to take a turn approaching a "faculty" (i.e., initially a student playing a

faculty) who sits in the center of the circle. One at a time students take turns asking the "faculty" a single question (e.g., "How or when do I …. (some procedure)?"). Each student repeats the approach and the question three or four times. The first time the student asks in his or her normal manner. Then group members suggest minor changes to either body language (e.g., move more quickly, raise your shoulders, furrow your brow, avoid eye contact) or tone of voice (e.g., speak more softly (loudly), speak more quickly/slowly, clip or emphasize consonants). Group members make recommendations about body language or tone of voice rather than how they want the emotional message to change (i.e., they say "raise your shoulder" rather than "look defensive"). This helps keep the focus on deciding emotional cues and recognizing the ways small but significant changes in body language change emotional tone.

Each time the student asks the question, group members give feedback on the degree to which the student is communicating confidence vs. fear, openness vs. defensiveness, and respect vs. disrespect or arrogance.

When a faculty member joins the group, the faculty member can role play giving one sentence worth of feedback (i.e., essentially "Don't do that, do this.") to a student sitting in the center of the circle. They repeat this feedback with modifications of body language and tone of voice. Students and other faculty can give feedback about the emotional communication of the faculty (approachable (open and interested) vs. rejecting (closed and annoyed), respectful vs. condescending or patronizing, patient vs. impatient).

At the end of the exercise, participants can identify different specific pieces of body language and tone (i.e., muscle tension or forceful consonants) that change the communication of emotion.

This exercise can be particularly helpful for students who are foreign-born or from cultures, which have very different rules about the ways in which women vs. men should communicate respect. For example, in some cultures women sometimes communicate respect by speaking softly, lowering their head slightly, keeping

distance from the other person, and keeping their gestures close to their body. However, these same nonverbal behaviors can communicate subservience to people of other cultures and therefore undermine authority.

Writing the Subtext

You can use a chart that has columns we present above ("You said, I heard" stereotypes). You might want to add another column in which the faculty clarifies his or her intent and establishes a more effective method of communicating his or her ideas.

A more informal way is also possible. For example, when critiquing academic work, it is also possible to say something like "Teachers and students often misunderstand each other. I want to make sure that we are on the same page. The feedback I am giving you is about your specific paper at this point in time. I am not communicating anything more general about you as a person. And I want to make sure that we can discuss any concerns you might have that I am acting on any biases I might have (about your gender or age or racial or ethnic group)."

Asking the student to write out the comments he/she heard and his or her interpretation of the subtext can help identify the barriers to performance. The upside of this strategy is that it is extremely clear and provides the student with an opportunity to take the time to write out his/her thoughts. The downside is that it is scary for mentors to see the student's anger and distress. These exercises can also make the student nervous about anonymous retaliation. Therefore, this activity requires a fair amount of trust. However, the faculty member opens the door and asks the questions, there can be a change in the ability to remediate future difficulties.

For KLJP and EB, these conversations were simultaneously very painful and also very interesting and moving. Ultimately, they permitted us to be more completely ourselves and strengthened both our individual identities and the mentor–mentee relationship.

Writing Remediation Exercises

We use two strategies to improve writing in students, both of which are time-consuming. When we are preparing papers for publication or presentation (and every word has to be correct), we sit together and read aloud. The papers are edited jointly and in real time. This provides an opportunity to articulate the rules of grammar or to describe the nuances of choosing just the right word. If everyone is taking turns reading and writing (and listening), many of the subtle features of general writing and professional communication, in particular, are communicated naturally (e.g., this sentence would be clearer if we followed the rule of parallel construction).

Another strategy involves sharing three sample papers (or case presentations) from different students (with the names removed) and allowing students to see models and identify areas in need of improvement. Students often believe that they are the only person having any difficulties writing, and they often do not have good models for the specific type of writing they need to accomplish. Providing models (with comments about the strengths and weakness of the work) can help normalize the experience of needing help and underscore how much time and effort it takes to develop clear prose.

Template for "You said, I heard" exercises

"You said…." the student's recollection of the faculty member's feedback or comments	"I heard…" what the feedback meant to the student	Any stereotypes evoked by the comments or feedback	What is the intent of the feedback that is given to the student
–	–	–	–
–	–	–	–
–	–	–	–
–	–	–	–

References

1. Kilminster SM, Jolly BC. Effective supervision in clinical practice settings: a literature review. Med Educ. 2000;34(10):827–40.
2. Brondolo E, Libretti M, Rivera L, Walsemann KM. Racism and social capital: the implications for social

and physical well-being. J Soc Issues. 2012;68(2): 358–84. doi:10.1111/j.1540-4560.2012.01752.x.

3. Richeson JA, Shelton JN. Intergroup dyadic interactions. In: Dovidio JF, Hewstone M, Glick P, Esses VM, editors. The SAGE handbook of prejudice, stereotyping and discrimination. London: Sage; 2010. p. 276–93.

4. Stern DT. In search of the informal curriculum: when and where professional values are taught. Acad Med. 1998;73(10 Suppl):S28–30. PubMed PMID: 9795643.

5. Association of American Medical Colleges. Diversity in medical education: facts & figures 2012 [Internet]. Washington, DC: Association of American Medical Colleges; 2012 [cited 2013 June 10]. p. 163. Available from: https://members.aamc.org/eweb/upload/Diversity%20in%20Medical%20Education_Facts%20and%20Figures%202012.pdf.

6. Perloff RM, Bonder B, Ray GB, Ray EB, Siminoff LA. Doctor-patient communication, cultural competence, and minority health. Am Behav Sci. 2006;49(6):835–52. doi:10.1177/0002764205283804.

7. Rawls AW. "Race" as an interaction order phenomenon: W.E.B. DuBois's "double consciousness" thesis revisited. Soc Theory. 2000;18:241–74.

8. Lustig MW, Koester J. Intercultural competence: interpersonal communication across cultures. 1st ed. New York: HarperCollins College Publishers; 1993. p. 346.

9. Jost JT, Ledgerwood A, Hardin CD. Shared reality, system justification, and the relational basis of ideological beliefs. Soc Personal Psychol Compass. 2008;2(1): 171–86. doi:10.1111/j.1751-9004.2007.00056.x.

10. Robinson TL. The intersections of dominant discourses across race, gender, and other identities. J Couns Dev. 1999;77(1):73–9. doi:10.1002/j.1556-6676.1999.tb02423.x.

11. Terrell F, Terrell SL. An inventory to measure cultural mistrust among Blacks. West J of Black Studies Stud. 1981;5(3):180–4.

12. Petersen LA. Racial differences in trust: reaping what we have sown? Med Care. 2002;40(2):81–4. PubMed PMID: 11802080.

13. Contrada RJ, Ashmore RD, Gary ML, Coups E, Egeth JD, Sewell A, Ewell K, Goyal TM, Chasse V. Measures of ethnicity-related stress: psychometric properties, ethnic group differences, and associations with well-being. J Appl Soc Psychol. 2001;31(9):1775–820. doi:10.1111/j.1559-1816.2001.tb00205.x.

14. Association of American Medical Colleges. E-learning seminar: what you don't know: the science of unconscious bias and what to do about it in the search and recruitment process [Internet]. Washington, DC: Association of American Medical Colleges; 1995–2013 [cited 2013 June 10]. Available from: https://www.aamc.org/members/leadership/catalog/178420/unconscious_bias.html.

15. Brondolo E, Brady ver Halen N, Libby DJ, Pencille M. Racism as a psychosocial stressor. In: Baum A, Contrada RJ, editors. The handbook of stress science:

biology, psychology, and health. New York: Springer; 2011. p. 167–84.

16. Mor N, Inbar M. Rejection sensitivity and schema-congruent information processing biases. J Res Pers. 2009;43(3):392–8. doi:10.1016/j.jrp.2009.01.001.

17. Baldwin MW. Relational schemas: research into social cognitive aspects of interpersonal experience. In: Cervone D, Shoda Y, editors. The coherence of personality. Social-cognitive bases of consistency, variability, and organization. New York: Guilford; 1999. p. 127–54.

18. Markus H. Self-schemata and processing information about the self. J Pers Soc Psychol. 1977;35(2):63–78. doi:10.1037/0022-3514.35.2.63.

19. Stein KF, Corte C. The identity impairment model: a longitudinal study of self-schemas as predictors of disordered eating behaviors. Nurs Res. 2008;57(3):182–90. doi:10.1097/01.NNR.0000319494.21628.08.

20. Westen D, Heim A. Disturbances of self and identity in personality disorders. In: Leary M, Tangney J, editors. Handbook of self and identity. New York: Guilford; 2003. p. 643–64.

21. Foa EB, Ehlers A, Clark DM, Tolin DF, Orsillo SM. The posttraumatic cognitions inventory (PTCI): development and validation. Psychol Assess. 1999; 11(3):303–14.

22. Markus H, Nurius P. Possible selves. Am Psychol. 1986;41(9):954–69. doi:10.1037/0003-066X.41.9.954.

23. Eberhart NK, Auerbach RP, Bigda-Peyton J, Abela JRZ. Maladaptive schemas and depression: tests of stress generation and diathesis-stress models. J Soc Clin Psychol. 2011;30(1):75–104. doi:10.1521/jscp.2011.30.1.75.

24. Richeson JA, Shelton JN. Brief report: thin slices of racial bias. J Nonverbal Behav. 2005;29(1):75–86. doi:10.1007/s10919-004-0890-2.

25. Richeson JA, Shelton JN. Negotiating interracial interactions: costs, consequences and possibilities. Curr Dir Psychol Sci. 2007;16(6):316–20. doi:10.1111/j.1467-8721.2007.00528.x.

26. Weisbuch M, Pauker K, Ambady N. The subtle transmission of race bias via televised nonverbal behavior. Science. 2009;326(5960):1711–4. doi:10.1126/science.1178358.

27. Gee GC, Ro A, Shariff-Marco S, Chae D. Racial discrimination and health among Asian Americans: evidence, assessment, and directions for future research. Epidemiol Rev. 2009;31(1):130–51. doi:10.1093/epirev/mxp009.

28. American Psychological Association. APA Division 38: diversity—health disparities [Internet]. Ashland, VA: APA; 2013 [cited 2013 June 10]. Available from: http://www.health-psych.org/APADivision38Racism.cfm.

29. Sue DW, Capodilupo CM, Torino GC, Bucceri JM, Holder AM, Nadal KL, Esquilin M. Racial microaggressions in everyday life: implications for clinical practice. Am Psychol. 2007;62(4):271–86. PubMed PMID: 17516773.

30. Dalisay F, Tan A. Assimilation and contrast effects in the priming of Asian American and African American stereotypes through TV exposure. J Mass Commun Q. 2009;86(1):7–22. doi:10.1177/107769900908600102.

31. Gilens M. Race and poverty in America: public misperceptions and the American news media. Public Opin Q. 1996;60(4):515–41. doi:10.1086/297771.

32. Mastro DE, Kopacz MA. Media representations of race, prototypicality, and policy reasoning: an application of self-categorization theory. J Broadcast Electron Media. 2006;50(2):305–22. doi:10.1207/s15506878jobem5002_8.

33. Dovidio JF. Psychology. Racial bias, unspoken but heard. Science. 2009;326(5960):1641–2.

34. Dixon TL, Linz D. Overrepresentation and underrepresentation of African Americans and Latinos as lawbreakers on television news. J Commun. 2000;50(2):131–54. doi:10.1111/j.1460-2466.2000.tb02845.x.

35. Mastro DE, Lapinski MK, Kopacz MK, Behm-Morawitz E. The influence of exposure to depictions of race and crime in TV news on viewer's social judgments. J Broadcast Electron Media. 2009;53(4):615–35. doi:10.1080/08838150903310534.

36. Chen GM, Williams S, Hendrickson N, Chen L. Male mammies: a social-comparison perspective on how exaggeratedly overweight media portrayals of Mmadea, Rasputia, and Big Momma affect how black women feel about themselves. Mass Commun Soc. 2012;15(1):115–35. doi:10.1080/15205436.2011.569682.

37. Stone J, Perry ZW, Darley JM. "White men can't jump": evidence for the perceptual confirmation of racial stereotypes following a basketball game. Basic Appl Soc Psychol. 1997;19(3):291–306. doi:10.1207/15324839751036977.

38. Tosi P. Thinking about what we see: using media literacy to examine images of African Americans on television. Black Hist Bull. 2001;74(1):13–20.

39. Emerson MO, Yancey G, Chai KJ. Does race matter in residential segregation? Exploring the preferences of White Americans. Am Soc Rev. 2001;66(6):922–35.

40. Nathan A. The effects of racial and extracurricular friendship diversity on achievement. Worchester, MA: Department of Economics College of the Holy Cross; 2008. Holy Cross working paper series, No. 08-16.

41. Walsemann KM, Bell BA. Integrated schools, segregated curriculum: effects of within-school segregation on adolescent health behaviors and educational aspirations. Am J Public Health. 2010;100(9):1687–95. doi:10.2105/AJPH.2009.179424.

42. Cutrona CE, Russell DW, Hessling RM, Brown PA, Murry V. Direct and moderating effects of community context on the psychological well-being of African American women. J Pers Soc Psychol. 2000;79(6):1088–101. PubMed PMID: 11138756.

43. Williams DR, Jackson PB. Social sources of racial disparities in health. Health Aff. 2005;24(2):325–34. PubMed PMID: 15757915.

44. Brondolo E, Brady ver Halen N, Pencille M, Beatty D, Contrada RJ. Coping with racism: a selective review of the literature and a theoretical and methodological critique. J Behav Med. 2009;32(1):64–88. doi:10.1007/s10865-008-9193-0.

45. Williams KD. Ostracism. Annu Rev Psychol. 2007;58:425–52. doi:10.1146/annurev.psych.58.110405.085641.

46. Taylor J, Grundy C. Measuring black internalization of white stereotypes about African Americans: the Nadanolitization scale. In: Jones RL, editor. The handbook of tests and measurements for black populations, vol. 2. Hampton, VA: Cobb & Henry; 1996. p. 217–26.

47. Williams DR, Williams-Morris R. Racism and mental health: the African American experience. Ethn Health. 2000;5(4–3):243–68. doi:10.1080/13557850200009356.

48. Rock C. Chris rock: kill the messenger. [Film] Directed by: Callner M. New York: HBO Video; 2008.

49. Rock C. Interviewed by: Gross T. Chris Rock on the funny business of finding success. Fresh Air. NPR WNYC 93.9 FM/830 AM; 8 Aug 2012, 4 pm.

50. Simon B, Hamilton DL. Self-stereotyping and social context: the effects of relative in-group size and in-group status. J Pers Soc Psychol. 1994;66(4):699–711. doi:10.1037/0022-3514.66.4.699.

51. Steele CM, Aronson J. Stereotype threat and the intellectual test performance of African Americans. J Pers Soc Psychol. 1995;69(5):797–811. PubMed PMID: 7473032.

52. Kit KA, Tuokko HA, Mateer CA. A review of the stereotype threat literature and its application in a neurological population. Neuropsychol Rev. 2008;18(2):132–48. doi:10.1007/s11065-008-9059-9.

53. Inzlicht M, McKay L, Aronson J. Stigma as ego depletion: how being the target of prejudice affects self-control. Psychol Sci. 2006;17(3):262–9. PUBMED PMID: 1650768.

54. Mendoza-Denton R, Downey G, Purdie VJ, Davis A, Pietrzak J. Sensitivity to status-based rejection: implications for African American students' college experience. J Pers Soc Psychol. 2002;83(4):896–918. PubMed PMID: 12374443.

55. Halvorsen M, Wang CE, Eisemann M, Waterloo K. Dysfunctional attitudes and early maladaptive schemas as predictors of depression: a 9-year follow-up study. Cognit Ther Res. 2010;34:368–79. doi:10.1007/s10608-009-9259-5.

56. Beck AT. Depression: clinical, experimental, and theoretical aspects. New York: Harper and Row; 1967. p. 370.

57. Brown MT, Landrum-Brown J. Counselor supervision: cross-cultural perspectives. In: Ponterott JG, Casas JM, Suzuki LA, Alexander CM, editors. Handbook of multicultural counseling. Thousand Oaks, CA: Sage; 1995. p. 263–86.

58. Duan C, Roehlke H. A descriptive "Snapshot" of cross-racial supervision in university counseling center internships. J Multicult Cons Devel. 2001;29(2):131–46. doi:10.1002/j.2161-1912.2001.tb00510.x.

59. Goldstein NE, Concato J, Bradley EH, O'Leary JR, Fried TR. Doctor-patient communication about prognosis: the influence of race and financial status. J Palliat Med. 2005;8(5):998–1004. PubMed PMID: 16238512.

60. Pencile M, Murani K, Agosta J, Ashraf A, Brondolo E. Situational determinants that effect attributions to racism. Presentation at: Student Citation Award Presentation. Annual Meeting of the Society for Behavioral Medicine, Washington, DC; 2001.

61. Constantine MG, Sue DW. Perceptions of racial microaggressions among black supervisees in cross-racial dyads. J Couns Psychol. 2007;54(2):142–53. doi:10.1037/0022-0167.54.2.142.

62. Smith JL. Understanding the process of stereotype threat: a review of mediational variables and new performance goal directions. Educ Psychol Rev. 2004;16(3):177–206.doi:10.1023/B:EDPR.0000034020.20317.89.

63. Sue S, Sue DW, Sue L, Takeuchi DT. Psychopathology among Asian Americans: a model minority? Cult Divers Ment Health. 1995;1(1):39–51. PubMed PMID: 9225547.

64. Suyemoto KL, Kim GS, Tanabe M, Tawa J, Day SC. Challenging the model minority myth: engaging Asian American students in research on Asian American college student experiences. New Dir Inst Res. 2009;2009(142):41–55. doi:10.1002/ir.295.

65. Elfenbein HA, Ambady N. Is there an in-group advantage in emotion recognition? Psychol Bull. 2002;128(2):243–9. PubMed PMID: 11931518.

66. Elfenbein HA, Ambady N. When familiarity breeds accuracy: cultural exposure and facial emotion recognition. J Pers Soc Psychol. 2003;85(2):276–90. PubMed PMID: 12916570.

67. Fiske ST, Cuddy AJ, Glick P, Xu J. A Model of (often mixed) stereotype content: competence and warmth respectively follow from perceived status and competition. J Pers Soc Psychol. 2002;82(6):878–902. PubMed PMID: 12051578.

68. Bergsieker HB, Shelton JN, Richeson JA. To be liked versus respected: divergent goals in interracial interactions. J Pers Soc Psychol. 2010;99(2):248–64. doi:10.1037/a0018474.

69. Oyserman D, Lee SW. Does culture influence what and how we think? Effects of priming individualism and collectivism. Psychol Bull. 2008;134(2):311–42. doi:10.1037/0033-2909.134.2.311.

70. Brondolo E, Eichler BF, Taravella J. A tailored anger management program for reducing citizen complaints against traffic agents. J Police Crim Psychol. 2003;18(2):1–11. doi:10.1007/BF02807242.

71. Brondolo E, DiGuiseppe R, Tafrate RC. Exposure-based treatment for anger problems: focus on the feeling. Cogn Behav Pract. 1997;4(1):75–98. doi:10.1016/S1077-7229(97)80013-2.

Learning Differences and Medical Education

9

Paul B. Yellin

Abstract

Learning disabilities are the most common type of disability among medical students and may first present as a problem during medical school or later impairing achievement and clinical performance. In this chapter, the author provides a conceptual framework and vocabulary for understanding and describing the wide range of normal variations in cognitive abilities of all students, including medical students. He describes how learning challenges can be viewed through two lenses, each with their own therapeutic implications. When a medical trainee has a diagnosed learning disability, defined as a discrepancy between intellectual capacity and actual performance, the Americans with Disabilities Act (ADA) requires the educational institution to provide the student with reasonable accommodations. Further recent understanding of neurocognitive function and plasticity has provided a new lens through which to view relative learning weaknesses. In this view, individuals have a neurocognitive profile, which in certain educational contexts may produce learning challenges. Based on his extensive experience working with professional students who struggle with learning, the author provides advice on identifying effective strategies to assist these students in becoming excellent physicians.

*"Although decisions about disabilities and accommodations must be made on a case-by-case basis, determinations… should be underscored by some fundamental vision of what it means to be a physician… **Our real goal is to provide accommodations to otherwise qualified students so that they can become competent and socially committed clinicians….**"* [1].

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The Struggling Medical Student: What Is the Differential Diagnosis?

During the pre-Thanksgiving promotions committee meeting, the discussion turns to Sandy, an honors student and all-American athlete from an elite undergraduate university who has failed the first three exams of the first semester basic science block. Dr. Ovid, the Block Leader, reported that Sandy seems well prepared for seminar discussions but doesn't say much, and in lecture she takes copious notes. The "Doctoring" Course Director reported that Sandy seems to be doing well and has excellent communication skills, interesting insights to bring to every discussion, and an easy manner with peers.

Dr. Ovid reports that after the first test failure Sandy reached out immediately for advice and support. She seemed to have rigorously prepared, perhaps over-prepared. There was no indication of personal problems, and Dr. Ovid reassured her, gave her some standard study advice, and told her to "relax" and that she was on the "right track." After the last exam failure, the course director needed to reach out to Sandy a few days after the exam scores were released. Though tutoring with an upperclassman was offered, Sandy has not yet taken advantage, nor has she joined a study group.

"She is just not living up to her potential," murmurs one basic science faculty. "…I have a bad feeling about this one…" he continued. "Usually these students get cracking after the first failure—it's the wake up call. She just doesn't seem to be trying hard enough. Maybe it has all come too easy to her in the past and she is not used to working hard," adds another committee member. "The athletes get an easier ride sometimes," he continued. "Allowances are made."

"That's what's so perplexing," chimes in Dr. Ovid. "You should see her notes…they are meticulously detailed, with beautiful

drawings, flow diagrams, and charts. Sandy claims she studies every waking hour and never takes a break. She has given up exercise, the Health Policy Club, and Student Government and hasn't talked with her parents since the second exam." Others nod in agreement, and the committee agrees that the Dean of Students will follow up with Sandy immediately to discuss academic probation.

9.1   Introduction

Have you met this student? She presents with a stellar academic record and strong interpersonal skills but she just can't seem to make the adjustment to medical school. If you didn't know better, given this student's apparent academic potential, you might think that she was lazy and unmotivated. Or worse, you might conclude that she was "given a pass" in college due to her athletic abilities but just "doesn't have what it takes" to make it in medicine. However, in Sandy's case, nothing could have been further from the truth. Her previous success was genuine, and she is working constantly, probably more than most of her classmates. Simply put, her test scores are discordant with her apparent intellectual capacity and level of effort. With this presentation, you need to have a high index of suspicion for an underlying learning problem.

On the other hand, it is premature to reach any conclusions. At this point, all that we know are this student's performance failures, some elements of her history, and informal observations. Framed as a "chief complaint," we might describe her situation as "poor academic performance in a previously successful first year medical student." The differential diagnosis is extensive. However, let's presume that we have ruled out significant medical, emotional, and other concerns and are convinced that the difficulty is specific to learning and academic performance. In that case, we need some process for getting to the

root of the problem and making a diagnosis. Is this a true "learning disability" or a milder "learning difference"? Is this something that will respond to a conservative approach (i.e., refining study strategies) or will it require a more aggressive one (i.e., accommodations, interventions, and treatment)?

Goals of this chapter are to:

- Provide a conceptual framework and vocabulary for understanding and describing learning variations in medical students
- Describe an approach to academic difficulties in medical students
- Share diagnostic tools and processes that we find helpful in diagnosing these problems
- Share specific strategies, approaches, interventions, and accommodations to support medical students with learning difficulties

9.2   Learning Disabilities vs. Learning Differences

Historically, learning disabilities have been defined as discrepancies between cognitive potential and academic performance. However, this approach assumed that cognitive potential was fixed and measurable, and that academic failure reflected some deficiency on the part of the learner. As neuroscientists increasingly elucidate the cognitive underpinnings of learning processes, a different picture has emerged. It is now understood that there is a wider range of normal developmental variation and greater potential and a longer window for neuroplasticity than was previously recognized. It is likely that cognitive potential and "intelligence" are not fixed but capable of development and growth. Also, minor dysfunctions or relative weaknesses in specific functions are highly prevalent, probably ubiquitous. Based on this emerging understanding, educators are discovering techniques for creating learning environments that enable more students to succeed. Learning disabilities, then, represent extreme positions along a continuum [2–7].

While some struggling medical students present with a previously diagnosed learning disorder, most do not. For many, it was smooth sailing academically until medical school. For others, there were subtle symptoms, perhaps early reading struggles, trouble with standardized testing, or a history of having to work longer and harder than their peers. More often than not, they have compensated for their difficulties by adopting elaborate and time-consuming "work-arounds" that have enabled them to succeed academically. In college, many were able to play to their strengths. For example, students who excel in math and science but struggle with reading can do extremely well in college while avoiding courses that involve a lot of reading [1, 8].

However, when they arrive in medical school, many find that their study strategies are too inefficient for the volume of material to be mastered. As they try to pick up their pace, they discover that there are just not enough hours in the day. As they work harder and harder, they seem to fall further and further behind until they may decompensate and "present" with academic failure. In our experience, once the nature of their difficulties has been elucidated, and they have access to effective strategies and appropriate accommodations, the majority overcome their initial difficulties and ultimately succeed in medical school and as physicians. In fact, most emerge with a deeper understanding of their own learning processes and needs that prepares them for the lifelong learning that is so vital to a successful career in medicine [3, 9, 10].

We find it helpful to approach struggling medical students from two different perspectives. First, it is important to determine whether the student's challenges are severe enough to meet the legal definition of a "disability." This is important because there is a legal obligation to provide reasonable accommodations for these students. We call this "looking through an LD (learning disability) lens."

The second perspective is one that is more consistent with our clinical training and the emerging neuroscience. From this perspective, the student's academic difficulty is considered as a chief complaint with a corresponding differential diagnosis. Simply put, our goal is to help students understand why they are having trouble and what they can do to overcome their difficulties. We find that it is usually possible to elucidate

these challenges within the context of a profile of strengths and challenges. This profile becomes the basis for a comprehensive learning plan. Our goal is not only to provide struggling students with the tools to succeed in medical school but to emerge with a deeper understanding of their own learning needs. After all, we need to prepare them to become successful, lifelong learners [3, 9, 10]. We call this "looking through a mind, brain, and education lens."

9.3   Looking Through an LD Lens

Pursuing a formal diagnosis of a learning disability has the advantage of providing legal protections and access to accommodations. The "label" may provide validation of lifelong struggles that others may have dismissed or viewed harshly. On the other hand, without perspective on the implications of these designations, a new "diagnosis" of a learning disability can be a very bitter pill to swallow. Having derived so much of their identity from their academic success, finding that they have a "disability" can be devastating, undermining their self-esteem and generating self-doubt and shame. Therefore, the clinician making the diagnosis must be extremely sensitive to these concerns [9, 10].

Hopefully, the student can emerge from the diagnostic process with the understanding that the information gleaned through the assessment process is likely to help them significantly. As one medical student whom we recently assessed stated so eloquently, "No medical student wants to hear that he has a learning disability. Now, if I knew that the goal was to understand how I learn and identify more effective approaches, I would come running."

Therefore, even when students meet the criteria for such a diagnosis of a learning disability, it is critical to contextualize their challenges as discrete elements within a broader profile of strengths and challenges. This must be coupled with specific, credible, and feasible strategies to address these challenges. It is also important to reassure students that the "disability" refers to a discrete area of dysfunction (e.g., slow reading)

Table 9.1 Specific learning disabilities

There is no universally accepted taxonomy to describe learning disabilities. Most commonly learning disabilities are categorized on the basis of the academic skill that is most problematic. As such, these diagnoses resemble chief complaints more than they do genuine diagnoses, and include:

Dyslexia	Language-based difficulties with understanding written material
Dyscalculia	Difficulty with solving math problems or recalling math facts
Language impairment	Significant difficulty with receptive or expressive language despite normal vision or hearing
Attention deficit/ hyperactivity	Inattention, hyperactivity, impulsivity causing distress, or academic or social impairment
Executive function	Significant difficulty organizing material and creating schedules
Autism spectrum disorder	Impaired social interaction and communication with some repetitive and stereotyped behaviors

that need not impact the ultimate trajectory of their career.

While consensus about definition and diagnostic criteria has been elusive, learning disabilities are generally considered to be a group of disorders, thought to be of neurologic origin, characterized by difficulties in acquiring and applying listening, reading, speaking, writing, or reasoning or math skills in the face of normal hearing, vision and intelligence, and conventional instruction. Typically, learning disabilities (Table 9.1) are diagnosed when otherwise able students exhibit disproportionate difficulty in their acquisition of specific academic skills [4, 5, 11].

Medical students, residents, physician employees, medical schools, and hospitals are all covered by the Americans with Disabilities Act (ADA) [12], which was amended in 2009 to expand and extend the scope of its coverage and to further its purpose of eliminating discrimination against individuals with disabilities.

The ADA defines disability as "(A) a physical or mental impairment that substantially limits one or more major life activities of such individual; (B) a record of such an impairment; or (C) being regarded as having such an impairment" [12].

The specific "major life activities" covered by the ADA include such basic tasks relevant to medical education and the practice of medicine as learning, reading, concentrating, thinking, and communicating, as well as such physical tasks as seeing, hearing, standing, and lifting. Furthermore, Congress was quite clear that the list in the statute, only part of which is included here, was not meant to be exhaustive and that the meaning of "disability" and "substantially limits" are to be considered broadly. Furthermore, disabilities that are episodic or in remission are considered to be disabilities if they would be so when active.

In addition, the ADA specifically notes that the "determination of whether an impairment substantially limits a major life activity shall be made without regard to the ameliorative effects of mitigating measures," which include pretty much every conceivable accommodation, learned behavioral modifications, and assistive technology except for eyeglasses [13].

Once we get beyond the broad definitions of what constitutes a disability, we next need to look to the obligation of medical schools and hospitals and their employees to accommodate individuals with disabilities. The starting point in the accommodation process is the disclosure by the disabled individual that he or she indeed has a disability and therefore requires accommodation. It is not the responsibility of the medical school, for example, to determine which of its students have ADHD or a reading disorder. The affected student must disclose this fact to the appropriate administrator. Further, the school or hospital can require documentation of such disability from a duly qualified professional, which documentation should indicate those areas in which the individual will require accommodation, and the kinds of remedial measures that may be useful in enabling the disabled individual to do their job, access their curriculum, or demonstrate their mastery of required knowledge. The nature of the disability need not—and usually should not—be disclosed to each professor or attending. They simply need to know that Miss Smith or Dr. Jones will be entitled to receive extended time on examinations or will have the right to use certain assistive technology while making rounds.

The ADA is clear that a student or trainee must be otherwise qualified for admission or training; the right to be free from discrimination on account of disability is not a free pass for an unqualified individual to gain admission to a program. It specifically states that a "'qualified individual' means an individual who, with or without reasonable accommodation, can perform the essential functions of the … position that such individual holds or desires." It goes on to state that "due consideration shall be given to the employer's [or school's] judgment as to what functions of a job are essential, and if [there is] a written description before … interviewing applicants … this description shall be considered evidence of the essential functions of the [position]." A student whose grades are not up to the general standards for admission to a medical school need not be admitted, even if his or her grades were impacted by a disability. Nor is it necessary to promote or retain students who are unable to manage the academic demands that are required of all students, or who cannot satisfactorily complete their clerkships, so long as they have been given appropriate accommodations to address their disclosed disabilities.

Just what those appropriate accommodations should be will differ for each individual. One important point is that the school or hospital need not put in place any accommodation that will cause "undue hardship" to its program. Hardship is defined to mean an action that causes significant difficulty or expense, and the nature of the program in which the individual is enrolled or employed is one factor which can be considered. So, although part-time or modified schedules and job restructuring are all examples included in the statute of potential accommodations, if reducing hours will impact coverage of a clinical service, it would be considered an undue hardship and will not be required. On the other hand, there will be many accommodations which can assist an individual without impacting the nature of their medical education or the role they play in clerkships or residencies. Beyond testing accommodations, these can include use of handheld reading pens (text-to-speech translators for dyslexia and other reading disorders)

and smartpens, which record what is said in a lecture or on rounds and link it to notes in a notebook. Textbooks are now available in multiple formats, and tablet computers and smartphones can aid with activities from providing video demonstrations to active calendars for those with executive function challenges.

And what about testing? While many students and residents who have difficulty with attention or reading simply need additional time or a quiet testing location (or both) to appropriately demonstrate their knowledge, some individuals require more extensive testing support. A 2011 lawsuit in the US District Court in Vermont helped to clarify just what kind of test accommodations are required under the ADA. In that case, a law student who had both a visual impairment and a learning disability had completed law school and was prepared to take the bar exam. In both college and law school, she had used a combination of two kinds of software—a text-to-speech reader combined with something called "ZoomText," which together provided her with simultaneous large font audio versions of the test materials.

The National Conference of Bar Examiners denied the student's request for these accommodations and instead, offered her selections from a menu they had developed, which included a reader, an audio recording of the test, or a Braille version of the exam. The US Department of Justice intervened by filing a statement with the court, noting, "the United States does not interpret … the ADA to simply require reasonable accommodations [to this individual], but rather to require appropriate modifications or auxiliary aids to 'best ensure' that the exam measures [the student's] knowledge of professional responsibility issues and not her visual disabilities." Since it is the Department of Justice that has primary responsibility for enforcement of the ADA, the court adopted the "best ensure" standard. And it is that standard that medical educators need to keep in mind as they consider how to measure the knowledge of the students and physicians they are training.

9.4 Looking Through a Mind, Brain, and Education Lens

Researchers in the cognitive neurosciences are increasingly elucidating the structural and functional correlates of the components of academic performance and learning. For example, Daniel Ansari and his colleagues have described the pathways and processes associated with the acquisition of numeracy and mathematics. In his "neuronal recycling theory," Stanislaus Dehaene elucidates the mechanisms that enabled humans to cobble together several parts of our primate brains to construct reading pathways [14, 15].

Several common themes emerge from their work and the work of others in the field. What we describe as distinct skills (e.g., reading and math) are made-up of multiple components or subskills. These subskills commonly require neurons to acquire functions other than those originally "intended" (i.e., driven by evolutionary forces). Learning a skill involves developing multiple such subskills and then linking them so their functions may be synchronized or coordinated. Within the context of these dynamic and complex processes, individual variation is inevitable. In fact, it is becoming increasingly clear that human cognition should be viewed as a complex mosaic of strengths and vulnerabilities that vary greatly between individuals. In fact, it is very possible that these profiles are unique, like fingerprints. However, unlike our fingerprints, our cognitive or neurodevelopmental profiles can change over time [14–17].

The field of Mind, Brain, and Education provides a mechanism for applying this emerging knowledge to educational practice and policy. For example, understanding that reading requires the acquisition of several discrete subskills, we now know that "dyslexia" has multiple possible causes (i.e., differential diagnosis). Therefore, it is not surprising that not every child with dyslexia responds to the same reading program [11, 18]. As educators learn to identify specific breakdowns in individual students, they can choose interventions

that target the specific deficit and are most likely to succeed [19]. In fact, there is a wide range of normal variation in the development of these subskills among "typical learners." As a result, Universal Design for Learning has emerged as an approach that acknowledges and addresses this diversity in the classroom by providing multiple means of representation, multiple means of expression, and multiple means of engagement within the classroom [6, 20].

For the purposes of optimizing learning environments in the professions where students are selected for cognitive and motivational strengths, traditional labels (e.g., "gifted" or "learning disabled," "dyslexia" or "attention deficit disorder") and standard psychoeducational and neuropsychological assessments (see Table 9.1) are likely to fall away in favor of an approach that identifies an individual's neurocognitive profile and tailors instruction to maximize expertise development in clearly articulated outcome areas. This shift has already gained traction in general educational domains [6]. While medical education has been out front in significant innovations in theory-driven curriculum innovation (e.g., problem-based learning, competency-based assessment), the field is late in coming to the realization that the best outcomes will come from standardizing learning outcomes and individualizing learning processes [21]. This is a wide-open area of collaborative research agendas for neuroscientists, clinicians, and educators [14, 22–25].

It is beyond the scope of this chapter to describe and explore the relative merits of the numerous taxonomies that have been developed to describe learning variations. Rather, we will describe the approach that we have used in our work with over 100 medical students and house officers over the past 10 years. Our approach is based on the conceptual framework and clinical model developed at the All Kinds of Minds Institute, which was a nonprofit institute affiliated with the University of North Carolina School of Medicine, that implemented clinical and professional development programs based on emerging neuroscience and best practices in clinical medicine and education [7, 25].

The model facilitates diagnostic specificity by first "task analyzing" each element of academic or clinical performance, linking those elements to one of six cognitive functions that we refer to as "neurodevelopmental constructs":

1. Attention [26, 27]
2. Language [11, 18, 28, 29]
3. Memory [17, 30–33]
4. Temporal-sequential ordering [34, 35]
5. Spatial ordering [36, 37]
6. Higher-order cognition [38–40]

We can then target our neuropsychological testing and clinical assessment to examine those cognitive functions most relevant to the task at hand. Table 9.2 includes a broad overview of these six constructs to provide perspective.

9.5   Back to Sandy

Now, let's take what we have been discussing and get back to our concerns about Sandy. In speaking with her, we learn that she has always considered herself a relatively slow reader. She thinks that she had trouble learning to read and remembers having to come into school early for extra help when she first learned to read. Things seemed to pick up after that, but she never really enjoyed reading very much. To this day, she rarely reads for pleasure, but wishes that she had the time.

She remembers doing well in high school and college, but she seemed to had to study a lot harder than her friends. She excelled in math and science courses and stayed away from classes that required a lot of reading. Nonetheless, she always needed more time to complete her work than her friends. They used to joke that she was always the easiest to find because she was always in the library. On standardized tests, she always "aced the math and science" but was in the "middle of the road" on verbal tasks.

Based on our conversation with Sandy, we decided to examine her reading fluency. Indeed, in administering the Nelson-Denny Reading Test, we found that her reading rate was at the tenth percentile. She was only able to complete 28 of

Table 9.2 Six neurodevelopment constructs

Broad overview of six cognitive functions to provide perspective		
1. Attention	(a)	Definition—The ability to engage with tasks, information, activities, and other individuals. Includes sustaining effort, regulating focus, and managing responses and behaviors
	(b)	Example of attention problem—Student has trouble identifying most salient details and studying becomes inefficient and ineffective when she tries to memorize everything
	(c)	Diagnostic tools—Clinical interview, various checklists (e.g., NYU Adult ADHD Self-Report Questionnaire, Behavior Rating Inventory for Executive Function), continuous performance tasks, observation and error analysis
	(d)	Interventions—Academic coaching in strategies for previewing material, applying techniques for identifying salient information, encourage joining a study group, or partnering with peer coach
2. Language	(a)	Definition—Interpreting and generating verbal expression, including social aspects of verbal communication
	(b)	Example of language problem—Student experiences difficulties with word retrieval, and therefore appears unprepared because he cannot quickly respond to his attending's questions on rounds
	(c)	Diagnostic tools—Rapid Picture Naming from Woodcock-Johnson III Normative Update Tests of Cognitive Abilities, the Comprehensive Test of Phonological Processing, the Delis-Kaplan Executive Function System
	(d)	Intervention—Rehearsal strategies to diminish anxiety in high pressure situations, having the ability to give additional prepared talks rather than cold-calls on rounds, or alerting the attending to provide "think-time" after calling on student
3. Memory	(a)	Definition—Holding, processing, storing, and accessing information for immediate or delayed use
	(b)	Example of memory problem—Student has limited active working memory, and therefore gets confused when attempting to listen and take notes at the same time
	(c)	Diagnostic tools—Wide Range Assessment of Memory and Learning—Second Edition, various subtests from the Wechsler Adult Intelligence Scale—Fourth Edition, and WJ-III Cognitive and Achievement Tests
	(d)	Intervention—Coaching in previewing techniques and use of "smartpen"
4. Temporal-sequential ordering	(a)	Definition—Managing information and processes that are linear, serial, or ordinal (organized in a series of discrete steps)
	(b)	Example of Sequencing Problem—Student confuses the order of events in a patient history, and therefore misses the diagnosis
	(c)	Diagnostic tool—Delis-Kaplan Executive Function System, Word Range Assessment of Memory and Language—Second Edition, Behavior Rating Inventory for Executive Function, selected subtests from the Wechsler Adult Intelligence Scale—Fourth Edition and WJ-III Cognitive and Achievement Tests
	(d)	Intervention—Having student use smartpen and record notes on a time line when taking patient history
5. Spatial ordering	(a)	Definition—Managing information and processes that are visually or spatially organized as a configuration, structure, or shape
	(b)	Example of a spatial problem—Student has trouble following his anatomy lecturer, who describes anatomic structures in great detail
	(c)	Diagnostic tools—Block design and visual puzzles from the Wechsler Adult Intelligence Scale—Fourth Edition, subtests from the WJ-III Cognitive and Achievement Tests, Kaufman Brief Intelligence Test—Second Edition, and the Rey Complex Figure Test and Recognition Trial
	(d)	Intervention—Providing access to various animations and 3D visualizations
6. Higher-order cognition	(a)	Definition—The most complex cognitive functions, including reasoning, problem-solving, pattern recognition, conceptualization, insight and idea generation, and creativity
	(b)	Example of problem—Student has always relied on higher-order cognition to determine what "makes sense" and has never had to "memorize" anything
	(c)	Diagnostic tools—Various subtests of the Wechsler Adult Intelligence Scale—Fourth Edition and WJ-III Cognitive and Achievement Tests
	(d)	Intervention—Providing mind-mapping software to create structure for organizing and storing information

the 38 questions within the standard time but completed all 38 with 50 % more time.

While it might be tempting to stop at this point and think about possible accommodations for Sandy's slow reading, we believe that would be a mistake. We have gotten a bit more specific in defining her symptom (i.e., slow reading) but have only really scratched the surface. Why is she a slow reader? What cognitive constructs are weak? In other words, what is the differential diagnosis? And what cognitive constructs are strong? She has gotten this far despite having what appears to be a significant reading problem. It is very likely that she has taken advantage of significant strengths. As with many struggling students, Sandy is acutely aware of her difficulties and almost dismissive of her strengths. Therefore, in addition to getting to the bottom of her reading difficulties, we must not lose sight of the importance of elucidating her strengths. Providing Sandy with objective data that demonstrates that she does have significant cognitive strengths will help her put her struggles in perspective, rebuild her self-esteem, and help her select those strategies that will be right for her.

We know that reading is an academic skill that consists of numerous subskills, including processing the visual information on the page, recognizing the letters, recalling the sounds that each letter or letter pattern represents, mentally suspending and blending those sounds in the correct order, accessing the corresponding word, appreciating the word meaning, and so on. Each of these subskills can be linked to different cognitive functions that can be assessed.

In speaking with Sandy, we learn that she frequently finds that words "are on the tip of her tongue" but she just cannot find them. While working with this student, we notice that she reads hesitantly, word by word. We hypothesize that poor word retrieval is contributing to her reading difficulty and choose to administer one from a number of neuropsychological instruments to objectively assess this function. Indeed, her performance on the Rapid Object Naming subtest of the Comprehensive Test of Phonological Processing was only at the 19th percentile and her performance on the Rapid Picture Naming subtest of the

Woodcock-Johnson III Normative Update Tests of Cognitive Abilities was at the 12th percentile.

As we probed the other elements of the reading process, subskills and associated neurodevelopmental constructs, we satisfied ourselves that Sandy's slow word retrieval appeared to be the major culprit. Knowing this, we felt confident that audiobooks and other text-to-speech tools will be effective for Sandy, enabling her to access text without relying on her slow word retrieval.

However, in working with Sandy, we also learned that she has not been very strategic or efficient when she studies. She recalls that through high school, she was always able "to remember everything" or "figure out what I couldn't remember." In college, she relied on her superb grasp of concepts and rarely had to memorize anything. Medical school is a different story. She is "trying every trick in the book to memorize EVERYTHING" but, tearfully notes, "I just can't seem to remember anything. I'm going to be an awful doctor…if I even get that far."

Through our assessment, we find that there is nothing wrong with Sandy's memory. However, she seems to do much better when information is meaningful or is highly visual. When she has to rely on rote memory, she does less well. As we speak with her through the assessment, we notice something interesting. When attempting to retain information, she generally rewrites it or repeats it verbatim. When studying for exams, she rewrites her notes, the textbooks, and the class transcripts. In other words, her repertoire of strategies is rather limited. Further, while she doesn't have trouble focusing, she is not always certain what to focus on. She struggles with something called "saliency determination," meaning that she has trouble separating the "wheat from the chaff."

9.6 The Assessment Process

If someone is experiencing significant academic difficulties, sooner or later, you will want them to undergo formal assessment. Therefore, it may be useful for you to have some familiarity with the assessment process and some of the common terms that it involves.

9.6.1 Psychoeducational Testing

The core assessment most commonly administered is referred to as "psychoeducational testing" and typically includes "IQ" or cognitive testing and academic or achievement testing. The cognitive batteries that you likely will encounter are the Wechsler Adult Intelligence Scale—Fourth Edition (WAIS-IV) and the Woodcock-Johnson III Normative Update Tests of Cognitive Abilities (WJ-III Cognitive). The academic assessment batteries that you likely will encounter include the Woodcock-Johnson III Normative Update Tests Achievement (WJ-III Achievement) and the Wechsler Individual Achievement Test—Third Edition (WIAT-IIII). We also like the Nelson-Denny Reading Test because it includes a series of paragraphs, followed by multiple choice questions, and is available in multiple versions so you can assess performance under standard time constraints as well as with extended time. Therefore, it can be very helpful in documenting the need for extended time for testing.

9.6.2 Neuropsychological Testing

The next level of assessment is commonly referred to as neuropsychological testing. Neuropsychological testing includes a variety of assessment instruments that enable you to assess different cognitive functions, such as language, memory, temporal-sequential ordering, spatial ordering, and higher-order cognition. While it is not unusual for patients to call to schedule a "neuropsych," it is important to bear in mind that the term refers to a broad category of assessment instruments rather than a specific battery. While some clinicians continue to administer multiple, full neuropsychological batteries, we find that this "shotgun approach" is rarely necessary. We prefer to select specific subtests, as we would select specific blood tests or imaging studies, as we work our way through our "differential diagnosis." In addition to the instruments mentioned above, we typically include portions of the following batteries in our assessments:

- Comprehensive Test of Nonverbal Intelligence—Second Edition
- Delis-Kaplan Executive Function System

- Kaufman Brief Intelligence Tests—Second Edition
- Rey Complex Figure Test and Recognition Trial
- Wide Range Assessment of Memory and Learning—Second Edition

However, we find that we often learn more from informal or structured qualitative observations and interactions than we do from standardized testing. Therefore, we always have medical students spend time working with a learning specialist (i.e., an educator with classroom experience trained in the diagnosis and treatment of learning disorders) and with a physician with expertise in medical education and cognitive assessment. We also include various questionnaires, such as the Behavior Rating Inventory for Executive Function—Adult Version (BRIEF-A) and the Adult ADHD Self-Report Scale.

In other words, our approach is analogous to other spheres of clinical diagnosis. Rather than simply administering a fixed "test battery," the clinician first generates a "differential diagnosis" consisting of all of the possible cognitive dysfunctions that could account for the presenting symptoms. Then batteries, subtests, and tasks are selected to "rule-in" or "rule-out" the possibilities, until a diagnosis emerges that includes a description of relevant cognitive strengths and dysfunctions.

In addition, the assessment moves beyond problematic functions to provide a complete picture of the student's profile of strengths and challenges as they relate to academic performance, medical practice, and other relevant functions.

Once elucidated, the profile serves as the anchor for a series of actions that we have found critical to helping students overcome their difficulties:
- "Demystification"
- Specific strategies
- Accommodations

9.7 "Demystification"

In my clinical practice, we refer to the feedback session following assessment as "demystification," a term that we borrowed from our work at the All Kinds of Minds Institute. The goal of the

session is to present each element of an individual's learning profile, first their strengths and then their challenges. Each element is contextualized, first in terms of the assessment findings supporting our conclusions and next within their daily experience. The notion is to build metacognition, which literally means thinking about thinking and in the context refers to building self-awareness and insight into a student's learning processes (see Chap. 13 for more on metacognition).

In our experience, this process is critical for struggling medical students, particularly those who have never experienced significant academic difficulties in the past. Since the notion of gifted vs. typical vs. disabled learners remains the prevailing paradigm, many medical students are used to thinking of themselves as "gifted." Facing the prospect of academic failure, they often wonder if they must now redefine themselves as "learning disabled," with the associated stigma and the possibility that they will be found unfit for medicine.

We often find that what we call the "tennis player" analogy helps people move beyond this traditional paradigm. Most people understand when we point out that even the world's best tennis players tend to have parts of their game that are stronger than others. For example, someone might say that they have a particularly strong serve, but a weaker backhand. A good coach will provide multiple strategies, some to strengthen the player's backhand, others to further strengthen the serve, and perhaps others to work around his weak back hand. We point out that the brains are the same way and that one does not need to be "learning disabled" to have an imperfect brain. In fact we all do. In other words, having challenges does not mean a student is "learning disabled." To the contrary, like the tennis player, it simply means that they need to identify strategies that leverage the strengths while addressing those challenges that are interfering with performance in medical school.

Inevitably, medical students possess many highly developed cognitive abilities. Enumerating them helps reassure the student that their previous success was not an illusion and that their intellectual resources are sufficient for succeeding in medical school. Next, identifying a small number of challenges within this larger context

of numerous strengths helps the student understand that their problems are real, but not insurmountable. This feedback session should occur as soon as possible. Optimally, we like to demystify the student on the day of the assessment [1, 3, 9, 10].

In Sandy's case, she was pleased to hear that she exhibited highly developed abilities in higher-order cognition, most parts of language, memory, spatial ordering, and most of her attention controls. Her challenges were limited to word retrieval (one part of language) and saliency determination (one part of attention). In addition, she displayed limited strategy use, meaning that her performance was undermined by her limited repertoire of strategies for learning, test preparation, and test taking.

Once we shared our findings with Sandy, she realized that her weak word retrieval was also causing problems on attending rounds. Because she has such a rich vocabulary and extensive fund of knowledge, she was able to express herself most of the time. However, she realized that she found her surgery attending intimidating and just could not find her words quickly enough to respond to his rapid fire questions on rounds, even though she almost always knew the answers. It turned out that once he understood the nature of her difficulty, the attending surgeon was more than willing to give Sandy a moment to organize her thoughts. Ironically, once she didn't feel pressure to respond quickly, she was less anxious and more articulate when he subsequently asked her questions.

9.8 Learning Plan

Once a student's learning profile has been elucidated, it is possible to develop a learning plan by selecting strategies on the basis of understanding this profile: we refer to this process as "management by profile." Particularly critical is the early implementation of bypass strategies that leverage strengths or external resources to work around an area of weakness. For example, enabling slow readers access to audiobooks or other text-to-speech resources will have an immediate impact on the efficiency and effectiveness of their study sessions.

9.9 Implementation of Accommodations

When a student's challenges meet the criteria for a diagnosable disability, there is a legal obligation to provide accommodations. However, supervisors may decide to go beyond what is legally required. For example, within the context of the population at large, a reading fluency at the 30th percentile would be considered normal, perhaps a relative weakness. However, it may not be sufficient for getting through all of the clinical vignettes and questions on Shelf Examinations. Therefore, we believe that it would be reasonable to offer extended time for students who might not meet strict criteria for the diagnosis of a disability. In Sandy's case, we recommended that she receive extended time for all of her tests. We also advised that she apply for accommodations for the USMLE.

9.10 Attention Deficit Disorder and Executive Function Disorders

Medical school places enormous stress on students' attention and organizational skills. Therefore, some students who were previously diagnosed with attention deficit disorder (ADD) and/or executive function disorders (EF) and doing well may experience exacerbation of their symptoms during their transition to medical school. In addition, some students are not diagnosed with ADD and/or EF until they begin medical school [41].

ADD and EF may be the primary cause(s) of a student's academic difficulty, or they may be present in addition to other learning problems. Therefore, ADD and EF must be part of the differential diagnosis for any student who presents with academic difficulty. Conversely, when students are found to meet diagnostic criteria for either ADD or EF, there should be a high index of suspicion for comorbid learning problems [42] (see Chap. 12 for more on ADD/ADHD).

9.11 Faculty Attitudes, Issues, and Frustration with the Problem

Frequently, medical school faculty and administrators find dealing with learning problems challenging. Traditional psychoeducational assessments can be expensive and, in our experience, are not sufficiently sensitive or specific to identify the most common dysfunctions that undermine medical student performance. Effective interventions are not always readily available and can become quite expensive. Who funds the assessment and remediation is highly variable across medical schools. However, beyond these real logistical and financial obstacles, it is the attitude of faculty, administrators, other medical students, and the struggling students themselves that create the most significant barriers to the effective management of academic difficulties in medical school. Recent developments in the Mind, Brain, and Education world rarely find their way into the journals commonly read by medical school faculty. Therefore, many may be unaware of the wide range of normal variation in learning processes, the high prevalence of minor dysfunctions even among high performers, the extent and duration of neuroplasticity over the course of adulthood, and the increasing availability of accessible instructional materials. Some may still believe that learning differences and disabilities are synonymous with intellectual disabilities and therefore are inconsistent with safe medical practice. Some continue to see learning challenges as "problems of motivation."

We have also encountered faculty members and students who "intellectually" understand the various bases of learning variations but continue to believe that providing support or accommodations provides an unfair advantage to students with disabilities or enables otherwise unfit physicians to practice medicine. Such is not the case. When applied appropriately, academic support and accommodations level the playing field by removing arbitrary barriers that might prevent otherwise qualified students from accessing the curriculum, acquiring requisite knowledge and

skill, and demonstrating their level of knowledge and skill. In short, it is clear that faculty members have both a legal and moral obligation to provide reasonable accommodations to medical students with diagnosed learning disabilities.

9.12   Remediation Strategies and Resources

Just as we would never write a prescription before making a diagnosis, we rarely recommend specific strategies before elucidating the specific elements of a student's learning profile. Nonetheless, some strategies seem compatible with many learning profiles. We include some of our favorites below:

- Front-loading is the process of preparing one-self before engaging in reading or attending a lecture by doing such things as scanning the material for main ideas, salient details, themes, structure, and tone; researching unknown vocabulary; accessing or building background knowledge connected to the topic at hand; and creating or locating related visuals. Many of these resources can be found on CDs that come with textbooks or via an Internet search. Students may also choose to create their own visuals by making concept maps, or timelines to show important processes.
- Taking practice tests is an effective test preparation strategy, perhaps more so than traditional studying. For more information on how practice tests aid in memory retrieval, see Butler [31] and Chap. 3.
- Students whose minds wander or who have trouble listening and taking notes at the same time may benefit from using a Livescribe smartpen (www.livescribe.com). While writing, the smartpen will record and link everything that the lecturer says to everything that the student writes. With a tap of the pen, it will save a copy of the material to his computer, tablet, or smartphone and link his notes to the audio that was recorded at the time those specific notes were made. The pen can also convert written notes and visuals (e.g., diagrams, tables, drawings, etc.) into a digital text format and can save this information to a computer, resulting in an archive of handwritten notes

and audio. The Livescribe pen can be a useful tool for taking patient histories as well.
- Consider programs that produce both graphic diagrams (such as concept maps and flowcharts) and sequential outlines. For example, Inspiration software (inspiration.com) converts outlines to maps and/or diagrams and vice versa and allows the user to shift back and forth. Austhink (austhink.com) provides a visual framework to organize information and structure arguments. Mindjet MindManager (www.mindjet.com) is yet another tool for helping one organize ideas and projects using a visual format.
- Students who find that they lose large amounts of time surfing the internet may benefit from tools that monitor their computer activity and can be useful in helping them more effectively manage their time. Slife Web (www.slifelabs.com) and RescueTime (www.rescuetime.com) each track website use and allow users to view how much time they spend on certain websites. Both programs allow users to block certain websites from themselves for specific increments of time or indefinitely.
- To help improve efficiency, the WatchMinder might be a useful tool. This is a discrete stopwatch that will alert a student when her time is "up" via a vibration. The student can set goals, such as, "I will spend no more than 20 minutes responding to this email," and set the watch.
- Audiobooks may be helpful and are available through multiple resources, including:
    - Amazon (www.amazon.com)
    - Audible.com (www.audible.com)
    - Barnes & Noble Digital Audiobooks (http://www.barnesandnoble.com)
    - iTunes Audiobooks (www.apple.com/itunes/whatson/audiobooks.html)
    - Learning Ally (www.learningally.org)
    - Bookshare (www.bookshare.org)
        Learning Ally (http://www.learningally.org) and Bookshare (www.bookshare.org) are two outstanding sources for textbooks and other academic readings in audio format. However, access to these two sites is limited to individuals with print disabilities.

- The National Center for Accessible Instructional Materials http://aim.cast.org/ includes links to a wide variety of additional resources.
- The Wizcomtech reading pen is a useful tool for students who have difficulty reading print. The pen is actually a small scanning device that can be used to scan individual words while reading to hear the word pronounced and even see a definition. The reading pen is an excellent tool to build comprehension and vocabulary while reading independently. Wizcomtech products are available at www.wizcomtech.com/eng/catalog/a/rp.
- Many students find SparkCharts to be a useful tool to use for previewing and reviewing material. SparkCharts are foldable, laminated charts that contain nearly all of the basic, critical information required to understand a wide variety of subjects including anatomy and biochemistry. SparkCharts are inexpensive and can be downloaded and printed from www.sparkcharts.sparknotes.com or purchased in the form of laminated charts from bookstores.

9.13 Conclusion

We hope that this chapter has been helpful in providing a conceptual framework and vocabulary for understanding and describing the wide range of normal variations in cognitive abilities in all students, including medical students. While you will need to understand when learning variations become "disabilities" within the context of the ADA and what your legal obligations are when working with students with diagnosed disabilities, we also hope that this chapter provided a way of both appreciating each student's unique profile of strengths and challenges and integrating that understanding into your approach to education and assessment of each of them. Finally, for those of you working more actively with struggling students, either in the diagnostic process or in providing ongoing support, we hope we have provided practical advice to help you be effective in this work.

References

1. Hafferty FW, Gibson GG. Learning disabilities and the meaning of medical education. Acad Med. 2001;76:1027–31.
2. Butterworth B, Kovas Y. Understanding neurocognitive developmental disorders can improve education for all. Science. 2013;340(6130):300–5. doi:10.1126/science.1231022.
3. Dweck CS. Mindset: the new psychology of success. New York: Random House; 2006. p. 276.
4. Francis DJ, Fletcher JM, Stuebing KK, Lyon GR, Shaywitz BA, Shaywitz SE. Psychometric approaches to the identification of LD: IQ and achievement scores are not sufficient. J Learn Disabil. 2005;38(2):98–108. PubMed PMID: 15813593.
5. Kavale KA, Forness SR. What definitions of learning disability say and don't say: a critical analysis. J Learn Disabil. 2000;33(3):239–56. doi:10.1177/002221940003300303.
6. Rose DH, Meyer A, Strangman N, Rappolt G. Teaching every student in the digital age: universal design for learning. Alexandria, VA: Association For Supervision and Curriculum Design (ASCD); 2002. p. 216.
7. Levine MD. Developmental variation and learning disorders. 2nd ed. Cambridge, MA: Educators Publishing Service; 2001. p. 671.
8. Sack W, Gale J, Gulati S, Gunther M, Nesheim R, Stoddard F, St. John R. Requesting accommodation for a disability: a telephone survey of American medical schools. J Postsecond Educ Disabil. 2008;20(2):93–9.
9. Griffin E, Pollack D. Student experiences of neurodiversity in higher education: insights from the BRAINHE project. Dyslexia. 2009;15(1):23–41. doi:10.1002/dys.383.
10. Hall CW, Webster RE. Metacognitive and affective factors of college students with and without learning disabilities. J Postsecond Educ Disabil. 2008;21(1):32–41.
11. Aaron PG, Joshi RM, Gooden R, Bentum KE. Diagnosis and treatment of reading disabilities based on the component model of reading: an alternative to the discrepancy model of LD. J Learn Disabil. 2008;41:67–84. doi:10.1177/0022219407310838.
12. Americans With Disabilities Act (ADA) of 1990, 42 U.S.C Annotated, Sect. 12101 et seq.
13. 154 Cong Rec. S.8840-01 (daily ed. Sep 16, 2008) (Statement of Managers-S 3460).
14. Ansari D, De Smedt B, Grabner RH. Neuroeducation—a critical overview of an emerging field. Neuroethics. 2012;5:105–17. doi:10.1007/s12152-011-9119-3.
15. Dehaene S. Reading in the brain. New York: Penguin Group; 2009. p. 388.
16. Dehaene S, Pegado F, Braga LW, Ventura P, Nunes Filho G, Jobert A, Dehaene-Lambertz G, Kolinsky R, Morais J, Cohen L. How learning to read

changes the cortical networks for vision and language. Science. 2010;330(6009):1359–64. doi:10.1126/science.1194140.

17. Kirchoff BA, Buckner RL. Functional-anatomic correlates of individual differences in memory. Neuron. 2006;51(2):263–74. PubMed PMID: 16846860.

18. Heim S, Tschierse J, Amunts K, Wilms M, Vossel S, Willmes K, Grabowska A, Huber W. Cognitive subtypes of dyslexia. Acta Neurobiol Exp. 2008;68(1):73–82.

19. Shaywitz BA, Shaywitz SE, Blachman BA, Pugh KR, Fulbright RK, Skudlarski P, Mencl WE, Constable RT, Holahan JM, Marchione KE, Fletcher JM, Lyon GR, Gore JC. Development of left occipitotemporal systems for skilled reading in children after a phonologically-based intervention. Biol Psychiatry. 2004;55(9):926–33. PubMed PMID: 15110736.

20. Rose DH, Dalton B. Learning to read in the digital age. Mind Brain Educ. 2009;3(2):74–83. doi:10.1111/j.1751-228X.2009.01057.x.

21. Cooke M, Irby DM, O'Brien BC. Educating physicians: a call for reform of medical school and residency. Hoboken, NJ: Wiley; 2010. p. 323.

22. Fischer KW. Mind, brain and education: building a scientific groundwork for learning and teaching. Mind Brain Educ. 2009;3(1):3–16. doi:10.1111/j.1751-228x.2008.01048.x.

23. Fischer KW, Daniel DB. Need for infrastructure to connect research with practice in education. Mind Brain Educ. 2009;3(1):1–2. doi:10.1111/j.1751-228X.2008.01054.x.

24. Fischer KW, Goswami U, Geake J, Task Force on the Future of Educational Neuroscience. The future of educational neuroscience. Mind Brain Educ. 2010;4:68–80.

25. Ronstadt K, Yellin PB. Linking MBE to clinical practice: a proposal for transdisciplinary collaboration. Mind Brain Educ. 2010;4(3):95–101.

26. Fan J, McCandliss BD, Sommer T, Raz A, Posner MI. Testing the efficiency and independence of attentional networks. J Cogn Neurosci. 2002;14(3):340–7. PubMed PMID: 11970796.

27. Waszak F, Li SC, Hommel B. The development of attentional networks: cross-sectional findings from a life span sample. Dev Psychol. 2010;46(2):337–49. doi:10.1037/a0018541.

28. Immordino-Yang MH. The stories of Nico and Brooke revisited: toward a cross-disciplinary dialogue about teaching and learning. Mind Brain Educ. 2008;2(2):49–51.

29. MacWhinney B, Snow C. The child language data exchange system: an update. J Child Lang. 1990;17(2):457–72. PubMed PMID: 2380278.

30. Ackerman PL, Beier ME, Boyle MO. Working memory and intelligence: the same or different? Psychol Bull. 2005;131(1):30–60.

31. Butler AC. Repeated testing produces superior transfer of learning relative to repeated studying. J Exp Psychol Learn Mem Cogn. 2010;36(5):1118–33. doi:10.1037/a0019902.

32. Ecker UK, Lewandowsky S, Oberauer K, Chee AE. The components of working memory updating: an experimental decomposition and individual differences. J Exp Psychol Learn Mem Cogn. 2010;36(1):170–89. doi:10.1037/a0017891.

33. Regehr G, Norman GR. Issues in cognitive psychology: implications for professional education. Acad Med. 1996;71(9):988–1001. PubMed PMID: 9125988.

34. Creel SC, Dahan D. The effect of temporal structure of spoken words on paired-associate learning. J Exp Psychol Learn Mem Cogn. 2010;36(1):110–22. doi:10.1037/a0017527.

35. Dominey PF. A shared system for learning serial and temporal structure of sensori-motor sequences? Evidence from simulation and human experiments. Cogn Brain Res. 1998;6(3):163–72. doi:10.1016/j.bbr.2011.03.031.

36. Schneps MH, Rose LT, Fischer KW. Visual learning and the brain: implications for dyslexia. Mind Brain Educ. 2007;1(3):128–39.

37. Stull AT, Hegarty M, Mayer RE. Getting a handle on learning anatomy with interactive three-dimensional graphics. J Educ Psychol. 2009;101:803–16.

38. Cole MW, Yarkoni T, Anticevic A, Braver T. Global connectivity of prefrontal cortex predicts cognitive control and intelligence. J Neurosci. 2012;32(26):8988–99. doi:10.1523/JNEUROSCI.0536-12.2012.

39. Stein Z, Dawson T, Fischer KW. Redesigning testing: operationalizing the new science of learning, Chap. 10. In: Khine MS, Saleh IM, editors. New science of learning-cognition, computers, and collaboration in education. New York: Springer; 2010.

40. West DC, Pomeroy JF, Park JK, Gerstenberger EA, Sandoval J. Critical thinking in graduate medical education: a role for concept mapping assessment? JAMA. 2000;284(9):1105–10. PubMed PMID: 10974689.

41. Liston C, McEwen BS, Casey BJ. Psychosocial stress reversibly disrupts prefrontal processing and attention control. Proc Natl Acad Sci U S A. 2009;106(3):912–7. doi:10.1073/pnas.0807041106.

42. Brown TE, Reichel PC, Quinlan DM. Executive function impairments in high IQ adults with ADHD. J Atten Disord. 2009;13(2):161–7. doi:10.1177/1087054708326113.

"Well, This Is Awkward": Autism Spectrum Disorder in Medical Trainees

Sandra Yingling

Abstract

Interpersonal communication can be a significant career stumbling block for medical trainees, even when they have exceptional knowledge and technical ability. If physicians have difficulty accurately reading verbal and nonverbal cues in patient encounters, they will likely be perceived as detached or lacking in empathy. Similarly, if trainees do not regulate their physical distance or the intensity of their speech, they may unintentionally alarm or anger patients. In this chapter, drawing on her extensive experience as a psychologist and healthcare management coach who works with students and residents referred for poor clinical skills, the author explores the common issues facing medical trainees with awkward interpersonal communication. Based on her experience, she recommends utilizing remedial skills-building strategies recently developed for adults with autism spectrum disorders (also referred to as neuro-atypicals) to work with such trainees. Strategies for partnering with trainees to ensure a successful remediation are discussed.

10.1 Introduction

Chapter 4 of this book extensively discusses remediation of communication skills and effective models of communication and coaching for most trainees who struggle in this domain. However, for people who have what is understood as autism spectrum disorder (ASD), the frustrations of interacting with a culture in which the social rules are mysterious carry with them the risk of anxiety and depression, symptoms that may be visible to remediation teams before an underlying communication issue is identified. Medical trainees who have a pattern of awkward interpersonal encounters, particularly those who are unaware of the impact of their own verbal and nonverbal behaviors, may benefit from remedial support based on skills-building strategies for adults with ASDs (sometimes referred to as "neuro-atypical" people). Strategies for partnering with trainees during development and remediation are discussed.

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10.2 The Patient's Experience: Patient-Centered Remediation of Students

When a student fails a high-stakes clinical skills exam, remediation teams must determine why in order to make sure the student can be coached on specific effective strategies to make sure he or she is both successful on the next exam and in all future clinical encounters. The team and the student must answer these important questions: What are the main causes for the student's difficulty with the exam? How does this manifest behaviorally? What is the performance data and how do we understand them?

Consider the following comments written by standardized patient (SP) evaluators of students who performed poorly on an eight-case Objective Structured Clinical Examination (OSCE):

1. "I felt so bad for this student. He was so painfully awkward and uncomfortable, and I wanted to help him. He wasn't able to reassure me at all."
2. "She was very cold and unemotional. I felt like she didn't know she was supposed to care about the patient."
3. "He sat really close to me, too close to me. He was super-intense. I felt scrutinized, like a lab specimen."
4. "She just stared at me. When my character revealed that her husband had recently died, the student just said, 'OK' and kept asking questions off a list."
5. "When he started the physical exam, he just raised my gown, without even saying anything. Who does that?"
6. "Her tone was just off. She smiled and laughed inappropriately and it was demeaning to me, completely unprofessional."
7. "He never looked me in the eye. Our interaction never got off the ground, so

(continued)

he didn't get a lot of the key information. My character's case includes a domestic violence component, and she would not have trusted him with this information."
8. "When I asked what test they would have to do for my heartburn, she used all this jargon—it was like reading a medical textbook. She said 'esophageal manometry' and then went into excruciating detail about how they would thread a tube into my nose and down my throat. I don't think a patient would come back after that!"

Now try to match the eight SP comments above with the *primary* explanations for the student's poor performance listed below:

(a) Did not prepare for this exam?
(b) Had an insufficient foundation of medical knowledge?
(c) Was severely anxious during the exam?
(d) Did not receive sufficient actionable feedback prior to this exam?
(e) Interacted with "real patients" much better than the exam performance suggests?
(f) Was unaware of his or her impact on the patient?
(g) Had difficulty reading facial expressions and other nonverbal cues?
(h) Had difficulty understanding the encounter from the patient's point of view?

Student 1's awkwardness stemmed from self-described anxiety (c). Student 2's remoteness related to her inability to treat the SP as she would treat a patient she encounters in clinical settings (e). Student 3, who was too intense, had been told about it in the past, but had not been given tools to correct it (d). Student 4, who did not interact with the standardized patient with empathy, had not prepared for the exam (a). Student 5, who raised the SP's gown, had

(continued)

no awareness of the impact he was having (f). Student 6, who laughed inappropriately, had difficulty seeing the encounter from the patient's point of view (h). Student 7, who did not make eye contact, has difficulty reading nonverbal cues (g). Student 8's use of jargon and procedural details stemmed from her lack of mastery of medical knowledge (b).

In the examples above, all of the student behaviors described by SPs had a negative effect on the interview process—and prevented effective information-gathering—but for very different reasons. Some of the reasons appear situational (test-taking anxiety, inability to suspend disbelief for an examination), and others appear more global, associated in some cases with difficulty in interpersonal interactions. The job of the remediation team is to put an SP's comment into the context of the student's overall clinical skills performance over time. The team must discern evidence of a behavioral pattern by reviewing the student's performance in other cases in the same OSCE, in past OSCEs, in clerkships, and by interviewing the student to determine the student's understanding of his or her exam performance.

If the student has had success in previous OSCEs and in patient interactions on various clerkships, any number of temporary, situation-specific factors could explain the student's current exam failure: lack of preparation, lack of sleep, specific fears, and general anxiety (particularly for summative exams with undifferentiated cases). Any student may temporarily appear to be disconnected from a patient, unsympathetic, overly formal, or severely awkward.

But how can the remediation team help the student who dreads OSCEs; who has a history of "awkward" or "odd" interactions; who, in an interview with a remediation team member, displays some of the same behavior (avoidance

of eye contact or intense eye contact, awkwardness, overly formal speech); and who lacks of awareness of how his or her demeanor creates a stiff or uncomfortable interaction?

Four of the students in the example were identified as sharing very similar underlying issues. Student 1 attributed his awkwardness to performance anxiety. Student 3 exhibited an inappropriate intensity. Student 5 did not understand that raising a patient's gown could be perceived as intrusive. Student 7 tended not to make eye contact and knew he missed signals from others. All four tended to focus on the diagnostic task at hand rather than on building rapport with a patient. They felt that "the rules" for interviewing patients were constantly changing, and they described working very hard to "be better" but were frequently demoralized. In each case, a pattern of inability to meaningfully connect with patients became more visible and increasingly interfered with their clinical competence, as their training demanded more complex and integrated clinical skills.

10.3   The Path to Clinical Competence: Interpersonal Awkwardness Is Normal

Awkward interpersonal communication is a common developmental issue for many medical trainees. We expect that medical school graduates will ultimately become master clinicians—accessing vast stores of medical knowledge while displaying compassion toward patients and excellent clinical reasoning in arriving at diagnostic and treatment decisions. However, the paths to that outcome are widely varied and never as linear as students would hope. Students are often unaware that developmental waxing and waning is a necessary aspect of learning that all their teachers, now master clinicians, have experienced during their own training.

Early in training, students often find themselves "toggling" between thinking through case algorithms and developing rapport with patients, unable to do both simultaneously. This lack of

automaticity interferes with competent communication. However, when this "on or off" binary state lingers well into training years, students may have difficulty developing the integrated clinical skills needed to perform competently in a busy clinical environment. Students must understand that professional communication skills are not simply "nice to have," but constitute a critical core clinical skill.

Mastery of clinical interviewing requires students to have more than a strong knowledge base and clinical reasoning ability. Poor relationship skills severely limit the quality of information obtained in patient interviews, prevent a sense of trust from developing between clinician and patient, and can result in patients not adhering with treatment recommendations. Mastering relationship-building skills is the foundation for patient-centered care. In addition, students should be aware of unexpected consequences of having poor communication skills. For example, clinicians whose patients perceive to be uncaring are more likely to be targets of lawsuits than clinicians who are perceived as caring, even if the quality of care is the same. Huntington and Kuhn summarize the situation: "Patients are not likely to sue physicians with whom they have developed a trusting and mutually respectful relationship. Simply put, patients do not sue doctors they like and trust. This observation tends to hold true even when patients have experienced considerable injury as a result of a 'medical mistake' or misjudgment" [1].

10.4 Autism Spectrum Disorder

10.4.1 Avoid Labeling

Students and faculty alike embrace the popular psychology idea that socially awkward students are "somewhere on the autistic spectrum." The remediation team must carefully focus on behaviors that would improve students' clinical competence and avoid reinforcing notions that because students struggle with having a confident professional demeanor, they have a disorder.

The remediation team must also have a clear understanding of the true signs of autism so that the team can refer a student for accurate diagnosis and access to learning strategy coaching. Most students who are struggling to acquire communication skills do not meet the criteria for ASDs. The few students who are formally diagnosed with autism spectrum disorder typically express relief at finally understanding the reasons for their lack of progress.

10.4.2 Recognizing and Diagnosing ASD

The prevalence of ASD (all forms, from mild to severe) is estimated by the CDC to be about one in 88 children within the general population [2]. The definitions of autism and the nomenclature of autism spectrum disorders (ASD) have changed, as outlined in the recently released Diagnostic and Statistical Manual of Mental Disorders V [3]. The "Asperger syndrome" designation that defined a high-functioning form of autism that had a cluster of symptoms including impaired social functioning is no longer included in DSM-V. This remains a topic of controversy.

Three core features of autism are social and communication deficits, fixated interests and repetitive behaviors, and physical awkwardness. Social communication deficits include the lack of typical back and forth in conversation; lack of typical eye contact, body language, and facial expression; and difficulty maintaining relationships. A medical student with features of ASD is by definition high functioning intellectually, has been able to acclimate to new situations to some degree, and has learned to compensate for some missing behaviors that others might automatically display.

It is not unusual for highly educated adult professionals, including medical trainees and engineers, to struggle with undiagnosed ASDs well into adulthood [4]. Recently, organizations that represent the interests of "neuro-atypical" adults (versus non-autistic neuro*typical* adults) have begun working with the industry to enhance the likelihood of finding "good-fit" jobs for people who are neuro-atypical or who have disorders that make it difficult to interact with people. For instance, one international foundation,

Specialisterne, recently partnered with software engineering giant SAS to develop a global jobs network based on the premise that some roles on highly technical teams require exactly the type of thinking that neuro-atypical people possess [5].

10.4.3 Different Perspectives on ASD

Students who have had difficulty mastering the interpersonal skills required to "activate" patients may wonder if they have a condition or disorder. Their self-diagnoses may include being severely introverted or shy, having mild obsessive-compulsive disorder, or "being slightly autistic." The remediation team can serve a vital function in reducing students' sense of stigma associated with ASDs, to educate about the features of ASD, and to promote understanding of those who describe being neuro-atypical as an alternative way of thinking rather than as a syndrome.

Temple Grandin, PhD, is a well-known writer and speaker with autism whose professional work highlights the science of autism and the benefits of "thinking differently." She was recently asked to comment on a study suggesting that transcranial magnetic stimulation (TMS) could produce specific brain activity leading to improved ability to feel the emotions of others [6]. Dr. Grandin envisioned that for people with ASD, the procedure could have both positive effects (improving children's social learning) and negative effects (reducing the "single-mindedness of purpose" she identifies as a feature of autism and that she considers an element of her professional success) [7]. Other writers similarly articulate the advantages of being neuro-atypical. Diagnosed with ASD only after a painful and protracted experience, Sean Barron wrote, "[Neurotypicals] inject so much psychodrama into their social and professional interactions; they let their emotions take over their intellect. It causes a lot of problems that a little logic and common sense could prevent… [Neuro-atypicals] can often remain calm and focused in situations that drive more socially-oriented people off the edge of reason" [8].

10.4.4 Demystification of ASD and Initiating Remediation

Clinical skills remediation teams should be prepared to address a wide range of student fears and to reassure students that most issues can be addressed through practice and mindfulness. The remediation team members become role models through active listening, by offering concrete action plans, and by being supportive of insight and practice—all skills we expect the students to demonstrate in clinical settings. Being aware of our own fears and biases is critical to providing effective remediation for students. Particularly for communications skills remediation, the team should include professionals who have been trained in insight-oriented disciplines and who are attuned to interpersonal emotional impact. Psychologists and others with therapy training understand their own emotions as data to be used in decoding interpersonal dynamics. Similarly, the team should include professionals who can increase students' awareness of the nonverbal communication of body tension, unblinking eyes, hunched shoulders, etc. and give the students tools to remove stress-filled body language from their encounters with patients.

10.4.5 Remediation of Students with Awkward Interpersonal Interactions

Case 1: MF

Presenting Problem

MF failed the comprehensive clinical skills exam, a multi-station OSCE at the end of his clerkship year. His communication score was in the lowest 10 % of his class, but he performed relatively much better on history-gathering and physical exam skills. He wrote post-encounter patient notes that demonstrated exceptionally good clinical reasoning. However, all of the SPs reported that he did not make eye

contact, he did not elicit or acknowledge the SP's discomfort or emotions, nor did he make any empathic comments. They also found him "odd and awkward." One SP was unnerved that MF had a "smirk on his face" while conducting the physical exam.

History in Medical School

MF was enrolled in our medical school for more than 7 years, having started before the pre-clerkship curriculum included rigorous high-stakes SP exams. He also completed a heavily mathematics-oriented PhD between the pre-clerkship and clerkship years.

Pre-clerkship faculty who had worked with MF reported that he was very bright and did well on written assignments but that he was "odd" in the classroom. He avoided eye contact with teachers and his peers, fidgeting with his notebook and pen during class. MF "hugged the wall" when walking in the hallway. His PhD thesis advisor reported that his work was very rigorous and detailed, but at times MF needed to be coached to see the larger context. Despite his odd behavior, he was well liked by his peers who were protective of him; they rallied around him when he was required to practice interviewing in the group setting. Some residents in his clinical clerkships found him "weird" and difficult to work with, while others reported that he was very responsible and smart.

Remediation

In his initial remediation meeting, the faculty remediation team member noted, "When we sit down together, he is soft-spoken and polite but visibly uncomfortable. When I ask him what he thinks about his exam results, he answers, "I am not surprised. I have never been good with people. My clerkships were so hard. I did fine on the Shelf exams and ok with the patients, but boy, did I blow it with the residents. I guess it is a good thing I can always go back to the lab. Do you think I have Asperger's?"

The remediation team collaboratively developed a plan with MF that focused on increasing his awareness of his nonverbal behavior and its effect on patients. The team was sensitive to MF's demoralization, provided positive feedback on the many steps he had taken to form his professional identity, and helped MF to identify his professional goals and the steps he would take to achieve them.

Emotional intelligence was a useful framework for MF in becoming aware of his own internal state and behavior in a clinical encounter (self-awareness), choosing which behaviors to display and which behaviors to contain (self-control), noticing the emotional state of the patient (awareness of others), and noticing the change in the patient based on MF's choice of behaviors (impact on others).

MF was extremely apologetic at the beginning of remediation, which seemed to increase his self-consciousness, self-critical assessment, and awkwardness. He watched a video of himself interacting with an SP and was not aware of how closely he sat to the SP, or of his fixed grimace as he intently listened to the SP. The challenge was to find a state in which MF was comfortable, so that he could reference it while he practiced. Simply asking him to "smile more" or "make more eye contact" would not be sufficient. In one instance, he was asked to think of his favorite movie. A natural, pleasant smile drifted across his face. His awareness of that emotional state (relaxation, enjoyment, lack of self-consciousness) and the change in physical demeanor that went with it (less intense gaze, less awkward posture) were the building blocks for MF to practice choosing behaviors in his interactions with patients. [He was asked which movie had brought the smile to his face, and he answered, "Fargo," perhaps one of the most deadpan black comedies ever filmed.]

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As part of his remediation, he completed a series of exercises that focused on detecting the emotions of others. He invited feedback from several of his fellow students on his interactions with them and worked hard to incorporate their observations into his practice. MF worked closely with our SP trainer, a drama therapist and experienced stage director, to find ways that he could authentically express interest and empathy. MF had several opportunities to practice with an SP and receive real-time feedback so that he could adjust his approach without any negative consequences. In both the emotional intelligence work and the simulation practice of clinical skills, the principle of focusing on progress and positive feedback was key to lifting MF's initial sense that nothing could be done to help him.

MF's remediation addressed his question "Do I have Asperger's?" by discussing the evolving understanding of autism spectrum disorders, the diagnostic criteria, and the view of ASD as seen from the "neuro-atypical" perspective. MF was given access to resources if he chose to pursue the question in detail.

Outcome

MF retook and passed the comprehensive clinical skills exam. Throughout remediation, he had completed reflections about each stage of remediation and what he was learning. MF reported great relief that he could improve the impact he had on patients in clinical interviews. He described his own surprise at his improved ability to "read people" after extensive practice. He also described a deeper appreciation of his own strengths, including his analytical abilities and his perseverance. As part of the remediation process, through discussions with the team, his thesis advisor, and his family, he recommitted to his

professional goal to return to a research laboratory setting and chose not to pursue training in a clinical discipline.

Case 2: CK

Presenting Problem

CK failed the comprehensive clinical skills exam, a multi-station OSCE at the end of his clerkship year. His performance on history-gathering and physical exam skills was poor, and even though his communication scores were higher, SPs were very disturbed by his stilted demeanor and formal, exceedingly courteous manner, as well as his voice. Several SPs asked, "Is he making fun of me?"

History in Medical School

CK had passed all of his clerkships but had notable difficulty on OSCEs. He was offered additional preparation for the comprehensive clinical skills exam but had declined help.

Remediation

CK attempted several strategies on his own to improve his clinical skills exam performance. He had enlisted his family to help him identify problematic behaviors, which he then translated into a list of "better" behaviors he needed to practice, like having a firmer handshake or pausing when he introduced himself. However, the focus on the details of his own performance made him highly self-critical and distracted.

Our team discussed his need to improve his history-gathering and physical exam skills and to address the impact his demeanor was having on SPs. The question was raised about his level of anxiety and whether anxiety was affecting his performance. His clinical reasoning was a focus

(continued)   (continued)

of remediation, so he immediately began working with a faculty remediation team member on practice cases.

When CK met with the SP trainer, the trainer was reminded of another student the team had discussed, who had said, "I see myself as waiting until the patient tells me I have been helpful, and then I can end the interview." For that student, re-framing her role from "helper" to "member of an expert team" led to improved confidence and to a display of more authority—which was more comforting to patients than she had anticipated. CK revealed to the SP trainer that he too saw himself as primarily a "helper" and that patients' anxiety made him extremely uncomfortable, as if the patients' emotion indicated that he had failed them. Once this core issue was uncovered, the SP trainer partnered with CK to create a "mission statement" to be fully present for the patient, focused on the patient, during clinical interviews. CK also found that having this mission took the focus off him, and his own awkwardness diminished.

The SP trainer used the principles of focusing on progress and giving positive feedback, resulting in CK becoming less self-critical. CK was surprised that in working with the SP trainer, he did not display any of the awkwardness noted in the exam video. Once this foundation was created, CK eagerly worked on concrete issues for improvement in his communication skills without the layer of self-criticism with which he began remediation. The normal pitch and rhythm of his voice appeared in practice interviews. He described that being calm allowed him to recall medical knowledge details that he had learned on his rotations.

Although it was clear to the remediation team that CK's anxiety, performance issues, and "helper" identity had deep roots and a

deep personal meaning, the remediation interaction with CK remained focused on preparing for the exam rather than on introducing any deeper exploration that would have increased his sense of vulnerability.

Outcome

CK retook and passed the comprehensive clinical skills exam. However, in several cases, SPs noted that he still exhibited some of the problematic behaviors.

The impact of remediation on CK's overall confidence in himself as a clinician was dramatic. He described the work with the SP trainer as "perhaps the most insightful 2 h of my [medical school] training to date." CK described remediation as giving him perspective that he will bring with him into his professional life.

Students in both cases presented to the remediation team with awkwardness and a self-critical, demoralized demeanor. SPs had reacted negatively to both students. Both had demonstrated difficulties on prior OSCEs and benefited from mindfulness techniques that help people with communication disorders, even though neither student had been referred for or diagnosed as having a communication disorder. Specifically, using frameworks and techniques such as emotional intelligence, appreciative feedback, visualization, and presence helped these students in their interactions. (See Chaps. 4, 15, and 16 for specific guidance steps.)

10.5 Tips for Remediation

10.5.1 Interpersonal Skills Can Be Taught and Learned

An excellent resource for remediation teams and for students is journalist David Finch's poignant recounting of his discovery that he is a

high-functioning person with autism. His memoir, *The Journal of Best Practices: A Memoir of Marriage, Asperger Syndrome, and One Man's Quest to Be a Better Husband*, describes his profound relief to be diagnosed and his subsequent high motivation to address unintended and painful relational problems that were caused by his atypical communication [9].

A powerful remediation tool for communication skills is the video-recorded structured interview. Students can self-assess their performance against a checklist of expected behaviors and then compare their own assessment to the ratings given by SPs. Students then can discuss with remediation team members what they learned from watching the video and how it further shapes their remediation plan. Ideally, students would have access to best practices video recordings of cases to identify several ways that others approach the same OSCE case.

Students can also work directly with SPs to engage in a practice case and be given immediate feedback about the impact of the student's verbal and nonverbal communication on the patient.

10.5.2 Emotional Intelligence as a Framework

As mentioned above, a useful framework for improving interpersonal effectiveness is emotional intelligence [10–12]. A number of exercises and tools based on the emotional intelligence model are available, including a self-assessment and a 360° assessment. This emotional intelligence model can be applied to highly behaviorally based interventions, such that "self-awareness" can be concretely defined as encompassing an awareness of state of mind and the desired behaviors to display in a given interview (Table 10.1).

A fascinating approach to learning how to understand behavioral clues such as accurately reading facial expression is called the FACS, or Facial Action Coding System [13]. Analytically oriented students will find the approach to be detailed but precise, providing a method for decoding others' expressions as well as exploring

Table 10.1 Using emotional intelligence as a framework for guiding trainees with interpersonal difficulty

	Self	Other
Awareness	Displaying self-awareness "I know that when I am intense, it scares my patient"	Displaying other-awareness "I will know how well the interviews went by watching for the patient's relaxed facial expression and relaxed body posture, and by asking if I addressed the patient's concerns"
Management	Showing self-management "I will make sure I do not sit too close to the patient; I will break eye contact so that I do not stare; and I will nod to let the patient know I am listening"	Ability to influence others "I plan to ask the patient to follow up with my treatment plan. I will confirm that the patient trusted me when the patient says that my advice made sense"

the affect that the students convey. FACS is a concrete way to explore the gap between what people intend to convey and what others receive.

10.5.3 Organizing Principles for Remediation in Learners with Suspected ASD

Five questions arise in ASD research and treatment, as described by Grandin, that are organizing principles for many communication trainings:

1. *Why build a relationship?* Neuro-atypical people can find interacting with "neurotypicals" exhausting, but managing complex emotional interactions is a requirement of medical practice [14].

2. *What is my co-worker/family member/schoolmate really saying to me?* The Affective Computing Group at MIT's Media Lab, expanding on Ekman's work in understanding facial expression, has developed evidence-based training tools for people who have difficulty decoding the facial expressions of

others [15]. For example, although people think that they frown when frustrated, research shows that people make brief smiles of frustration that a computer algorithm can distinguish from smiles associated with positive affect. Medical trainees with awkward interpersonal communication may benefit from reading about this and engaging in training based on this line of research.

3. *What do people think I am communicating?* A struggling trainee can engage in working with trusted others to better understand how to make simple distinctions between what a person intends to convey (e.g., being honest) and how the message is received (e.g., tactless and hurtful) [16].

4. *Do I have to act like I am not neuro-atypical?* Based on lessons learned in her own life, Grandin makes the following observation: *"I have learned about relating well to people. One unwritten rule is this: Whether or not a person has autism, fitting in socially requires that we each play by certain rules that form the structure of our society… I adjust to the situation instead of going into a situation and expecting it to adjust to me."*

5. *How do I learn to navigate so that I can be successful and independent?*
   Autism is expressed differently across individuals, and thus their "navigation needs" will likely need to be tailored. Aspy and Grossman describe the elements that should be included in any intervention designed for people with ASD. In addition to communication training, when working with neuro-atypical individuals, remediation coaches need to attend to analyzing the unique demands on them of tasks neurotypicals may find easy (e.g., such as asking for and getting help on clerkships) and working to find tools and strategies that help lower this demand enabling the neuro-atypical to function in complex environments [17].

All our work with medical trainees rests on the concept of the learning feedback loop: setting a goal, practicing, assessing progress toward that goal, then setting a new goal (next steps). In remediation, it is particularly important for the medical trainee to display the ability to go through these steps (see Chaps. 4 and 16). It can be particularly helpful to teach the student to conduct an ongoing gap analysis between the professional behavior a given clinical situation calls for (desired impact) versus the actual behavior the student displays in that clinical situation (actual impact).

We use the simple but rigorous approach above to design communication remediation plans as well.

1. *Why build a relationship?* Students whose original focus in patient interviews was data gathering to the exclusion of rapport building will emerge with a clear understanding of relational behaviors as the key to obtaining an accurate and complete clinical picture in a patient interview. These learners may also respond to data showing fewer malpractice claims and better clinical outcomes as a result of interpersonal connection and empathy.

2. *What is the patient really saying to me?* Students who initially could not read verbal and nonverbal signals from patients will understand that all patients are at a vulnerable moment regardless of the emotion they display. They can learn to ask about and respond to the patient's concerns.

3. *What am I really saying to the patient?* Students who were unaware of the specific behaviors that were limiting their clinical effectiveness will learn how to conduct an ongoing gap analysis between what they intend and how their message is received.

4. *Do I have to have a "personality transplant"?* Students who were self-critical and thought the only effective way to conduct a good patient interview would be to imitate someone else will begin to accept that their own authentic professional identities grow more comfortable with themselves.

5. *How do I learn to do what this role requires of me?* Students will develop individual learning plans based on their specific identified communications issues (speed of speech, interruptions of patient, questions perceived as tactless, abrupt transitions, eye contact, sitting too close, touching without permission, etc.). They will also identify and address barriers to practice of these skills in authentic situations (denial, shame, anxiety, competing demands).

10.6   Conclusion

As medical technology innovations take center stage, medical schools need to both implement technological change while ensuring that students develop into humanistic doctors. Moyer et al. delineated the experiences that tend to inhibit or encourage the development of humanism in medical students: "Students… reported that experiences of greatest intensity (e.g., being involved in a case where the patient dies), participatory learning experiences (e.g., volunteer work, international clinical rotations), and positive role models had the greatest effect on their development of humanism, whereas stressful conditions, such as a busy workload or being tired or postcall, inhibited their humanism" [18]. Thus, medical schools would do well to ensure that students have powerful, participatory experiences and faculty who embody and teach humanistic values. This chapter has sought to delineate techniques and approaches to helping students with difficulty creating rapport, highlighting how to encourage the importance of communicating with patients as individuals rather than as cases. With patience, hard work, and structure, there is significant hope for these learners.

References

1. Huntington B, Kuhn N. Communications gaffes: a root cause of malpractice claims. Proceedings. 2003;16(2):157–61. PMCID: PMC1201002.
2. Baio, J, et al. (2012). Prevalence of autism spectrum disorders—autism and developmental disabilities monitoring network, 14 sites, 2008. MMWR Surveill Summ. 2012;61(SS03) 1–19. Available from: http://www.cdc.gov/mmwr/preview/mmwrhtml/ss6103a1.htm
3. American Psychiatric Association. Diagnostic and statistical manual of mental disorders: DSM-5. Washington, DC: American Psychiatric Publishing; 2013. p. 947.
4. Volkmar FR, Paul R, Klin A, Cohen DJ, editors. Handbook of autism and pervasive developmental disorders. Vol. 1: Diagnosis, development, neurobiology, and behavior. 3rd ed. Hoboken, NJ: Wiley; 2005. 792 p.
5. Cook G. The autism advantage. The New York Times Magazine. 2 December 2012. Available from: http://www.nytimes.com/2012/12/02/magazine/the-autism-advantage.html?pagewanted=all
6. Enticott PG, Kennedy HA, Zangen A, Fitzgerald PB. Deep repetitive transcranial magnetic stimulation associated with improved social functioning in a young woman with an autism spectrum disorder. J ECT. 2011;27(1):41–3. doi:10.1097/YCT.0b013e3181f07948. PMID: 20966773.
7. Grandin, T. The way I see it: opening the door on emotions. Autism Aspergers Digest. March–April 2013. p. 12–13.
8. Barron J, Barron S. There's a boy in here. Arlington, TX: Future Horizons; 2002. p. 268.
9. Finch D. The journal of best practices: a memoir of marriage, Asperger syndrome, and one man's quest to be a better husband. New York: Scribner; 2012. p. 240.
10. Goleman D. Emotional intelligence: why it can matter more than IQ. New York: Bantam Books; 1995. p. 384.
11. Goleman D. Working with emotional intelligence. New York: Bantam Books; 2000. p. 400.
12. Goleman D. The brain and emotional intelligence: new insights. Northampton, MA: More Than Sound LLC; 2011. p. 72.
13. Ekman P. Emotions revealed: recognizing faces and feelings to improve communication and emotional life. 2nd ed. New York: Owl Books/Henry Holt; 2007. p. 320.
14. Grandin T, Duffy K. Developing talents: careers for individuals with Asperger syndrome and high-functioning autism. Shawnee Mission, KS: AAPC Publishing; 2008. p. 185.
15. Hoque E, Picard R, McDuff D. Exploring temporal patterns towards classifying frustrated and delighted smiles. IEEE Trans Affect Comput. 2012;3:3.
16. Grandin T, Barron S. The unwritten rules of social relationships: decoding social mysteries through the unique perspectives of autism. Arlington, TX: Future Horizons; 2005. p. 383.
17. Aspy R, Grossman BG. The ziggurat model: a framework for designing comprehensive interventions for individuals with high-functioning autism and Asperger syndrome. 2nd ed. Shawnee Mission, KS: AAPC Publishing; 2011. p. 390.
18. Moyer CA, Arnold L, Quaintance J, Braddock C, Spickard III A, Wilson D, Rominski S, Stern DT. What factors create a humanistic doctor? A nationwide survey of fourth-year medical students. Acad Med. 2010;85(11):1800–7. doi:10.1097/ACM.0b013e3181f526af.

Physician Wellness and Remediation

11

Sarah Williams

Abstract

Medicine is an exceptionally demanding as well as rewarding profession. Physicians must maintain the ability to work hard, at optimal levels of excellence, under high levels of demand and accelerating change in the healthcare environment. This requires stamina and adaptability. Work-related distress is common in trainees and physicians and is associated with significant suffering, incompetence, lapses in professionalism, and attrition from the profession. At the worst end of the spectrum for the individual, this distress may result in depersonalization, emotional exhaustion, and a sense of low personal accomplishment. These symptoms characterize a syndrome now called burnout. Physicians are also at high risk for other stress-related issues such as depression, anxiety, substance abuse, and suicidality. Certain individual (e.g., resilience, relational competence, active health maintenance) and workplace (e.g.: safety orientation, mutual support, and flexibility) characteristics protect against burnout. In this chapter, Dr. Williams draws from her extensive experience first as an Associate Internal Medicine Residency Program Director and then as a psychiatrist who developed and ran a physician wellness program for a large healthcare system. She describes the common causes and consequences of stress, distress, and burnout in medical trainees and practicing physicians. She discusses strategies for identification, prevention, and treatment of physician distress and suggests a four-pronged approach toward physician wellness, which includes both programmatic and individual strategies.

11.1 Introduction

"As a medical student my second night on call in labor and delivery, I pestered the attending doctors to let me deliver a baby, and six hours later I got my chance. With the guidance of a senior doctor, a plump, slippery, wriggling baby appeared in

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my hands. My adrenaline ran so fast that my hands shook when I clamped and cut the cord. I passed the infant to the pediatrician and was hooked." [1]

Sir William Osler said that being a physician is a "noble calling" that "provides the greatest opportunity to exercise the mind and heart," and I agree. Even in these difficult times for our profession, it is still a great privilege to be someone's doctor. However, it appears that fewer and fewer of us are actually able to experience these rewards and that physicians across the United States, Canada, and Europe are suffering from significant work-related distress [2, 3]. A recent study of physicians' satisfaction found that 1 in 5 young physicians would not choose a career in medicine again [4].

This level of distress, which affects our students and trainees as well, has serious consequences for patient care [5]. Medical students have higher levels of distress than nonmedical student peers, which negatively impacts their mental and physical health, reduces their altruistic values, and is associated with unprofessional behavior. All this may compromise patient care and the size of the physician workforce, particularly of primary care physicians willing to care for underserved populations. A compelling argument has also been made that physician distress threatens successful healthcare reform in the United States [6]. Because of the prevalence and serious implications of distress, the Licensing Committee on Medical Education (LCME) requires medical schools to have student wellness programs (accreditation standard MS-26), and a growing number of hospitals, as well as most state medical societies, run physician wellness programs.

At the same time as our young students and trainees are dealing with all the stresses of medical training and practice, they are also generally dealing with the exciting but challenging developmental tasks of late adolescence and early adulthood. These tasks include separation and individuation, personal identity formation, and development of meaningful adult relationships, partnering, and starting families, though these are often delayed or distorted by immersion in medical training [7]. As teachers and physician leaders, we have a respon-

sibility to support the healthy professional identify formation of our trainees and junior colleagues by helping them deal with the stresses and strains of medical practice.

In this chapter I will review the issues of stress, dissatisfaction, and suffering among our students, trainees, and practicing physicians—where it comes from, where it leads, how to recognize it early, and what we can do about it. I will review the most important manifestations of stress among medical students and residents, followed by a discussion of selected issues, including the problem of burnout, with particular relevance for teachers and learners. Finally, I will suggest ways to address these issues. These ideas have been informed by over 30 years of practice, as a medical educator, internist, and psychiatrist; the relevant literature; and my experience founding and directing a physician's wellness program in a large multihospital consortium. In this last role, I personally evaluated over 50 attendings, residents, and medical students from various fields, who were experiencing difficulties in their work, studies, and/or personal lives.

Common Causes of Stress in Medical Training and Practice

Intrapersonal Issues

- Perfectionism
- Excessive sense of guilt and responsibility
- Self sacrifice, delayed gratification
- Unmet need for approval and affirmation in work
- Lack of awareness of one's own needs and feelings
- Perceived lack of support from bosses and colleagues
- Perceived lack of connection with colleagues
- Fear of errors and bad outcomes

System Level Issues

- Work–life imbalance, long hours away from family and friends

(continued)

- Constant exposure to suffering, death, and disability
- Lack of control over practice environment
- High standards of individual responsibility
- Lack of structured mutual support
- Work demands exceeding capacity
- Work not recognized or rewarded
- Actual lack of support from bosses and colleagues
- Family and financial burdens

Case

I first became interested in physician stress and wellness 20 years ago when I was running a resident support group in the ICU. One day I arrived to find the residents visibly shaken. The night before they had cared for a 36-year-old mother of 3 who had come into the ICU in preparation for a procedure, was given pre-procedure medication, and died suddenly of an arrhythmia—a rare side effect of the medication. As we discussed the case, many of the residents had tears running down their faces. Finally, one of the residents asked, with anguish in her voice: "Where does all this stuff go? Is there, like, a compactor in our brain that just squeezes it all into a corner so we can go on?"

Obviously we can't compact all these difficult experiences into a corner of our minds forever; they do affect us emotionally, physically, and in our behaviors. Ideally, novice practitioners would have a regularly scheduled time to confidentially discuss emotionally difficult situations with peers, facilitated by a trusted expert as they did in this case. In this way physician trainees can "air" the range of feelings they are experiencing and

consider a repertoire of healthful ways to deal with these emotions. These strategics might include learning strategies to function effectively at work and maintain professionalism, while also respecting and allowing for their natural reactions. Unfortunately, even with such support, stress may manifest in negative ways; thus additional educational and supportive approaches are needed.

11.2 Stress, Distress, and Burnout

Although definitions vary widely, it is useful to distinguish among stress, distress and burnout. While *stress* is a normal, and in many cases a necessary, growth-promoting aspect of medical training and practice, *distress* is an unhappy, dysfunctional condition that can have a wide variety of physical, psychological, and behavioral consequences, some very serious.

Note that the signs and symptoms of distress are very similar to the "early warning signs of burnout," though in attenuated form. This is not surprising, as severe distress can often lead to burnout, as well as many of the other serious problems noted below, including depression, substance misuse, and suicidal thoughts.

Defining Terms
Stress: The body's reaction to a change that requires a physical, mental, or emotional adjustment or response. It is an adaptive response, which may not be experienced as abnormal or upsetting.
Distress: A pain or suffering affecting the body or mind.
Burnout: A psychological phenomenon (not a psychiatric diagnosis) characterized by depersonalization, emotional exhaustion, and a sense of low personal accomplishment associated with cynicism and decreased work performance. *Engagement, the opposite state, is characterized by energy, involvement, and efficacy.*

Burnout

Recently, a young attending came to me for help. He was tired and discouraged and no longer believed in his work or the value of his own efforts. "Since the age of 14," he said, "I have wanted to be a doctor—I have never wanted to do anything else. Taking care of patients has been my life; now I don't even want to go to work!" This young doctor was working in a clinic where he saw a patient every 15 min while trying to teach the students and complete the requisite paperwork. He told me, with shame and sadness, that his patients' needs "felt like burdens, their smallest requests annoyed him, and each day's tasks seem to stretch out in front of him like an endless desert he could never cross." He realized that for the first time in his life he was experiencing burnout.

- Anxiety, insomnia, and excessive daytime sleepiness
- Depressed mood and suicidal thoughts
- Anger at those making demands including patients
- Self-criticism and self-doubt
- Cynicism, negativity, and irritability
- Sense of being besieged and overwhelmed
- Exploding easily at seemingly inconsequential things
- Suspiciousness
- Feelings of helplessness and feeling stuck or trapped
- Loss of passion for work
- Loss of empathy, enthusiasm, and belief in medicine and oneself

"Burnout" can be conceptualized as a "final common pathway" of the many stresses and distresses of medical practice. Christina Maslach, who first developed the concept of burnout [7], describes it as having the following three major components:

- Emotional exhaustion (lost energy)
- Cynicism (lost caring and meaning)
- Lost sense of personal efficacy

In my experience, this is a state of great suffering, often described as "the soul-destroying agony of the healers." While more comprehensive lists exist [8] for the medical educator or administrator on the front line, it is most important to be aware of the most common warning signs so that you can identify this syndrome early and intervene as soon as possible.

Burnout and depression can look alike, but actually they are very distinct syndromes. The fundamental distinction is that the low mood, anhedonia, and other symptoms of depression usually manifest throughout all areas of life, whereas the suffering and symptoms of burnout are generally confined to the reactions, feelings, and behaviors relating to work and the workplace and often do not affect other areas of life.

While burnout can exist in isolation, it is usually part of a larger picture of stress-related suffering and existential angst about current difficult events and situations, as well as long-term psychological issues. It can also be associated with many of the manifestations of stress and distress described below; particularly depression and substance misuse.

11.3   Depression and Suicide

Depression can be expected to occur in 12 % of male physicians and 19 % of female doctors at some point in their lives, and suicide is 2–4 times more common among physicians than in the general population [9]. Among medical students, 25 % identified themselves as feeling down,

Early Warning Signs of Burnout
- Chronic fatigue: exhaustion, tiredness, and feeling physically rundown
- Physical symptoms (e.g., headaches, myalgias, gastrointestinal disturbances, palpitations, and breathlessness)

(continued)

depressed, or hopeless during the prior month, with some proportion having thoughts about suicide [10].

11.4 Alcohol and Substance Abuse

Case

Dr. R, a promising young male anesthesiologist suspected of having a drinking problem, staggers into the OR for an 8 am case, slurring his speech and making inappropriate remarks to female staff. His Chairman was notified, and Dr. R was immediately transported to an inpatient rehabilitation facility. After treatment, he was allowed to return to his position on probation under a detailed monitoring plan developed with his Chairman, in concert with the state's Committee on Physician Health.

At some point in their lifetime, 8–12 % of physicians will have problematic substance use [11]. Substance use and alcoholism, in particular, are still the major reasons for referral to physician wellness programs and disciplinary authorities. Fortunately, physicians are generally more responsive to treatment than the general population, with over 75 % working and achieving 5-year remission from substance misuse after treatment in their state's physician wellness programs [12].

11.5 Psychiatric Problems

Case

It was the first week of July, and his first night on call, when a new intern experienced his first psychotic break, leaving a trail of incoherent, bizarre admission notes to tell the tale.

The years of medical school and residency coincide with the age of onset of a number of serious mental illnesses, which can be worsened or precipitated by the stresses of medical training and practice. Unfortunately, mirroring how our society treats these illnesses, the student or resident who admits to having these disorders is still likely to experience significant stigmatization and discrimination, including dismissal from their training program [12]. Thus, while it is crucially important to insure patient safety as well as adequate diagnosis and care for these doctors, it is also important to insure against discrimination based on fear and ignorance. While true schizophrenia is usually incompatible with safe medical practice, this can be a very hard call, particularly given the range of severities and types of schizophreniform diagnoses.

However, there are many other psychiatric issues that—if properly treated and monitored—do not necessarily preclude completing medical training and being a good practitioner. These include unipolar depression and bipolar disorder, anxiety disorders, eating disorders, attention deficit disorder, and obsessive–compulsive disorders (which, if not too severe, can be adaptive in medicine). Of course if there is any significant symptomatology (e.g., if the physician has psychotic symptoms or is unable to think clearly or function adequately due to severe depression), or any chance that patient care could be compromised, the physician should be removed from patient care responsibilities immediately. Consultation from a psychiatrist experienced in both serious mental illness as well as the requirements and issues related to medical training should be sought. However, in dealing with psychiatric illness (as with any other illness), it is very important to distinguish between "illness" and "impairment" and to carefully assess the doctor's "fitness for duty," in addition to simply looking at his or her diagnoses [13, 14]. A very useful resource for this is the 2005 APA's Resource Document on Guidelines for Psychiatric Fitness for Duty Evaluations for Physicians [15].

If the manifestations are mild, trainees with challenging personality traits or frank disorders may function in medical training and practice,

though they may need some extra remediation (see Chap. 17). Severely personality disordered physicians usually become disruptive or display a great deal of problematic behavior (see below). Note that descriptions and criteria for all of these disorders can be found in the DSM-V, the revised DSM, which has just been released [16].

11.6 Work–Life Imbalance

Case

I was starting a night on call when I got the call that my 3-year-old son had been coughing for the past 2 h. Thinking it might be asthma, I quickly made arrangements for the babysitter to take him to the pediatrician's office, a few blocks from our home.

I, however, was an hour from home, covering 5 inpatient wards, two ERs, and the consult services of two hospitals. By the time I was able to contact the backup resident, it was past midnight, and I agonized about what to do. I thought about my son being sick (it was asthma) and needing me, though my husband was home and caring for him. I felt bad about making the coverage resident come in, and finally, I thought about a recent decree from the residency director that if you missed a call, you had to do 2 extra ones to make up for it and how that would take me away from my family even more!

And then I made a decision I still regret: I chose not to call in the coverage resident, stayed in the hospital, and finished out my call. When I got home the next morning and saw how sick my son was, I realized we could have lost him.

No resident should ever have to choose between caring for his patients and attending to a sick child. No student should ever be so exhausted, anxious, and cut off from family, friends, and nurturing activities that they become depressed or suicidal or decide to quit medicine altogether. And no young attending should be so distressed or overloaded that they start making errors. And finally, no pregnancy should be put at risk because of inflexible residency scheduling.

Doctors' work demands, as well as our strong personality characteristics (compulsiveness, perfectionism, self-sacrifice, and the tendency to delay gratification), can cause significant difficulties for their relationships, their partners, and their children. Surprisingly, there is very little data on physician marriage and family life, but the data that do exist are optimistic in that physician marriages are no better or worse than anyone else's and that the satisfaction of physician's partners is mostly related to the amount of "awake" time they are able to spend together [17, 18]. However physicians, particularly younger and women physicians, are fairly unhappy with their work–life balance and the amount of time they have for family life and other relationships [3, 19]. Strategies for helping our trainees with some of these difficult issues are discussed in Sect. 11.5 [20]

11.7 Personal and Programmatic Attitudes

In the West, as a consequence of our highly individualistic culture, we have tended to conceptualize competence as an individual characteristic. And yet it is becoming increasingly clear that healthcare is a highly relational, team activity requiring collaboration, excellent communication, and team skills [21, 22]. This change in focus and the need to adapt to new expectations is a major source of stress, especially among older physicians.

We come to medical training with a host of personal, generational, cultural, and familial expectations, particularly the values of striving, hard work, self-sacrifice, and the wish to help and care for others. Praiseworthy as these values are, under the pressure of medical training culture, these values may morph into extreme self-sacrifice and work hours, deferred gratification,

always putting patients' needs ahead of our own and those of our loved ones, and of being strong and tough no matter the situation. Not being "perfect" or "the best" comes to be viewed as abject failure, and admitting one doesn't know something is a shame to be avoided at all costs (including, at times, the patient's welfare).

We have also seen rapid and profound generational shifts in expectations and values, which are causing significant tensions in training environments as increasingly diverse generations of physicians bring different perspectives and expectations to the table. Areas of particular tension include the issues of work–life balance, expectation of self-sacrifice, and the value of institutional loyalty and respect for authority. It is common to hear program leaders bristle when trainees act "entitled" to flexibility and to considerations not available to them in their training years (back in the famous "Days of the Giants"). And yet they are not wrong in expecting different things: the modern generations have lived very different lives as a consequence of profound social changes [23].

11.8 Disruptive, Aggressive, and Arrogant Trainees

Disruptive physicians, although rare, can wreak havoc on a healthcare team, increase the distress of others, reduce the quality of patient care and safety, and expose systems to increased costs and legal liability. In 2009, the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) set new leadership standards addressing disruptive and inappropriate behaviors. These require accredited organizations to define a code of conduct and create and implement a program to manage disruptive and inappropriate behaviors among staff [24].

A number of things make these people particularly difficult to deal with, including their lack of insight into their own behavior, a desire by others to avoid conflict, and an exceptionally high regard for medical knowledge in our profession. This is illustrated by the popularity of television show characters such as Gregory House (Fox network series "House"), the cantankerous, arrogant, drug addict whose ridiculous "bullying" behavior is tolerated despite its dangers, because he is undeniably a brilliant diagnostician. Dealing with disruptive physicians, which is discussed below, is part of our responsibility to the public [25]

11.9 Prevention and Remediation: Promoting Well-Being and Improving Resilience

Becoming a doctor is a demanding and profound developmental process, involving not only the acquisition of vast knowledge and skill but also the development of mature judgment, responsibility, and the ability to make difficult decisions, to be a witness to suffering, and even to hold others' lives in your hands. How can we, as teachers and mentors, provide our students with the support and guidance they need to move through this process in a healthy, meaningful, and successful way? How can we help them maintain or develop resilience and well-being as well as healthy, rewarding relationships both within and outside of medicine? How can we help them find the profound rewards of medical practice and be the best doctors they can possibly be? And, finally, how can we develop and prepare ourselves to be the teachers and mentors our students need? Read on for some detailed responses to these questions!

11.9.1 What Is Resilience?

> **Case**
>
> Agnes is the third child of the Chair of Pediatrics to enter our medical school. Her two older siblings were very successful students and are both in prestigious

(continued)

residency programs. She performed well in the pre-clerkship curriculum and was reported to be a "fine" clerkship student. Her clerkship comments were strewn with comparisons to her sisters, highlighting her relatively reserved style. For example "Agnes is more "bookish and shy than Margret and Elizabeth…but once she speaks up it is obvious she knows her stuff."

Agnes failed the end of clerkship OSCE. When I sat down with her to begin the remediation, I asked, "What do you make of all this?" She diverted her eyes, wiped away a tear, and smiled: "I have never ever failed anything before—I was devastated." I moved my tissue box closer to her and continued: "So what did you first do when you found out?" "I called my mom and told her; she laughed and said, 'Welcome to medicine, sweetheart! Call your sisters and ask them for advice on how to work on these skills—and get to it.' Then my parents took me out for dinner. I heard their 'first failure' stories. Humbling stuff!" Agnes engaged in preparing for the makeup exam with enthusiasm and a self-deprecating sense of humor. She passed and afterwards thanked the team for their help.

Characteristics of Resilient Individuals
- Adapt to change
- Confident
- Persistent and committed
- Have a relaxed sense of humor
- Manage negative emotions rather than deny them
- Tendency to be composed and reflective rather than anxious
- Find a learning point in every situation
- Tendency to reframe negative situations as challenges
- Have a sense of purpose, professional code, or underlying moral belief
- Have a sense they belong to a coherent, supportive community

For highly perfectionistic individuals, a failure such as Agnes's would be a big blow to identity and self-confidence and very upsetting to everyone involved. It takes significant effort to mobilize the resources to overcome the emotional blow and get down to work. This is easier for some than others. Resilience is the capacity to live in a positive way despite stress and adversity that could have caused negative consequences. Resilient people, despite significant stressors or even trauma, are better able to manage stress, function well, and stay healthy physically and emotionally [20].

Although some people are inherently (or by virtue of experience) more able to deal with adversity, this resilience can also be fostered and taught. Effective resilience-enhancing interventions have been studied in the military and among child trauma victims. These include planned, graduated, and supervised exposure to challenging experiences to help individuals develop mature coping mechanisms. While research in medical education is limited, the structures needed for such interventions are already in place, to some extent, in typical clinical training. However, enhancing resilience among medical trainees also requires institutions and educators to adopt the stance that character "traits" are malleable, that well-being is important to monitor and encourage, and that enhancing social connections at work is valuable to developing as a physician. In addition, we can help our trainees become more resistant by giving them adequate support, helping them develop healthy cognitive patterns, behaviors, and stress management techniques; teaching self-awareness and the use of self-assessments; and promoting open discussions of authentically complex cases.

In this next section, I will describe a four-pronged approach to help us to do all these things!

> **The Four-Pronged Approach to Wellness and Resilience in Medical Training**
> - Create supportive, health-promoting structures (schedules, coverage arrangements, and social interactions) and challenge dysfunctional attitudes (personal and institutional)
> - The "Open eyes, Open doors" policy: Be available, be observant, and reach out: monitoring, modeling, and mentoring
> - Teaching: Group approaches and formal curricula
> - Intervention: What to do when you identify a problem

11.9.2 Creating Supportive Structures

11.9.2.1 Work Hours

There has been a dramatic effort to reduce working hours [26] in the United States over the past 2 decades due to increasing concern for physician well-being and after a number of high-profile malpractice cases blamed on poor resident supervision [27]. The American College of Graduate Medical Education (ACGME) enacted work-hour reforms in 2003 and, to further pursue a culture of patient safety, revised them in 2010 [28].

Reducing work hours has been associated with improved attention, reduced physical and emotional fatigue and distress among residents and has been associated with reduced mortality in patients in ICUs [29]. While residents report that work-hour reductions do improve their well-being, they are also worried, as are their supervisors, about the impact on education and patient care continuity [30, 31].

As the medical education historian Kenneth Ludmerer points out, work-hour reform alone may not be enough to reduce the serious stress of medical training. Attention also needs to be paid to working conditions and the scheduling of those work hours, the quality of the training experience, and the tension between service and education [32]. Practical approaches to meet these goals, as well as to enhance work–life balance, include: lessening the time spent on noneducational and non-patient care time, use of physician extenders and additional support staff (all of which would also increase time for meaningful interactions with patients), flextime and job sharing, as well as offering fulltime, on-site childcare [33].

11.9.2.2 Workplace Conditions

When physicians have some degree of control over the workplace, including the workplace environment, workflow, and interactions with other members of the team, wellness and satisfaction is enhanced. A recent study of burnout in primary care physicians was strongly correlated with poor patient care workflow and low control [34].

11.9.2.3 Trainee Assessment Strategies

Dyrbye and Shanafelt have found that in the preclinical medical school curriculum, a "pass/fail" grading system decreases competition and increases collegiality, and a criterion-based (as opposed to a norm-based) system which compares students' performance against each other has similar benefits in the clinical years [35].

11.9.2.4 Social Support

Support from colleagues and coworkers sustains us through the long and difficult hours away from our home lives, friends, and families. Chatting in the nurse's station, or mentioning a recent difficult event to a colleague and getting an understanding nod or comment can make us feel less alone and more connected to our work. Schools and training programs facilitate "team building" through activities like orientations and retreats in which fun and games are mixed in with work. For example, the annual retreats at the University of Portland Medical Center always include the famous "tug of war" between residents and faculty. The physician wellness program at the University of South Florida runs group trips where participants can gain continuing medical

education credits while getting to know each other in a nonwork environment. The traditional end of week "liver rounds" also served this purpose (though we are less sanguine about alcohol use these days!).

11.10 "Open Eyes, Open Doors": Monitoring

Case

I had just finished leading a small group conversation, and as we were walking away, I asked one of the students what he thought of the discussion. To my shock, he replied that he had not been able to pay much attention, as he was preoccupied with deciding whether or not to kill himself! He explained that he had access to a large gun collection and was thinking seriously of using one. I immediately walked the student to our psychiatric hospital. He was admitted and after a month as an inpatient was able to return to school, where he did quite well.

Those of us who are actively involved with trainees know that this "on the ground" observation and intervention can be an invaluable approach to identifying a trainee in distress. Paradoxically, many physicians, trainees, and medical educators may not access their clinical knowledge and judgment when dealing with students, residents, or peers. Hochberg et al. found that residents have an alarming lack of the recognition of the signs of stress, depression, and suicide among their peers. The good news is that a simple educational intervention can significantly improve awareness [36]. Expressing concern by checking in with learners in various educational venues including attending rounds, conferences, and the like, conveys that we care about how our learners (and colleagues) are adjusting and cop-

ing and acknowledge that emotionally difficult situations arise everyday in clinical practice. Even if the conversation is brief and superficial (which it often will be in a group setting busy with patient care responsibilities), the students and residents will know that the lines of communication are open and discussion is welcomed.

Most trainees are well versed in the "unspoken rules" of medical training and may be very reluctant to acknowledge problems or weaknesses. Signs of trouble are not always obvious: the student who is never prepared, never speaks up, or who looks like they have slept in their clothes may be suffering from significant distress, academic or personal. This may also be true of the "perfect" student, always early to rounds, having checked the labs and done all the assigned reading, but who seems tense, anxious and "buttoned up." Many medical educators make it routine to check in with all students on how they are managing the workload and other issues, emotionally and physically, asking a normalizing question such as "Clerkships can be surprisingly stressful, how's it going for you?"

Given the reluctance to express problems, a number of residency training programs and some medical schools have begun regular well-being screening of trainees as part of an integrated wellness program [37]. In addition to annual or biannual interviews, the most popular tool for this purpose is the Medical Student Well-Being Index (MSWBI). The MSWBI is a 7-item validated screening tool that identifies students who are suffering, but who may not seek help despite the likelihood of serious consequences. MSWBI's sensitivity and specificity were both over 90 % for identifying students with low "mental quality of life," recent suicidal ideation, or serious thoughts of dropping out of medical school. Endorsement of any item on this survey was associated with at least one of these outcomes. Recently, a 2-item version of the MSWBI—"I feel burned out from my work" and "I feel callous toward people since taking this job"— was found to be a similarly useful screening tool in students, residents, practicing internists, and surgeons [38].

Medical Student Well-Being Index

1. Do you feel burned out from medical school?
2. Do you worry that medical school is hardening you emotionally?
3. During the past month have you often been bothered by feeling down, depressed, or hopeless?
4. In the past month have you fallen asleep while stopped in traffic or driving?
5. During the past month, have you felt that all the things you had to do were piling up so high that you could never overcome them (overwhelmed)?
6. During the past month, have you been bothered by emotional problems (such as feeling anxious, depressed, or irritable)?
7. During the past month, has your physical health interfered with your ability to do your daily work at home and/or away from home?

11.11 Modeling

Case

Cynthia, a senior psychiatrist in the teaching clinic, had a longtime patient commit suicide after years of suicidal ideation. Cynthia had a strong bond with this patient and had frequently reiterated their non-suicide contract. In her suicide note, the patient thanked Cynthia for keeping her alive for 10 years, apologized for breaking their contract, and asked God to forgive her.

Despite her shock and pain, Cynthia immediately called a close colleague and mentor to discuss what had happened. She took time to reflect on her own feelings. The next day in the teaching clinic, she called a meeting to discuss this loss with

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the staff who knew the patient. Later that day a resident rotating through the clinic thanked her with tears in his eyes for her honesty. He recounted the story of a bad outcome that had occurred during his first year of residency, which had never been discussed by anyone involved.

Mistakes, bad outcomes, and the ever-present fear of a malpractice suit have been called medicine's "heart of darkness." The guilt, shame, and sense of loss are often so extreme that many of us are reluctant to share our feelings with colleagues. Cynthia, fortunately, knew better. By attending to her own need for support and to express and share reactions with colleagues, she modeled this behavior for others.

11.12 Teaching: Group Programs and Curricula

Case

Dr. S was a second year medicine resident who found himself sad, somewhat depressed and distracted following the death of a patient whom he had cared for in her last weeks and to whom he had become quite attached. While he often felt resistant to attending the resident support groups, this time he found himself looking forward to it, as he had not felt able to talk to anyone about his experience. In the group, Dr. S was able to express his sadness at the death of his patient and his feelings of helplessness at not being able to save her. He was very surprised to learn that a number of other participants—including the group leader—had experienced similar situations and emotions and were understanding and supportive. After the group his mood and

(continued)

concentration improved; he no longer feared making a mistake because of his distraction. He also found himself feeling less alone and closer to his fellow residents. The following year, when he had another emotionally and ethically difficult patient situation, he felt comfortable talking about it with a colleague and also sought out his former group leader for support and advice.

- Teaching: Not enough? Too much?
- Schedules, workloads, and coverage
- Mentoring
- Institutional support (or lack thereof)
- Relationships with colleagues and co-workers
- Inadequate resources, difficulties with labs, consults, and other department

Since it is not always possible, or even desirable, to address difficult events right when they happen ("hold the resuscitation—I need to process my feelings!"), students and residents need regularly scheduled, protected times when they can get together to discuss difficult events and situations, ideally with the guidance of a trusted facilitator. These meetings work best with naturally occurring groups (such as students rotating on medicine or surgery, or residents working together in the ICU) and when led by a skilled and trusted facilitator or group leader who the students or residents respect and perceive as understanding of their issues. Group meetings can involve a large variety of topics (see box "Common Group Topics").

Common Group Topics
- Difficult patients
- Death and dying
- Mistakes and bad outcomes
- Doctor–patient relationships and boundaries
- How much caring is enough? Too much?
- Ethical questions
- Supervision and oversight: Are we getting enough? Too much?
- Being thrown into difficult situations (e.g., delivering bad news) without preparation or support
- Educational requirements vs. time for clinical work

(continued)

To be effective, group programs need to be actively supported by the institution, reliably scheduled, confidential, and led by experienced and skilled facilitators (pizza helps as well). While they are definitely not group psychotherapy sessions, such groups can allow and encourage self-exploration and awareness, sharing with others to experience different viewpoints, but also to know one is not alone; to feel supported; to understand one's own reactions, vulnerabilities, and strengths; and to have more empathy and understanding toward others. It is useful to have ground rules that are stated at each meeting and respected. These rules can be negotiated at the initial group meeting but usually include:

- What is discussed in this group is confidential.
- Feel free to say as little or as much as you like.
- Speak for yourself only.

Over time, the trainees develop the habit of "saving" issues and problems for the group. As well, they will often come to identify the group leader as someone they can approach to discuss things more "in the moment" when there is a problem that just can't wait.

There are a variety of groups that are useful in the setting of medical training and practice; broadly, these can be divided into open-ended, nonstructured groups vs. those using more structured formats.

11.12.1 Open-Ended, Nonstructured Groups

In "open" groups, participants are invited to talk about anything involving their work or school experiences and related issues, including significant

things that have gone on in the past week, issues or problems on their minds, reactions to difficult events, and the like (see box "Common Group Topics"). An example of a successful group program of this type is the long-running, weekly "Humanism in Medicine" program for all internal medicine clinical clerks (fondly referred to as "touchy-feely groups") at the New York University School of Medicine [39].

11.12.2 Structured Groups

In a *Balint group*, named for their originator, Dr. Michael Balint [40], physicians meet regularly to discuss clinical cases in order to better understand the patient, one's own feelings and reactions, and the doctor–patient relationship. As compared with a regular case conference, Balint groups focus not on the medical questions, but rather on the provider's emotional reactions and the difficult personal, ethical, or psychosocial issues that are presented by the case. So, for example, in discussing a case involving a dying patient, discussion may range from the ethics and value of using strong pain medications at the end of life, to spirituality, or to difficult personal issues brought up by losing a patient to whom one has become attached. Balint groups are usually co-led by a physician and a psychologist who are trained in the specific method [41].

Narrative Medicine seminars originated by Dr. Rita Charon as part of the "Narrative Medicine Program" at the Columbia University Medical School are also structured around cases that present difficult emotional, ethical, or other issues for the practitioner. However, in these seminars, participants describe the patient or the case and their related issues in writing, which they then share with the group for discussion. Participants also may read and discuss relevant novels and stories, which greatly expand the breadth and depth of their medical education and training [42] (see also Chap. 14).

Less structured, open groups have the advantage of being flexible and able to respond to a wide range of issues; the disadvantage is that these meetings can become vague, meandering, and somewhat superficial "venting" sessions without expert facilitation. Conversely, the structured, case-oriented groups with their clear-cut boundaries and expectations, as well as the focus on a "case," can create a "distance" that makes people feel safer in bringing up personal material and encourages openness and self-disclosure. Many additional strategies to incorporate "personal awareness" activities into medical training have been reported in the literature [43]. However, the essential elements seem to be that teachers are committed to engaging in these activities and have the skills needed to facilitate a safe and growth-promoting discussion on these topics.

11.13 Teaching: Wellness and Resilience Curriculum

During my time with the physician wellness program, I taught a course called "Taking Care of Patients, Taking Care of Ourselves." Similar offerings are available in many medical schools, and many residencies now have courses on "the art of patient care," "doctor–patient communication," and "The Healer's Art" [44]. Such courses can be excellent venues for teaching wellness and resilience, as described below.

Wellness and Resilience Curriculum
1. Stress and distress in medical training and practice.
2. What is resilience and how do we learn and practice it?
3. Cognitive strategies: identifying distorted, dysfunctional, and/or rigid thought patterns and replacing them with more realistic, adaptive thinking. Learning to accept realistic limitations (of self and surroundings), while always working to improve them.
4. Stress management techniques: meditation, yoga, breathing, and relaxation exercises
5. How to find and hold onto meaning in your work.

Effective implementation of this curriculum is best done using a range of teaching approaches including brief lectures, small group discussions, film or literature, and experiential approaches such as role play and writing exercises. While some of these topics can and should be taught by medical school faculty with appropriate training, other aspects (e.g., "applied cognitive concepts" or "stress management") require an expert in the field, who then may be able to teach these skills to the medical faculty.

11.14 Basic Wellness Strategies

"Big 5" Wellness Strategies of Practicing Physicians:
- Spending time with family and friends
- Focusing on values and priorities and finding meaning in our work
- Religious or spiritual activity
- Adopting a healthy outlook, i.e., developing healthy cognitive and coping strategies such as a positive outlook and problem-solving
- Self-care including adequate nutrition, sleep, exercise, having a personal physician, and getting regular medical care (which most doctors don't)

The above box lists the five most common strategies used by experienced doctors to combat stress [45, 46]; similarly medical students who find meaning in their schoolwork, take time to engage in recreation and maintain a positive outlook are less likely to suffer burnout, whereas those who develop a "survival strategy" of deferring gratification and "just trying to get through it" are at greater risk [47].

11.15 Cognitive Restructuring

Cognitive behavioral therapy (CBT), which is being taught in some residency programs [44], offers a great "toolbox" of strategies to help us, our students, and our patients understand destructive thought patterns and behaviors and how to change them. A knowledgeable professional can teach these concepts with lots of illustrations and case examples to help learners make connections between the concepts and their own cognitive processes. For example, in the case of Agnes (above), the interventions of her professor and family helped her "reframe" failing the exam from a devastating failure ("catastrophizing") to a more realistic, adaptive appraisal of a common problem that could and should be addressed [48].

11.16 Stress Management Techniques

While we do not advocate that our residents chant "OM" in morning report, a basic acquaintance with the time-honored techniques of meditation, yoga, and relaxation breathing techniques (and their modern iterations) can lay the foundation for a lifetime of enhanced resilience and well-being [49]. This is particularly true for the practices of "Mindfulness," Mindfulness Meditation [50] and the very effective "Mindfulness-Based Stress Reduction Program," as developed by Jon Kabat-Zinn. There is now a robust literature describing the value of these techniques (particularly MBSR) for a variety of mental and physical problems [51, 52]. I find that residents and students are most comfortable learning these practices when they are taught experientially as techniques for helping their own patients deal with stress. When taught in this context, most trainees are very happy to take an hour out of their busy days to learn and practice a restful, relaxation technique! There are a number of useful resources to support this work [53–55].

11.17 Remedial Interventions: What to Do When You Identify a Problem

Escalating Interventions
- Explore problems and provide counseling
- Refer for outside therapy

(continued)

- Take to level of Dean of Students, Residency Directors, and Department Chairs
- On-site physician/student wellness programs
- Statewide (medical society) physician health committee
- Regulatory bodies, such as the Office of Professional Medical Conduct and state licensing boards.

Many of us avoid eliciting problems because we fear opening a "can of worms." However, most teaching institutions do have mechanisms, both formal and informal, for addressing distress and dysfunction in trainees.

Once you have identified a problem, the first step is to sit down with the trainee and explore the situation and, if it is relatively minor, to provide some basic counseling. Those who do not feel comfortable or skillful in this role can refer the student or resident to a colleague with the skill, or—if appropriate—for counseling/therapy outside the institution.

For more severe problems (e.g., major depression, serious academic or performance issues, disruptive behavior, or severe distress), it is necessary to take the problem to a higher level, which in most cases will be the school or medical center's student or physician wellness program. These programs are designed to help, support and remediate; they are places where students, and physicians can discuss their problems with a knowledgeable and empathic professional (usually a psychiatrist), and get appropriate assistance in a safe and confidential environment.

Frequently, the decision must be made whether and when to involve the relevant authority figure(s), usually the dean of students, residency training director, or appropriate department chair. There are certainly risks to involving "the authorities," including breaking confidentiality and trust, or putting the troubled person at risk of unnecessary scrutiny, restrictions, or sanctions. However, once the problem is severe enough to require therapeutic or physician health intervention, it is important—for legal, ethical, and safety reasons—that the responsible authority be informed and involved.

11.18 Committee on Physician Health

Most states, if not all, now have physician health committees, usually under the auspices of the state medical society. These are physician-centered programs whose mission is to help distressed and dysfunctional doctors and medical students, while protecting them professionally as much as possible, within the bounds of patient safety.

Anyone can make a confidential referral to his or her state's Committee on Physician Health (CPH), who will then reach out to the doctor in question, inform him or her of the referral, and offer a confidential evaluation. If the CPH decides that intervention is needed, and the physician is amenable, the program will work with the doctor and his/her institution to devise an appropriate program of intervention. Such a program may include determinations about workplace monitoring, if necessary, recommendations for treatment and monitoring of treatment progress, and—if the physician has not been allowed to work—determining when they are sufficiently improved to assume patient care responsibilities again. In my experience, these programs can be tremendously helpful, competent, and trustworthy.

Finally, physicians who have engaged in seriously negligent, criminal, or other unsavory practices may find themselves referred to their state's licensing board. These agencies are mainly disciplinary and regulative, rather than remedial, in that their mission is primarily to protect the public from unscrupulous, incompetent, or irresponsible physicians.

11.19 Dealing with Disruptive and Arrogant Physicians

It is important to remember that students and residents who are disruptive and arrogant may be suffering from many of the types of distress described

above, as well as from a number of serious psychological issues. In a longitudinal study, George Valliant found that physicians at high risk for unstable marriages and substance use came from the most unstable childhoods, marked by a lack of warmth, close relationships, and support [56].

Fortunately, the experience of those working in this arena is that some disruptive behavior and its consequences can be reduced with supportive leadership and comprehensive remediation. These include interventions aimed at improving stress management, enhancing resiliency, and improving communication skills in order to ameliorate negative behaviors [57] (see also Chap. 17). Expertise in remediating disruptive healthcare professionals is limited, but growing, as a result of the new Joint Commission regulations. A number of programs around the United States and elsewhere have extensive experience with effective remediation of physicians in practice, including the Foundation for Medical Excellence (http://www.tfme.org) [58] and the Physician Assessment and Clinical Education Program at the University of California in San Diego (http://www.paceprogram.ucsd.edu) [59].

11.20 Conclusion

Case

Dr. S, a 35-year-old vascular surgeon who was referred to me for problems with "anger management." By the time he got to me, Dr. S had already been mandated to the state Office of Professional Medical Conduct, for alleged behavior such as yelling at nurses in the OR, pushing an equipment representative, and shoving a cart up against a nurse. Dr. S was pleasant, somewhat arrogant, and described himself as a "very busy surgeon" who was angry at being referred, didn't understand what he had done wrong, and felt he was being unfairly persecuted.

(continued)

Over time, it became clear that Dr. S was way too busy, primarily because he believed he had to be all things to all people, could never say no to a last minute consult, or to a patient that no one else wanted to care for. He felt he had to attend to all the patients who came his way, however difficult their cases.

At the time of his "outbursts," he was under severe stress, having just lost a work partner, and having a newborn baby at home. In working with me, Dr. S learned that he could say no to unreasonable or impossible requests and was surprised to find that his colleagues continued to consult and refer to him. He also realized that his arrogance and angry demands were unreasonable, counterproductive, and interfered with having good, pleasant working relationships with co-workers. He began to have empathy and understanding of the needs and feelings of others and learned to interact in a respectful, team-oriented way with the nurses and OR techs on whom the success of his surgeries depended.

At one point he made a statement that, I think, really captures the paradox of physician privilege and stress, when he said that "on the one hand, I'm a top surgeon, the 'Big Kahuna'; I make money for the hospital and so I should rule the roost. On the other hand, I often feel abused, put upon, and taken advantage of; I'm taking care of everyone except myself!"

After 3 years, Dr. S was taken off the OPMC rolls and his name was taken off their website of problematic physicians. He was relieved to be out from under this burden, and was happy to have learned the important lessons of self-awareness, relationship, and self-care. In fact, he became one of the biggest supporters of the wellness program, sharing his newfound understanding wherever he went.

This case illustrates many of the principles and practices I have shared in this chapter. It is my hope that it will assist you in helping young physicians and other healthcare professionals to practice high-quality medicine while experiencing the rewards and joys of our noble profession.

References

1. Friedman A. Wanted: workaholics to become obstetricians. New York Times. 9 Aug 2005; Sect. F:5.
2. Spickard Jr A, Gabbe SG, Christensen JF. Mid-career burnout in generalist and specialist physicians. JAMA. 2002;288(12):1447–50. doi:10.1001/jama.288.12.1447.
3. Weinstein L, Wolfe HM. The downward spiral of physician satisfaction: an attempt to avert a crisis within the medical profession. Obstet Gynecol. 2007;109(5):1181–3. PubMed PMID: 17470602.
4. Buddenberg-Fischer B, Dietz C, Klaghofer R, Buddeberg C. Swiss residents' arguments for and against a career in medicine. BMC Health Serv Res. 2006;6:98–110. doi:10.1186/1472-6963-6-98. PubMed Central PMCID: PMC1564007.
5. Shanafelt TD, Bradley KA, Wipf JE, Back AL. Burnout and self-reported patient care in an internal medicine residency program. Ann Intern Med. 2002;136(5):358–67.
6. Dyrbye LN, Shanafelt TD. Physician burnout: a potential threat to successful health care reform. JAMA. 2011;305(19):2009–10. doi:10.1001/jama.2011.652.
7. Erikson EH. Childhood and society. New York: W.W. Norton; 1993.
8. Maslach C, Jackson SE, Leiter MP. Maslach burnout inventory. In: Zalaquett CP, Wood RJ, editors. Evaluating stress: a book of resources. 3rd ed. Lanham, MD: Scarecrow Press; 1997. p. 191–218.
9. Center C, Davis M, Detre T, Ford DE, Hansbrough W, Hendin H, Laszlo J, Litts DA, Mann J, Mansky PA, Michels R, Miles SH, Proujansky R, Reynolds III CF, Silverman MM. Confronting depression and suicide in physicians: a consensus statement. JAMA. 2003;289(23):3161–6. doi:10.1001/jama.289.23.3161.
10. Dyrbye LN, Thomas MR, Shanafelt TD. Systematic review of depression, anxiety, and other indicators of psychological distress among U.S. and Canadian medical students. Acad Med. 2006;81(4):354–73.
11. McCall SV. Chemically dependent health professionals. West J Med. 2001;174(1):50–4. PubMed Central PMCID: PMC1071235.
12. McLellan AT, Skipper GS, Campbell M, DuPont RL. Five year outcomes in a cohort study of physicians treated for substance use disorders in the United States. BMJ. 2008;337:A2038. doi:10.1136/bmj.a2038. PubMed PMCID: PMC2590904.
13. Wallace JE. Mental health and stigma in the medical profession. Health. 2011;16(1):3–18. doi:10.1177/1363459310371080.
14. Miller L. Doctors, their mental health and capacity for work. Occup Med. 2009;59(1):53–5. doi:10.1093/occmed/kqn111.
15. Anfang SA, Faulkner LR, Fromson JA, Glendel MH. The American Psychiatric Association's resource document on guidelines for fitness-for-duty evaluations of physicians. J Am Acad Psychiatry Law. 2005;33(1):85–8.
16. American Psychiatric Association. Diagnostic and statistical manual of mental disorders: DSM-5. Washington, DC: American Psychiatric Publishing; 2013. p. 947.
17. Shanafelt TD, Boone SL, Dyrbye LN, Oreskovich MR, Tan L, West CP, Satele DV, Sloan JA, Sotile WM. The medical marriage: a national survey of the spouses/partners of US physicians. Mayo Clin Proc. 2013;88(3):216–25. doi:10.1016/j.mayocp.2012.11.021.
18. Warde CM, Moonesinghe K, Allen W, Gelberg L. Marital and parental satisfaction of married physicians with children. J Gen Intern Med. 1999;14(3):157–65. PubMed PMID: 10203621.
19. Dyrbye LN, Shanafelt TD, Balch CM, Satele D, Sloan J, Freischlag J. Relationship between work-home conflicts and burnout among American surgeons: a comparison by sex. Arch Surg. 2011;146(2):211–7. doi:10.1001/archsurg.2010.310.
20. Howe A, Smajdor A, Stöckl A. Towards an understanding of resilience and its relevance to medical training. Med Educ. 2012;46(4):349–56. doi:10.1111/j.1365-2923.2011.04188.x.
21. Botelho RJ, Hinton-Walker P, Suchman AL. Partnerships in healthcare: transforming relational process. New York: University of Rochester Press; 1998. p. 343.
22. Suchman AL, Sluyter DJ, Williamson PR. Leading change in healthcare: transforming organizations using complexity, positive psychology, and relationship-centered care. London: Radcliffe; 2011. p. 340.
23. Bickel J, Brown AJ. Generation X: implications for faculty recruitment and development in academic health centers. Acad Med. 2005;80(3):205–10. PubMed PMID: 15734801.
24. Behaviors that undermine a culture of safety. Sentinel Event Alert. 2008;(40):1–3. PubMed PMID: 18686330.
25. Leape LL, Fromson JA. Problem doctors: is there a system-level solution? Ann Intern Med. 2006; 144(2):107–15.
26. Lockley SW, Cronin JW, Evans EE, Cade BE, Lee CJ, Landrigan CP, Rothschild JM, Katz JT, Lilly CM, Stone PH, Aeschbach D, Czeisler CA, Harvard Work Hours, Health and Safety Group. Effect of reducing interns' weekly work hours on sleep and attentional failures. N Engl J Med. 2004;351(18):1829–37. PubMed PMID: 15509816.
27. Lerner BH. A life-changing case for doctors in training. New York Times [Internet]; 3 March 2009 [cited 2013

Jul 1] Health: [about 3p.]. Available form: http://www.nytimes.com/2009/03/03/health/03zion.html?pagewanted=all&_r=0.

28. Nasca TJ, Day SH, Amis Jr ES, ACGME Duty Hour Task Force. The new recommendations on duty hours from the ACGME Task Force. N Engl J Med. 2010;363(2):e3.

29. Volpp KG, Rosen AK, Rosenbaum PR, Romano PS, Even-Shoshan O, Canamucio A, Bellini L, Behringer T, Silber JH. Mortality among patients in VA hospitals in the first 2 years following ACGME resident duty hour reform. JAMA. 2007;298(9):984–92. PubMed PMID: 17785643.

30. Goitein L, Shanafelt TD, Wipf JE, Slatore CG, Back AL. The effects of work-hour limitations on resident well-being, patient care, and education in an internal medicine residency program. Arch Intern Med. 2005;165(22):2601–6. PubMed PMID: 16344417.

31. Desai SV, Feldman L, Brown L, Dezube R, Yeh HC, Punjabi N, Afshar K, Grunwald MR, Harrington C, Naik R, Cofrancesco J Jr. Effect of the 2011 vs 2003 duty hour regulation-compliant models on sleep duration, trainee education, and continuity of patient care among internal medicine house staff: a randomized trial. JAMA Intern Med. 2013;173(8):649–55. doi:10.1001/jamainternmed.2013.2973.

32. Ludmerer KM. Resident burnout: working hours or working conditions? J Grad Med Educ. 2009;1(2):169–71. doi:10.4300/JGME-D-09-00077.1.

33. Bohnert P, O'Connel A. How to avoid burning out and keep your spark. Curr Psychiatr. 2006;5(1):31–42.

34. Linzer M, Manwell LB, Williams ES, Bobula JA, Brown RL, Varkey AB, Man B, McMurray JE, Maguire A, Horner-Ibler B, Schwartz MD; MEMO (Minimizing Error, Maximizing Outcome) Investigators. Working conditions in primary care: physician reactions and care quality. Ann Intern Med. 2009;151(1):28–36, W6–9. PubMed PMID: 19581644.

35. Dyrbye LN, Shanafelt TD. Commentary: medical student distress: a call to action. Acad Med. 2011;86(7):801–3. doi:10.1097/ACM.0b013e31821da481.

36. Hochberg MS, Berman RS, Kalet AL, Zabar SR, Gillespie C, Pachter HL. The stress of residency: recognizing the signs of depression and suicide in you and your fellow residents. Am J Surg. 2013;205(2):141–6. doi:10.1016/j.amjsurg.2012.08.003.

37. Eckleberry-Hunt J, Van Dyke A, Lick D, Tucciarone J. Changing the conversation from burnout to wellness: physician well-being in residency training programs. J Grad Med Educ. 2009;1(2):225–30. doi:10.4300/JGME-D-09-00026.1.

38. West CP, Dyrbye LN, Sloan JA, Shanafelt TD. Single item measures of emotional exhaustion and depersonalization are useful for assessing burnout in medical professionals. J Gen Intern Med. 2009;24(12):1318–21. doi:10.1007/s11606-009-1129-z.

39. Krackov SK, Levin RI, Catanésé V, Rey M, Aull F, Blagev D, Dreyer B, Grieco AJ, Hebert C, Kalet A, Lipkin Jr M, Lowenstein J, Ofri D, Stevens D. Medical humanities at New York University School of Medicine: an array of rich programs in diverse settings. Acad Med. 2003;78(10):977–82. PubMed PMID: 14534091.

40. Balint M. The doctor, hid patient and the illness. 2nd ed. Edinbourgh: Churchill Livingston; 2000. p. 416.

41. American Balint Society. [Internet]. Colbert, WA: American Balint Society; 2013 [cited 2013 Jul 8]. Available from: http://americanbalintsociety.org.

42. Charon R. Narrative medicine: honoring the stories of illness. Oxford, UK: Oxford University Press; 2006. p. 266.

43. Kern DE, Wright SM, Carrese JA, Lipkin Jr M, Simmons JM, Novack DH, Kalet A, Frankel R. Personal growth in medical faculty: a qualitative study. West J Med. 2001;175(2):92–8. PubMed PMID: 11483549.

44. Remen RN, O'Donnell JF, Rabow MW. The Healer's art: education in meaning and service. J Cancer Educ. 2008;23(1):65–7. doi:10.1080/08858190701821394.

45. Weiner EL, Swain GR, Wolf B, Gottlieb M. A qualitative study of physicians' own wellness-promotion practices. West J Med. 2001;174(1):19–23. PubMed PMID: 11154656.

46. Shanafelt TD, Oreskovich MR, Dyrbye LN, Satele DV, Hanks JB, Sloan JA, Balch CM. Avoiding burnout: the personal health habits and wellness practices of US surgeons. Ann Surg. 2012;255(4):625–33. doi:10.1097/SLA.0b013e31824b2fa0.

47. Kushner RF, Kessler S, McGaghie WC. Using behavior change plans to improve medical student self-care. Acad Med. 2011;86(7):901–6. doi:10.1097/ACM.0b013e31821da193.

48. Basco MR, Thase ME, Wrighy JH. Learning cognitive-behavioral therapy: an illustrated guide. Arlington, VA: American Psychiatric Publications; 2006. p. 300.

49. Shapiro SL, Schwartz GE, Bonner G. Effects of mindfulness-based stress reduction on medical and premedical students. J Behav Med. 1998;21(6):581–99. PMID: 9891256.

50. Hanh TN. The miracle of mindfulness: an introduction to the practice of meditation. Boston, MA: Beacon Press; 1975. p. 108.

51. Young SN. Biologic effects of mindfulness meditation: growing insights into neurobiologic aspects of the prevention of depression. J Psychiatry Neurosci. 2011;36(2):75–7. doi:10.1503/jpn.110010.

52. Carlson LE, Speca M, Faris P, Patel KD. One year pre-post intervention follow-up of psychological, immune, endocrine and blood pressure outcomes of mindfulness-based stress reduction (MBSR) in breast and prostate cancer outpatients. Brain Behav Immun. 2007;21(8):1038–49. PubMed PMID: 17521871.

53. Epstein RM. Mindful practice. JAMA. 1999;282(9):833–9. PubMed PMID: 10478689.

54. Brach T. Radical acceptance: embracing your life with the heart of a Buddha. New York: Bantam; 2003. p. 333.

55. Lefebvre DC. Perspective: resident physician wellness: a new hope. Acad Med. 2012;87(5):598–602. doi:10.1097/ACM.0b013e31824d47ff.

56. Vaillant GE, Sobowale NC, McArthur C. Some psychologic vulnerabilities of physicians. N Engl J Med. 1972;287(8):372–5. PubMed PMID: 5043521.

57. Swiggart WH, Dewey CM, Hickson GB, Finlayson AJR, Spickard Jr WA. A plan for identification, treatment and remediation of disruptive behaviors in phy-

sicians. Front Health Serv Manage. 2009;25(4):3–11. PubMed PMID: 19603686.

58. Foundation for Medical Excellence. [Internet]. Portland, OR: Foundation for Medical Excellence; [cited 2013 Jul 8]. Available from: http://www.tfme.org.

59. Physician Assessment and Clinical Education Program. UCSD Pace Program. [Internet] San Diego, CA: Regents of the University of California; 2008 [cited 2013 Jul 8]. Available from: http://www.paceprogram.ucsd.edu

Laurie Raymond

Abstract

In this chapter, Dr. Raymond seeks to assist administrators, faculty, and student support services colleagues in identifying and understanding many of the academic and personal challenges faced by medical students during their training by sharing her experiences and observations from 14 years as director of the Office of Advising Resources (OAR) at Harvard Medical School (HMS). She describes the staffing, function, and experience of the OAR; the importance of early screening and intervention; the special developmental challenges of medical students (e.g., reshaping the role in the family, dealing with major medical, mental health issues for the first time, managing the emotional impact of care, forming a professional identity); their most common presenting problems (e.g., attention, sleep, self-sabotage) and the differential diagnosis (e.g., attention deficit disorder, verbal and nonverbal learning disorders, depression); and some common issues that arise with medication management. Dr. Raymond shares a number of interesting observations which should influence remediation in medical education practice, including that anxiety, depression, and perfectionism may be secondary to treatable attention deficit or learning disorders. She also describes the characteristics of "successful compensators"—resilient students who struggle, seek help, and ultimately, by all accounts, do well.

12.1 Structure of Office of Advising Resources

For the past 14 years as a psychiatrist in an advisory capacity, I have been developing and directing the Office of Advising Resources (OAR) at Harvard Medical School (HMS). I work in collaboration with two experienced educational consultants, Ms. Karen Wulfsberg and Loring Brinckerhoff, Ph.D. We provide students with assessment, specialized study strategies, performance counseling, and referral for performance difficulties due to learning, situational, emotional, and medical issues. We also offer individual coaching for national licensing exams. Ms. Wulfsberg helps incoming students adjust their study strategies to the pace and volume

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of the medical curriculum, using her expertise in learning disabilities (LD) and attention deficit disorder (ADD). In addition she provides specialized tutoring for classwork as well as clinical shelf and national licensing exams. Dr. Brinckerhoff, also an expert in LD and ADD, reviews formal documentation such as neuropsychological testing to determine students' qualification for disability accommodations with the HMS and the Harvard School of Dental Medicine (HSDM)'s Disability Coordinators. He informs students about assistive technologies. In addition he assesses and coaches individual students in their clinical activities. As part-time consultants, Ms. Wulfsberg spends 5–10 h/week in the office, and Dr. Brinckerhoff, 5–10 h/month. In addition we have an administrative assistant who provides part-time clerical assistance (4–6 h/month) for budget-related issues. The OAR is funded by the Program in Medical Education at HMS.

In my role as psychiatric advisor and director of the office, I work closely with the five societies to which incoming students are assigned. These societies serve as "academic advising homes" for students during their medical school training. Four societies are dedicated to the New Pathway Program while one houses the Health, Sciences, and Technology (HST) Program of HMS/MIT for students with especially strong research background and career interests.[1] Dental students participate in the first 2 years of preclinical training and then transition to the HSDM for their clinical years. Although we work with dental, biology Ph.D., and medical students, this chapter will focus on our experience with medical students.

On average, 250 medical students make 550 visits each year to our office (one-third of the average HMS student body of 750 students).[2] Fifteen percent of these visitors are referred either by society masters or associate masters, the dean of students, and/or the Promotions and Review Board (PRB), and 85 % self-refer. Defining the boundaries of confidentiality in my office during a first visit is very important in helping students feel safe enough to talk freely about their difficulties. I explain that I function as a psychiatrist in an advisory, not in a clinical role, and that my relationship to their society masters/associate masters is on a "need to know" basis. I tell students that if they choose to share private information about themselves or their families, I will respect their privacy as much as possible; however, if they or someone else might be at risk, I let them know that we will discuss steps that might be needed for their safety and for addressing their needs with other administrators and referral sources. If a student is referred to OAR by the PRB for remediation, I explain that I might be asked to prepare a report to the PRB, outlining the general remediation plan we design and indicating the degree to which the student participates in those activities. I often share with the student the content of such formal reports. For students particularly concerned about confidentiality, I suggest that they meet with a clinician in the Harvard University Health Services (HUHS) or, if appropriate, with the HMS Ombudsperson, with whom confidentiality is ensured with the exception of emergencies.

It is important in this first encounter, especially if students are referred, to discuss how they feel about being referred in the first place. Letting them express any shame, fear, or anger and showing them understanding can often help build a mutual alliance. Students particularly benefit from reflecting on their own goals for performance so, they can be active agents in receiving help. It is my experience that if students experience useful help from OAR and/or their society master/associate master early in their training, they are much more likely to return if problems arise later in their clinical years.

About 80 % of the students who come to OAR present with academic performance issues, while the remaining 20 % present with family or personal situations, depression, career questions, and/or some type of anxiety. Each of these smaller categories ranges from 4 to 8 %. I see the student first to determine what learning,

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[1] The New Pathway (NP) and the HST Program (HST) are names for the curricula at HMS. NP is for the majority of students (about 135–140), and HST is for a small subgroup of students (about 30).

[2] Numbers and statistics in this chapter refer to those representing consistent trends over the last 6–7 years at OAR, unless otherwise specified.

situational, emotional, and/or medical factors might be contributing to his or her performance problem. I often use either a preclinical or clinical OAR Learning Survey as a screening tool.[3] Depending on the outcome of this assessment, students are referred for specialized assessment and tutoring to OAR's educational consultants and/or for assessment and treatment to medical and/or psychiatric providers at the HUHS or in the community.

12.2   Early Screening and Intervention

First-year medical students are often reluctant to acknowledge their need for help and unfamiliar with the steps for doing so. They have often been among the highest performing students in their previous educational settings and in the role of tutoring and helping others. When our curriculum changed 7 years ago, the New Pathway second year was shortened by 2 months. With this shorter preparation time for Step I, I decided to start a more intensive individual coaching program to help avoid excessive anxiety and support optimal performance on this high-stakes exam. I now see 70–80 % of the second-year class individually, the majority of whom come for advice about Step I preparation. They seek out a structured and efficient approach to their first national licensing exam regardless of their success with previous standardized tests. I see these individual students for Step I preparation on average three times throughout their second year, and I refer about 10 % of those students, who are in need of more specialized strategies for their particular learning issues, to Ms. Wulfsberg for additional assistance.

We orient the first-year students to basic information about Step I in spring of their first year and begin advising them on resources, structured approaches, and scheduling from that time until their exam in spring of their second year. This allows many students to use our office without fear of being identified as "having problems."

It also gives me the chance to screen a large number of students for learning, family, personal, situational, psychiatric, and medical problems. I use our OAR learning survey (preclinical version) for students who report problems with focus, concentration, memory, efficiency, motivation, and/or worse-than-expected performance in their classes. They might note on the survey problems in various aspects of reading, writing, speaking in social or professional settings, auditory and verbal processing, mathematics, attention and concentration, organizational skills, multitasking, self-awareness related to learning, and learning-related emotions. The latter includes such items as mood swings related to success or failure, performance anxiety, perfectionism, procrastination, low tolerance for frustration, difficulty initiating projects, anxiety in the clinical settings, confusion about what's not working for them, and worrying about completing or succeeding in their medical training.

I have found that if I ask students directly about any of these items, they often tell me that they are "fine" or "don't have a problem with 'x'." I have learned to ask them instead to fill out the survey and make notes next to any relevant items while I work at my computer. I let them know that we will review their responses together when they finish. It is striking how many more details they acknowledge about their difficulties when given the chance to reflect without being face-to-face with me. One way I understand this phenomenon is that many of these high-performing students are in "performance mode" in relation to others because their identity often includes being able to handle many more challenges than the average person. They don't easily accept that they may have "hit a wall" with the fast-paced medical curriculum despite their previous ability to compensate with intelligence, hard work, and resiliency.

This screening process for students seeking Step I coaching reveals the following secondary issues (with percentages representing fairly consistent annual averages): difficult family situations (8 %); interpersonal difficulties (7 %); depression spectrum, mild to major symptoms (6 %); anxiety spectrum, mild to major symptoms of different types (5 %); learning/attention difficulties spectrum, mild to formally diagnosed

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[3] The preclinical and clinical OAR surveys were designed by my colleagues and me in 2002 and 2010 respectively.

disabilities (10 %); posttraumatic stress disorder (2 %); and medical problems (2 %). It is helpful to refer students early in their preclinical years for assessment and treatment as the intensity and time demands of clinical rotations give students fewer opportunities to address these issues. Initially mild problems, such as early depression, can also worsen without adequate attention, assessment, and treatment.

Prevention and "in-time" interventions have proven to be critical. Most medical students will manage significant pressure and challenges if they are helped to anticipate the time management and study skills needed during different phases of their training, not only for Step I and other licensing exam preparation but also for the transition to clinical clerkships in the third and fourth years. We emphasize that preparation for national licensing exams primarily helps integrate and consolidate students' preclinical knowledge base for their clinical years and future training. Performance anxiety, particularly in relation to national licensing exams, is common. Students can be empowered by learning and practicing brief anxiety-reduction exercises such as performance imagery with breathing and muscle relaxation. These types of exercises allow them to discover their own internal resources for managing anxiety.

12.3 Developmental Challenges of Medical Students

I've observed that many medical students share several developmental challenges in common, including reshaping their role in the family; dealing with major medical and mental health issues for the first time; forming a professional identity; choosing deeper, intimate relationships; and managing the impact of care. I'll describe each in detail.

12.3.1 Reshaping the Role in the Family

One reason medical students may be pursuing a career in medicine is that they may have functioned as particularly effective problem-solvers, not just with friends, peers, and other students but also with their own families. Because families may struggle when their "problem-solver" leaves, many students continue to perform that role while at medical school. When students transition to the clinical years and need to dedicate themselves to medical teams and patients in a full-time capacity, performing that role for their families can become more difficult. If students don't help their families of origin, partners, or own children to anticipate their being less available while on clinical rotations, these loved ones can often feel abandoned and uncared for when the students' time and energy to participate in their lives suddenly diminishes. We advise students to discuss this change ahead of time with those close to them and find ways to connect by phone, Skype/Face-Time, and brief visits, if possible, while on call.

Given the age range of medical students, usually 21–40, this is a time when grandparents and parents may become seriously ill or die. Several students each year are notified of such illnesses and losses. Depending on the role of the parent or grandparent, the student may then be thrown into an even more important role for their family. Adjustments in schedules and sometimes a leave of absence or fifth year are necessary for the student and his/her family to deal with these losses.

12.3.2 Dealing with Major Medical, Mental Health Issues for the First Time

Medical students' age range may also make them vulnerable to their first major episode of psychiatric or medical illness, including depression, bipolar disorder, psychosis, inflammatory bowel disease, and cancer. While some students choose a medical career because either they or their family members have had such conditions, many others have not previously encountered psychiatric or medical difficulties. Coming to terms with a serious psychiatric or medical illness, accepting the need for treatment, and taking care of themselves in new ways can be difficult for students to accept.

Families may also have difficulty accepting their child's illness, particularly if they have looked to the student as being "able to manage anything." I have found that no matter what the age of the student, it's important not to rule out the possibility that his/her family could be an important source of support. In my interviews with students dealing with new psychiatric or medical illness, I will often explore who is in the students' support system and how comfortable they are having their families involved. For major changes in schedule or planned leaves of absence, students often find that having a master of their society speak with their parents and explain the rationale for a leave or change in schedule can greatly relieve both family and student. Students who are trying to deal with their own reactions to serious, unexpected illness may be overwhelmed if they are also burdened with reassuring their parents.

Sometimes a student's new diagnosis of a condition such as a mood disorder or learning and attention difficulty may allow a family to acknowledge more readily the presence of such a condition within the larger family network. Several students who have faced a major episode of depression and talked with their families were surprised to learn later that their parents too had struggled with something similar in their young adulthood. Possible explanations for this phenomenon might be that their parents were never formally diagnosed, felt frightened for their child's recovery if they hadn't received treatment themselves, or worried about their child's being stigmatized as they might have been in their own situation. I have found this issue to be particularly true of physician parents, who will sometimes initially advise their child against getting any help that might be known to the school. Stigma for deviations from "normal" in physician culture is still quite powerful and was even more so a generation ago.

I've found that reminding students of their strengths and coping strategies and monitoring them through the critical period of a new diagnosis, alongside their work with medical or mental health providers, can give students mature mastery over periods of decompensation. How they understand what happened to them, what they needed, and what they did to help themselves is critical for dealing with possible future recurrences and helping patients face similar challenges.

12.3.3 Forming a Professional Identity

In the United States students arrive at medical school transitioning from college, other graduate schools, and jobs. Competing for entrance to medical schools, these students have sought high grade point averages, superior MCAT scores, and impeccable records. Self-esteem based on "being the best" or "top performer" becomes difficult to sustain when students encounter equally qualified medical school classmates. Many incoming students continue to look through the filter of medical school selection, i.e., "*I can't be successful if I'm not as good as 'X' or 'Y'*" in tutorials or on the wards. Furthermore, students who previously avoided taking classes in subjects in which they had more difficulty need to exercise many different ways of thinking in medical school to learn subjects as different as biochemistry, anatomy, epidemiology, ethics, health policy, and pathophysiology. In addition, they are required to read and process large amounts of information in short periods of time. They may not have developed the necessary writing skills for preclinical papers or for clinical progress notes and consultations. Study and time-management strategies for college courses are rarely adequate for the volume and pace of the medical curriculum. For the first time, students may have to memorize several levels of detail and not just understand key concepts. A common comment I hear from first-year students is, "*Just when I figure out how to study for one subject, the block is over, and I have to figure it out for the next*." Many first-year students experience themselves as "failures" if they don't emerge as stars in their tutorial discussions or exams. They often feel badly about not striving for "perfection" and "learning it all." Instead they feel they are "settling" by just trying to manage "drinking from the fire hose" of first-year material (see Chap. 3 for a discussion of study skills coaching and Chap. 13 for learning issues in medical students).

First-year medical students may also encounter a marginal or failing grade for the first time in their lives. It is difficult for them to acknowledge these vulnerabilities to each other or even to close friends; they find it easier to wear a protective mask of "being fine" when encountering classmates. One of the most frequent statements I hear from first years visiting OAR is, "*I feel like such a failure. Everybody else is looking fine and doing well. What's wrong with me?*" I respond that they are not alone in facing concerns about their performance, as I see many of their classmates whose issues they don't see. I also ask them, "*When you are with your classmates, and someone asks you how you are, how do you respond?*" They identify their own and others' protective masks of "being fine." For first-year students struggling with these issues, I counsel them to move from a rigid, perfectionistic model of performance to a more flexible one of coping that allows their getting help and learning from failure, mistakes, and personal vulnerability. Later in their clinical years, I often hear them reflect on the utility of these preclinical experiences for empathizing not only with their own struggles in the clinical years but also with those of their patients. Usually at the end of their clinical clerkships, I hear students describe themselves with greater acceptance of their own performance. Many of them say, "*Well, it had its ups and downs. It wasn't easy, and I didn't always do as well as I wanted to, but I really enjoyed working with patients, and a lot of the house staff teams and faculty were great*" (see Chap. 11 for a discussion of resilience).

In the first clinical year at HMS (Year 3) students are assigned to one of four different hospitals. They participate in a longitudinal program called the Principal Clinical Experience with advisors/mentors, peer seminars and conferences, and cumulative feedback about their progress during the year. This structure helps students deal with their "ups and downs" with several levels of support in the hospital as well as in the "home base" of the Medical Education Center with their society masters/associate masters, student affairs deans, and OAR.

Students' struggles to accept their own performance difficulties and failures in their clinical years are compounded by the pervasive, traditional culture of physicians which emphasizes stoicism, invulnerability, and the stigma of personal illness and failure. Our wider American culture informs us of learning and performance problems as well as mental illness. Our media present us with the personal experiences of respected professionals, but many physicians lag behind in accepting and acknowledging these issues. There are tragic examples of physicians who have avoided help and lived in isolation and despair with treatable illnesses for fear of rejection by their medical peers. Encouraging medical students to learn more about their own difficulties and find help early hopefully will contribute to more informed, tolerant, and compassionate attitudes towards each other as future professional colleagues (see Chap. 11 for discussion of similar issues among practicing physicians).

12.3.4 Discovering Deeper, More Intimate Relationships

During medical school, many students are discovering deep, intimate relationships and considering partners for a lifetime. These relationships require emotional energy and time to develop. They challenge students to manage conflict, distance, and different priorities while meeting the demands of their clinical years in particular. Whether partners should change jobs and location to be close to each other raises questions for a couple about commitment that may be hard to answer without the couple's having sufficient time together. Some partners find the demands of their medical students' career incompatible with the type of relationship they might want longer term. Disruptions and loss of relationships are not uncommon for medical students and can challenge their resiliency and, sometimes, their choice of a medical career itself. Partners face many areas of negotiation together including which specialty training will work for both when applying for residency;

whether to do a fifth year or a Ph.D. before graduation; and when to have children—in medical school, residency, or beyond.

Family acceptance of partners from different cultures can also be a source of stress, especially in families who are more actively involved in selecting spouses. Students resolve these issues in a number of ways and at times have come to OAR to talk them through. What is changing in a positive direction is students' access to a greater range of models of relationships both within and outside medicine among older students, residents, fellows, and faculty. For example, lesbian, gay, bisexual, and transgender students are finding more open discussion and group programming to acknowledge and support their partner choices. Faculty leadership and models have been an important component in advancing these efforts.

12.3.5 Managing the Emotional Impact of Learning Medicine

Students in their final year often describe a process of institutionalization in which they lose their initial empathic connection to and identification with patients. They will often acknowledge, "*In my first year, I really saw things from the patient's perspective. That's what I could relate to most. As I got into my clinical years, became part of a team, and was taking care of one patient after the other, it was scary to see myself losing that connection. I don't want to become like some of the residents and attendings who get overworked and burned out, but I can see how it happens.*" Patient-doctor courses and specialized programs can help medical students practice more self-awareness and reflection, acknowledge their stress and burnout, and learn self-care skills such as mindfulness. The irony is, however, that during the clinical years, students often find little time to integrate such skills meaningfully into their lives. They may admire residents, fellows, and faculty with whom they train, observing them being intensely involved in teaching, clinical care, and scholarship, but they also witness these teachers struggling to find time

for their own self-care and work-life balance (see Chap. 11 for a further discussion of "burnout" in medical trainees and strategies to address the self-care).

Treating patients of all ages exposes relatively young medical students to suffering, chronic illness, disability, and death for which nothing earlier in their life may have fully prepared them. Students will sometimes come to OAR to discuss a disturbing clinical experience such as delivering bad news about malignancy to a patient, watching a child die of a terminal disease, witnessing a family react to the death of their patriarch, and observing victims of interpersonal violence and car accidents. Being able to talk through what they felt and what they learned from the clinical teams involved can often relieve students of some of the reactions they are holding alone. Students exposed to these events are very grateful for the occasional resident and/or attending who take time either in the team setting or individually for such a conversation. Because such "vicarious traumatization" is infrequently addressed directly in preclinical or clinical teaching, program activities that encourage students to talk and write about their experiences of clinical care are helpful. If students don't find a way to share and understand their own reactions to clinical experiences, they may be frightened by the intensity of their own reactions and feel unprepared to cope or teach others to cope with such experiences in the future.

Some students have experienced trauma themselves—childhood sexual or physical abuse, combat-related trauma, rape, domestic violence, among others—or have witnessed such trauma in someone to whom they were attached. When these students begin to encounter patients with these types of trauma, previously suppressed feelings and memories can rise powerfully. I have seen this manifest as intense anxiety with confusion on the student's part about what they are feeling. One example was a student who, when preparing for his national licensing exam, became acutely panicked 10 days before the exam, despite previously doing well in his preparation and feeling confident. While this might have been explained as test anxiety, further talking with the

student revealed that 10 days before his MCAT exam 4 years earlier, he had received news that his father had died suddenly. When the student made this connection and was able to express sadness about his father's death, his anxiety resolved, and he took the exam on the scheduled date without difficulty. Many other examples indicate ways in which our less conscious mind keeps track of time related to previous experiences and can "remind" us of them, if events fit well enough the template of the former traumatic experience.

Another example is of a student on a pediatric rotation who observed in the emergency room an injured child who had been beaten at home. This unleashed a torrent of feelings for the student, who had grown up in a home with domestic violence.

Sometimes such emotional flooding can be intense enough that the student may need time away from clinical work. With the help of a therapist experienced in trauma, the student can work through his or her own experiences so that future clinical situations can become more manageable, even if they trigger the original trauma again.

One interesting phenomenon related to trauma that I have observed in medical students is the "retroactive attribution of meaning" to previous experience. This phenomenon was originally termed, "Nachtraeglichkeit," by Freud, referring to "reworking of the past" [1]. A student reported an example of this during her second-year patient-doctor course. She entered a room to examine a 9-year-old girl with bi-lobar pneumonia and noted the child's mother watching over her daughter with an anxious, tearful expression. The student felt acutely saddened at a deeper level than she expected. She came to me to talk about it, as she worried that she "*couldn't be a doctor if she reacted that intensely to this scene.*" As we talked, she realized that the scene had awakened a memory of her having been hospitalized at a similar age for a severe asthma attack. Seeing the fear and anxiety in this mother allowed her to understand and appreciate her own mother's fear of losing her. In addition through that understanding, she realized that her asthmatic episode had been much more life-threatening than she had appreciated until now. When students are able to reach understanding of this kind through a psychotherapy process, they often feel reassured that there is an "explanation" for their surprisingly intense feelings. Otherwise, they worry, as this student did, that their feelings are "irrational and crazy" and that they are "unfit for medicine" if they can't handle clinical situations with equanimity.

12.4 Most Common Presenting Problems and Their Differential Diagnosis

In the following section, I will describe the most common problems with which students present to OAR.

12.4.1 Problems with Attention

The most common complaint I hear from students with academic performance problems is, "*I just can't focus. I was always able to pay attention in college, but now I can't keep up with the reading and I can't remember what I have read. In tutorial discussions, I often lose track of the conversation, blank out, then realize I've missed the thread. I've never had this problem before.*"

It helps to sort out whether the attention problem, depending on its severity, is related to ADD with or without hyperactivity, depression, sleep disorders, or medical conditions past or present, e.g., head trauma, seizures, or medication side effects.

12.4.2 Attention Deficit Disorder with or Without Hyperactivity (ADHD, ADD)

Many of the criteria for attention deficit disorder with and without hyperactivity in the Diagnostic and Statistical Manual of Mental Disorders-IV [2] (see Table 12.1) are descriptive of symptoms in children. When encountering medical students, a different picture emerges.

Table 12.1 Diagnostic criteria for diagnosing attention deficit (hyperactivity) disorder

I. Either (A) or (B)
(A) Six or more of the following symptoms of inattention have persisted for at least 6 months to a degree that is maladaptive and inconsistent with the developmental level
Inattention
1. Often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities
2. Often has difficulty sustaining attention in tasks or play activities
3. Often does not seem to listen when spoken to directly
4. Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure of comprehension)
5. Often has difficulty organizing tasks and activities
6. Often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)
7. Often loses things necessary for tasks or activities at school or at home (e.g., toys, pencils, books, assignments)
8. Is often easily distracted by extraneous stimuli
9. Is often forgetful in daily activities
(B) Six or more of the following symptoms of hyperactivity-impulsivity have persisted for at least 6 months to a degree that is maladaptive and inconsistent with the developmental level:
Hyperactivity
1. Often fidgets with hands or feet or squirms in seat
2. Often leaves seat in classroom or in other situations in which remaining seated is expected
3. Often runs about or climbs excessively in situations in which it is not inappropriate (adolescents or adults may feel very restless)
4. Often has difficulty playing or engaging in leisure activities quietly
5. Is often "on the go" or often acts as if "driven by a motor"
6. Often talks excessively
Impulsivity
1. Often blurts out answers to questions before they have been finished
2. Often has difficulty waiting one's turn in games or group situations
3. Often interrupts or intrudes on others (e.g., butts into conversations or games)
II. Some hyperactivity-impulsive or inattentive symptoms that cause impairment were present before the age of 7 years
III. Some impairment from the symptoms is present in more than two or more settings (e.g., at school or work or at home)
IV. There must be clear evidence of clinically significant impairment in social, academic, or occupational functioning
V. The symptoms do not occur exclusively during the course of a pervasive developmental disorder, schizophrenia, or other psychotic disorder and are not better accounted for by another mental disorder (e.g., mood disorder, anxiety disorder, dissociative disorder, or a personality disorder)
Based on these criteria, three types of ADHD are identified:
IA. ADHD, *Combined Type*: if both criteria IA and IB are met for the past 6 months
IB. ADHD, *Predominantly Inattentive Type*: if criterion IA is met but criterion IB is not met for the past 6 months
IC. ADHD, *Predominantly Hyperactive-Impulsive Type*: if Criterion IB is met but Criterion IA is not met for the past 6 months

Taken from the American Psychiatric Association Diagnostic and Statistic Manual of Mental Disorders: DSM–IV-TR. Washington, DC: American Psychiatric Association; 2000 [3]

Many of the students I interview do not initially describe problems with attention in high school or college. They usually spent longer on assignments than their college peers but had enough time in their schedules to accommodate. With the fast pace and high volume of material to cover in medical school, some students feel that they have "hit the wall" and that their previous

study strategies are no longer effective. The OAR learning survey can help sort out possible causes of their attention problems.

The most common items that students with either type of ADD will check off on the OAR survey are several within the Attention/Concentration section: difficulty sustaining attention in lecture; becoming easily bored; seeking stimulation/excitement; difficulty remembering things heard, phone numbers/names, or things seen; sustaining attention while studying and/or during exams; difficulty completing tasks; being fidgety while seated; and becoming impatient.

In the Organizational Skills section, such students are likely to note difficulties with the following: procrastination doing work, getting organized, creating structure, completing assignments on time, setting realistic priorities for work, and prioritizing ideas for papers. About one-half of the students I meet within the spectrum of ADD (mild to severe) have difficulties with these organizational (executive functioning) skills that can contribute significantly to their difficulties with efficiency as preclinical and clinical students.

Another interesting pattern that I have noticed is that students with attention deficit spectrum include in the Learning-Related Emotions section the following items: excessive test anxiety, perfectionism, confusion about what's not working, low tolerance for frustration, and difficulty initiating projects. When we discuss each of these further, my impression is that the *anxiety and perfectionism may be secondary phenomena*. In relation to the anxiety as a secondary phenomenon, these students find that when they procrastinate on studying for tests or writing papers, they become frightened by the prospect of failing because they have insufficient time left to complete their work. They describe that the adrenaline accompanying that fear actually improves their attention and focus. It seems to function for them like a natural "stimulant," but the cost is that they are often highly stressed and anxious while doing their work. This can result in their not sleeping the night before and possibly "blanking out" during exams. In turn, these repeated episodes of anxiety related to delayed studying for examinations can lead to exhaustion from

stress and, for those vulnerable to depression, a new or recurrent episode.

In relation to perfectionism as a secondary phenomenon, students seem to be aware at a less-than-conscious level that they are "missing" details, even if they haven't previously described themselves as having attention problems. They will report their tendency in college to check and recheck their work to make sure it's "perfect" without realizing that they might be looking for what they have difficulty attending to. When treated for ADD as medical students, they often notice that this checking and rechecking improves and becomes less necessary.

Students within the spectrum of attention or learning difficulties may have variable combinations and degrees of the following features of attention deficit with hyperactivity, attention deficit without hyperactivity, verbal learning disorder, and nonverbal learning disorder. This compilation is based on our combined experience in OAR with students' symptoms and behaviors in both the preclinical and clinical years.

12.4.3 Attention Deficit Disorder with Hyperactivity

In the preclinical setting, students with ADD with hyperactivity may have difficulties sitting through lecture; staying organized with notes; losing things; interrupting and talking over others in tutorial or social discussions; being an impatient or poor listener in personal relationships; being disorganized in planning, time management, personal grooming, or self-care; being spread too thin and not "sticking with" activities; becoming bored with less interesting tasks; and quitting these before achieving mastery. In the clinical setting, students with this form of ADD may think out loud, miss details on rounds; talk out of turn, give disorganized presentations, have trouble following a systematic sequence in the physical exam or in clinical work-ups, and/or miss details in writing patients' chart notes and orders.

At the same time, many of these students may have high levels of energy, appear enthusiastic and tireless; have warm, engaging interpersonal

skills; and are often good leaders who can appreciate the "big picture." They may initiate projects well but have difficulty sustaining the "nitty-gritty" of those projects over time. It is common that they will get high "clinical scores" due to warm, engaging interpersonal skills with patients, nurses, and house staff in their clerkships but will have trouble remembering details and performing well on shelf exams.

12.4.4 Attention Deficit Disorder Without Hyperactivity, "Inattentive Type"

The "inattentive" type of ADD is more commonly identified in female students who come for assessment for the first time as graduate students. Previous to medical school, their intelligence, hard work, and lack of hyperactive symptoms have allowed them to compensate for most academic challenges. They may report, however, lower than expected MCAT scores. In the preclinical years, such students tend to need and adapt to highly structured situations; find difficulty in creating structure on their own; behave well and find that the rules of behavior provide some welcome structure; have difficulty with information overload and problems learning from lectures, particularly when they are unfamiliar with the material; need to repeat information frequently to solidify their memory; need extra time to grasp ideas fully; work very hard with high motivation, but still struggle to initiate projects; and procrastinate and have difficulty reading. In the clinical years, students with this type of ADD may take longer to "learn the ropes"; have trouble developing their own templates for efficient clinical work-up and presentation of patients, but once they have these templates may function well; have difficulty keeping organized with multiple patients and chart notes until they develop an efficient system for doing so; and have unrealistic goals for what they can accomplish. Since their ADD may not have been identified, they may not understand why they are having difficulty and may feel "deficient" relative to peers who "learn the ropes" quickly. This may lead to

their not readily asking for help, and they may have difficulty thinking "on their feet," needing time to organize their thoughts.

Their strengths may include being diligent and dedicated, thinking carefully about the patient's whole story, inclusive of family; having excellent interpersonal skills with house staff and nurses; and getting along well with patients. Once they figure out sequence codes of clinical functioning, they can learn quickly. They also may get high "clinical scores" in the clerkships but struggle with details and memory on shelf exams (see Chap. 3 on Medical Knowledge and study skills remediation for students with attention difficulties).

12.4.5 Verbal and Nonverbal Learning Disorders

Two other types of learning disorders, verbal and nonverbal, are worth mentioning, as they can contribute to a spectrum of academic performance difficulties even if they don't present with initial complaints about attention.

Verbal learning disorders (VLD) (e.g., dyslexia) are less common in our medical students but may co-occur to varying degrees with ADD with or without hyperactivity. Students with VLD in the preclinical years may take excessive time reading assignments; have poor retention; not have enough time for review; use time-consuming re-reading strategies which lead them to feel "behind" in their studies; give up extracurricular activities to "keep up" and then become depressed as a result of losing these enjoyable activities; have trouble separating the "wheat" from the "chaff" in their reading; and have difficulty finishing tests with high verbal content, such as Step I. In the clinical years, they may take longer to read patients' charts and extract the necessary details; have trouble doing much foundational reading, as it takes significant time; have trouble interpreting complex information "on their feet"; and may not be able to finish shelf exams or Step II (see Chap. 13).

Their strengths may include being good with "hands-on" learning; being an excellent listener

who can compensate by using "auditory" learning; having excellent interpersonal skills with house staff, nurses, and patients; and being a good writer even if not a good reader. They may embrace technology to compensate and may get high "clinical scores" in the clerkship for their interpersonal skills and hard work, yet do poorly on shelf exams.

Medical students with a spectrum of nonverbal learning disorders (NVLD) may have more difficulty with interpersonal than with academic skills. In the preclinical years, they may easily learn facts and details without context but have more trouble with three-dimensional learning, for example, in anatomy, or with manual skills and procedures. With peers they may have difficulty reading interpersonal cues, be awkward in tutorial discussions, and form few friendships with classmates. In the clinical years, their interests may not be people-related. They may be more comfortable in clinical laboratory and/or research settings. They may not grasp the pragmatics of social bonding with clinical teams and peers, e.g., humor, small talk, and sharing conversations. They may also fail to integrate the "bio-psycho-social" aspects of patients' care, instead focusing on the patients' isolated "disease elements" rather than their whole person and situation. Faculty may refer such students for "lack of situational awareness" and awkwardness with patients despite their hard work and excellent knowledge base.

Their strengths may include having high levels of technical knowledge; becoming "superstars" as consultants with deep, focal expertise in math and science; and pursuing their own interests deeply with a focus on detail rather than the "big picture" or context. They may follow idiosyncratic paths of research and achievement beyond what's required or expected (see Chap. 10 for discussion of remediation strategies for such trainees).

The spectrum of students with attention and learning difficulties constitutes about 15–20 % of the total number of students coming to OAR annually. For attention and learning disorders of significant severity, we advise students to discuss further assessment by a neuropsychologist and/or by the mental health providers at HUHS, as

appropriate. The neuropsychological testing is performed by outside neuropsychologists who can identify the particular elements and severity of the student's difficulties and provide the formal documentation required to apply for HMS disability accommodations. On average annually, one in five students within the spectrum group with attention and learning symptoms qualifies and implements disability accommodations at HMS. Over two-thirds of these students with disability accommodations had not been formally diagnosed in previous educational settings.

12.4.6 Medication for Attention Deficit Disorder

Medications for ADD, particularly stimulants, are not without their risks. It is difficult for students in the clinical years to try new medications, in part because it can be challenging to gauge the correct dose in the face of variable sleep and daily performance demands. Some students, for example, are particularly sensitive to the dose range of a stimulant, finding that they will overfocus to the point of "getting stuck" in trying to complete a chart or finish reading a journal article. In students with undiagnosed bipolar disorder, stimulants can infrequently precipitate a hypomanic episode or, in other students, paranoid psychotic thinking. For that reason, careful monitoring of dosage and response to medication by their mental health providers is strongly recommended.

On the positive side, students with previously undiagnosed ADD have returned to tell me that once they were diagnosed and treated, their ability to focus improved dramatically and allowed them to learn in ways they had never before experienced. They could retain information and were successful in their national licensing and shelf exams beyond their previous performances and expectations.

12.4.7 Depression Spectrum

While the percentage of students coming to OAR annually with a spectrum of attention and learning

disorders (both presenting and secondary symptoms) has remained in the range of 15–20 %, the percentage of students coming to OAR with a spectrum of depressive symptoms (both presenting and secondary symptoms) has *decreased* steadily over the last 5 years from 16 to 8 %. Since our office sees students with performance problems, there may be several explanations: more students prior to medical school may be receiving adequate treatment for depressive symptoms; students may be seeking help directly from the providers at HUHS or in the community; and/or the student population being admitted may be shifting in its profile of potential difficulties.

We see higher numbers of transient depressive periods in preclinical students and greater numbers of major depression episodes in clinical students, on average twice to three times more frequent than in the preclinical years. First-year students in particular may experience transient episodes of low energy and mood that don't qualify for major depression. These episodes may result from the following most common reasons: their geographic shift from a warmer, sunnier climate to a northeastern one that is colder and darker; adjustment to feeling like a more "average" performer relative to classmates; stress from personal relationships; and homesickness or concern about family situations. Letting first-year students know that these changes in mood are not unusual and referring them for monitoring and short-term therapy, as needed, often help these episodes resolve. One of the most important lessons I learned when I shifted from being a clinical psychiatrist at the HUHS (5 years previous to becoming director of OAR) was *that depression may be secondary to undiagnosed attention deficit disorder and learning disabilities*, *not primary*. When students don't understand why they are having so much trouble performing well, they begin to feel hopeless about improving and can despair about their future as physicians. When such students get adequate medical treatment for their ADD and receive specialized tutoring assistance from OAR's educational consultants, their depressive symptoms often improve significantly as a result.

The serious episodes of major depression for clinical students occur with changes in their energy, interest, sleep, appetite, weight, and concentration. Students with a history of depression may hope that they will not experience a recurrence during their clerkships and may discontinue their medication only to discover their symptoms worsening. Other students might be experiencing their first episode of major depression and not realize why they are losing energy and resiliency—finding it harder to get up in the morning, concentrate, complete their clinical work, or participate fully on rounds. Their drop in performance is often noted by their house-staff team and attendings, who refer the students to OAR or to the HUHS directly for further assessment. The risk to students of remaining untreated is worsening depression to the point of disorganized thinking, decreasing ability to care for themselves, hopelessness, and becoming suicidal. It is not uncommon for clinical students who are experiencing a major depression to need adjustments in their schedule and time off to restore their health. The demands for performance and lack of sleep on clinical rotations are often incompatible with their recovery from a major depression.

12.5 Less Common Presentation Problems

In the following section, I will describe less common problems with which students present to OAR.

12.5.1 Sleep Disorders

Since students often stay up late and awaken early to complete their work in the preclinical and clinical years, it is sometimes difficult to distinguish between serious sleep disorders or medical problems on the one hand and straightforward sleep deprivation on the other. Sleep-deprived students falling asleep during lecture may sound predictable and unsurprising, but I have encountered students with a spectrum of sleep disorders

including obstructive sleep apnea, idiopathic hypersomnia, and narcolepsy. While these can be easy to miss, students who report that they fall asleep during interviews with patients or when talking to friends, even if they have slept well for several nights, can indicate a need for further medical assessment.

12.5.2 Head Trauma

Students who have been athletes, particularly in football, hockey, and soccer (especially women who "headed" the soccer ball repeatedly in high school and college), may have suffered several minor concussions without loss of consciousness. They have at times presented with attention problems and discovered on neuropsychological testing evidence of head trauma-related changes in their cognitive functioning, including attention. The recent progress in elementary and high school sports with newly implemented regulations for screening and monitoring of children/adolescents with concussions is a welcome development.

12.5.3 Complex Combinations of Problems

Most students whom I see in my office come on average two sessions per year, including the group that I coach for Step I. About 10 % of the OAR visitors each year, however, have averaged 14 visits, sometimes spanning the preclinical and clinical years. These more frequent visitors to OAR often have on average a complicated combination of family (48 %), interpersonal (40 %), depression spectrum (40 %), learning/attention disorder spectrum (52 %), anxiety (28 %), posttraumatic stress spectrum (15 %), and medical issues (15 %). This group overlaps considerably with students who take extra time and/or leaves of absence to address their issues before graduating. This latter group of students on average comprises 13 % of the OAR visitors annually and has on average an even higher percentage of family (58 %), interpersonal (55 %), and depression

spectrum (44 %) issues with slightly lower percentages of learning/attention disorder spectrum (38 %), posttraumatic stress disorder (12 %), and medical issues (10 %).

12.5.4 Self-Sabotagers

This category of student is often a great puzzle to their society master/associate masters, faculty, and peers. Despite offers of tutoring and treatment, they either continue to deny the existence of their problems or undo the very strategies that would make them successful. In general, when trying to understand a student's puzzling or disruptive behavior, it is important to get several perspectives from faculty, advisors, and mentors who know them well. As I get to know some of these students over time, less conscious motivations can become apparent. Some examples are:

1. A student with recurrent anxiety about having a terminal disease despite repeated physical exams, imaging, and lab tests. This student eventually realized that she felt she should have a terminal disease since she didn't feel she deserved an easier path to success than her parents; they had had a very painful experience immigrating to and establishing themselves in the USA.
2. A highly competent student repeatedly failing or performing marginally in his first-year courses. He thought that he should not surpass his father by being successful in a prestigious medical school. His father, a physician, had failed in his specialty of choice.
3. A student with outstanding performance in the preclinical years performed marginally in three sequential clinical clerkships without having learning, attention, depression, or medical issues. He had a difficult time acknowledging that he didn't want to pursue medicine, despite his family's pride in and support of his success. He couldn't imagine disappointing them and would rather be failed out and removed by the PRB than acknowledge own his wish to do something else professionally.

12.5.5 Substance Abuse and Eating Disorders

These are often the "silent," "invisible" difficulties about which students fear the most shame and exposure. My experience is that they will often be noted by students' peers who express concern about the symptomatic student to their societies, student affairs deans, OAR, and/or providers at UHS. Only when the condition worsens to the point of causing poor performance in the preclinical or clinical years are interventions possible, if then. *It is the rare student with either of these conditions who acknowledges the problem and seeks help*. Specific health monitoring contracts through HUHS or behavioral monitoring contracts through the local physicians' health services in the state are sometimes necessary as well as time off for residential treatment. We know that these problems often start in college and medical school and carry with them serious risks when untreated students graduate to residency, fellowship, and medical practices.

12.6 Conclusion: Who Are the Successful Compensators?

Most medial students are resilient. Students who, despite challenges in learning, attention, psychiatric, situational, or medical conditions, have succeeded beyond their own expectations to graduate and perform well in postgraduate training and practice share certain features. These include self-awareness and insight into their particular difficulties; motivation to acquire and utilize the necessary strategies to prevent errors and increase efficiency; ability to progress in developing and utilizing their own systems for efficient new learning, sometimes using technological devices (computer program, PDA templates, etc.); maturity in taking personal responsibility for getting help and acknowledging their limitations; unique skills and interests from which they derive self-esteem; and good interpersonal skills. With solid student service supports available in the learning environment, such students eventually thrive.

OAR, deans of student affairs, the societies, as well as providers in the HUHS can often help students make sense of their difficulties while minimizing shame, self-blame, and isolation. Peers and older students can also contribute to supporting and advising these students, particularly if they have dealt with similar struggles. All these supports can offer struggling students concrete advice that can be readily incorporated into their daily lives as well as help avert potentially disappointing outcomes in their academic and clinical challenges. If available, hospital-based clinicians who acknowledge understanding and/or mastery over similar issues can also serve as inspiring role models.

It is a great comfort to know that at the national level medical schools are increasingly recognizing the value of academic support resources for their students. They are witnessing students with serious learning, psychiatric, and medical conditions who can reach their goals as graduate physicians through early detection and guidance to specialized assessment and treatment.

References

1. Kafka JS. Time: the uncertainty of frame or content. In: Harris PA, Crawford M, editors. Time and uncertainty. Leiden: Brill; 2004. p. 80–1.
2. American Psychiatric Association. Diagnostic and statistic manual of mental disorders: DSM–IV. Washington, DC: American Psychiatric Association; 1994. p. 886.
3. American Psychiatric Association. Diagnostic and statistic manual of mental disorders: DSM–IV-TR. Washington, DC: American Psychiatric Association; 2000. p. 943.

Part III

Resources

The Metacognitive Competency: The Key to Lifelong Learning

13

Mark Quirk

Abstract

The topic of remediation requires that we sharpen our focus on the endpoint of medical education. As educators we are compelled to address the question: Are we in the business of fostering our learners' minimum competence or are we promoting expertise? Regarding the former, medical school applicants uniformly demonstrate the ability to achieve competence in knowledge acquisition and basic application of knowledge. Our entrance exams in these areas are thorough, valid, and reliable. There is less evidence that our applicants have the ability to achieve expertise as demonstrated in their metacognitive abilities—to think critically, reflect in action, and take another's perspective. Although there are promising new practices (e.g., holistic admissions), there is yet evidence of their ultimate impact. Those who have significant metacognitive learning difficulties often "fly under the radar screen" until they enter the clinical training environment and are required to excel at experiential learning and undergo less timely and objective assessment. Clinical expertise, all expertise in fact, demands proficiency in these abilities. This chapter provides faculty with a schema for assessing and addressing the metacognitive difficulties that learners may be experiencing that require remediation on the road to expertise.

13.1 Introduction

The expert physician is a good teacher. Whether obtaining informed consent, discussing prevention, or reviewing the discharge plan with a patient, she or he must precisely and expeditiously assess needs, define objectives, ensure accurate self-monitoring, and modify or reinforce behavior when necessary. Unfortunately, medical training in this area is often incomplete. The result is that most physicians have only a rudimentary understanding of the "deep" learning that motivates behavior change to guide clinical practice, teaching, and remediation. As a consequence, health outcomes that rely on provider-facilitated behavior change are frustratingly poor. Similarly, medical educators anticipating poor outcomes may not even attempt remediation in

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complex situations, such as in the case of a student with poor clinical reasoning [1]. In this regard, higher education, including medical training, has yet to adequately address "higher order" metacognitive skills that would improve patient care and learning outcomes like critical thinking, self-assessment, and perspective-taking [2, 3]. This chapter will provide an introduction to metacognitive competency and discuss implications for screening and remediation of learning difficulties.

13.2 Focusing Assessment and Remediation on Metacognition

Metacognition is defined as thinking about your own or another's thinking and feeling [3]. There are two broad types of metacognitive capabilities: (1) regulatory strategies and (2) strategic knowledge [4]. The effective learner uses regulatory capabilities to monitor and control thoughts, feelings, and behaviors during a learning task. Specific regulatory strategies include checking, planning, selecting and goal setting, inferring, organizing, and self-questioning and self-assessing [5–7]. Capable learners who lack these skills often procrastinate, lack focus, and make needless mistakes. When assessing needs for remediation, it is helpful to break down regulatory strategies into two types—those used to *monitor* such as reflection and self-assessment and those used to *control* such as planning and goal setting [8]. Monitoring refers to the means of achieving regulation. Control refers to the decisions one makes using the information from monitoring.

The second broad type of metacognitive capabilities, strategic knowledge, can be divided into three kinds: (a) *declarative*—knowledge about one's knowledge, attitudes, feelings, and skills; (b) *contextual*—when and why to use this knowledge; and (c) *procedural*—how to use and adapt this knowledge. Including affect as a focus of strategic knowledge broadens the scope of remediation and makes it particularly relevant to competencies of professionalism and communi-

cation. For example, a fourth-year student may be lacking strategic knowledge in the clinical context when he (a) fails to recognize and define his discomfort taking a sexual history, (b) decides not to elicit the history with an adolescent, and (c) minimizes the importance of adolescent patient education on this topic [3]. Two other areas of strategic knowledge that are crucial to medical education are *learning preference* (style) and the ability to *take others*' *perspectives*. Both enable the student and practicing physician alike to shape and learn from their experiences. These are key elements of any remediation plan.

13.3 Regulatory Capabilities

"Theoreticians seem unanimous—the most effective learners are self-regulating" [9].

These capabilities are employed before, during, and after an experience to enhance clinical and learning outcomes. Two strategies—planning and reflection—are critical to developing medical expertise. These strategies lie at the core of practice-based, lifelong learning.

13.3.1 Planning

Planning is a constellation of five primary monitoring and control strategies. The learner uses (a) needs assessment, anticipation, and prioritization to direct (b) objective setting and (c) method selection that in turn are used to (d) control behavior and achieve goals. Performance is evaluated (e) and the results fed back into the process (f) [10]. There is ample evidence that planning is a requirement for successful learning in medicine [11, 12]. One study demonstrated a positive correlation between planning behaviors and final clerkship grades, particularly the evaluation by the preceptor [13], and another found that the use of a range of self-regulatory strategies, including planning, was associated with better performance on teacher-generated and nationally standardized measures of foundational medical knowledge

[14]. These strategies should provide the foundation for remediating learners who exhibit difficulties in this area.

13.3.1.1 Needs Assessment/ Self-Assessment

Assessing one's own needs means asking the question: What do I need to know, feel, or do? Needs must then be prioritized and considered in relation to the learning context. For example, I will be seeing Mrs. Jones who has diabetes later this morning. What is my experience? What can I expect? What do I know? What do I need to do to prepare? Practicing self-assessment leads to positive outcomes including skill development, academic achievement, and motivation to learn [15, 16]. There is compelling evidence that many medical students are inaccurate self-assessors, which is problematic for learning before and after graduation [17, 18]. This inability to self-assess grows as the stakes become higher during the third and fourth years of medical school and residency when the focus is clinical performance in such areas as problem solving and communication. Despite the prominence of problem-based learning curricula and reported success in developing habits of self-directed learning [19], evidence of growth in self-assessment capability is scant. In one study, Tousignant and DesMarchais [20] found that students in the third year of a PBL curriculum who completed self-assessments before and after oral exam demonstrated poor accuracy when compared with actual performance. Another study found no relationship between PGY1 self- and instructor assessments in seven competency areas [21].

Excellent clinical performance requires many cognitive, affective, and metacognitive features that must be accounted for in the self-assessment process. If self-assessment is a more complex task when "higher order" thinking and experience is involved, then one would expect less accuracy and stability in the clinical years. This is supported by Fitzgerald et al. who found that the stability of medical students' self-assessments decreased dramatically from second to third year when the focus of these assessments shifted from assessment of knowledge by written exam to assessment of clinical skills as measured by an Objective Structured Clinical Exam (OSCE) [22].

13.3.1.2 Objective Setting

Defining objectives includes identifying expected outcomes in measurable terms. With practice, the learner will accomplish this intuitively. It should occur during preparation for exams in the preclinical years (e.g., "I will be able to name the four complications of atherosclerosis") and for patient care in the clinical years (e.g., "I will conduct a pelvic exam and ask the mother to leave the room so that the adolescent will feel comfortable about answering questions about her sexual activity"). Typically, objectives are precise, behavioral accounts that lay the groundwork for (self) evaluation because outcomes are measurable. The pelvic exam and the mother leaving the room are evaluated through observation, and the patient's comfort level is best evaluated through self-report.

13.3.1.3 Method Selection

Once objectives are defined, the self-directed learner will choose the most appropriate methods for achieving each objective. Reading can help achieve knowledge objectives (textbooks), lead to application of knowledge (through familiarity with scripts), and also facilitate the reflective process (through narrative accounts). Using monitoring strategies like self-questioning and visual imagery can improve comprehension at all levels. Learning methods developed early in medical school to promote cognitive learning (such as reading, note taking, storing in memory) should be complemented with clinically oriented regulatory learning methods such as self-observation and rehearsal, self-questioning, and reading narratives (e.g., with self or with preceptor) to facilitate metacognitive learning.

13.3.1.4 Prioritization

Prioritization is a regulator strategy that will impact needs assessment, objective setting, and method selection. Prioritization will focus

needs assessment, e.g., "What aspect of diabetes treatment and management do I need to improve most?" or "What area of juvenile-onset diabetes is most challenging for me" [23]? Prioritizing enhances the efficiency of learning and patient care by assigning value to needs assessment data in relation to available time and resources. Once identified as a need, prioritizing can be practiced with mentors in the clinical setting.

In the traditional paradigm for medical education, planning was most often considered the sole responsibility of the teacher. In the emerging paradigm, planning is integral to self-directed learning and therefore the learner's task. In addition, the learner can select from a number of available instruments to assess level of self-directedness [24, 25]. A particularly robust tool—The Jefferson Scale of Physician Lifelong Learning-Medical Students (JeffSPLL-MS)—shows promise for both student and curriculum/learning environment design [26]. However, more work must be done to validate such tools against the 'gold standard' (faculty evaluation). Potential barriers to planning such as lack of organizational skills or attention difficulties can be addressed and potentially overcome through personal awareness, adoption of new learning strategies, and use of technology (see Chaps. 9 and 12). Planning is an essential regulatory strategy that learners must master on their way toward medical expertise.

13.3.2 Reflection

Learners must also simultaneously develop the capability to reflect on "ambiguity, complexity, and uncertainty" in clinical situations [27]. Essential to both clinical practice and learning is the ability to observe and critically analyze one's own behaviors, beliefs, understanding, emotions, and attitudes in relation to the environment. In essence, reflection is learning from doing—before, during, or after the event. It can be accomplished through learning strategies such as observation and self-questioning. Reflection can be fostered by reading and writing strategies, the teacher's use of a facilitative teaching style, or through model-

ing [3]. It is linked to the attainment of important goals such as self-awareness, self-consciousness, or self-attention [28]. Reflection is a prerequisite for effective self-assessment (reflecting on your deficits in relation to a goal) [29]. (See Chap. 14 for more on the use of reflection in writing narratives.)

The reflective process often focuses on your interactions with other people and requires the capability of perspective-taking. Consider the following illustration [3]:

The receptionist advises the PGY III medicine resident that Mr. Jones, a patient seen in his clinic 6 months ago with mildly elevated LFTs, is "angry, insulting, and demanding to see the doctor. He demands to know why the resident 'didn't tell him he has hepatitis.'" Among the myriad of possible responses to the patient, the resident can (a) become angry himself and "blow the patient off"; (b) justify his decision not to use the word hepatitis; or (c) anticipate his anger, reflect on the circumstances, find out more about the patient's thoughts and feelings and try to understand his perspective.

Being of sound metacognitive judgment, this resident chooses option c. Upon questioning the patient, he finds that another doctor in the emergency department reviewed the patient's chart during a recent visit for a laceration and used the word hepatitis to describe the previously uncovered condition. He recognizes that the patient is extremely upset when asking "how come you never told me?" The resident sees how communication failed and accepts responsibility for the miscommunication. He apologizes and clarifies the meaning of the word hepatitis in relation to the previous findings.

If the resident had chosen either of the other two responses, he likely would have inflamed the situation. The chosen response offered the opportunity to reflect on the situation, gain strategic knowledge about the patient's perspective, and decide upon an appropriate response. The capability to reflect underlies self-assessment, a skill that enhances lifelong learning and the practice of medicine [15].

Reflection is a five-step process that relies upon the strategy of self-questioning. To critically reflect, one must:
1. Account—what are the facts?
2. Assess—what is the other thinking/ feeling?
3. Analyze—what are my assumptions?
4. Consider the alternatives—what could I have done instead?
5. Define an action plan—what next? [30]

Novack et al. advocate for reflection as a "regular part of medical training activities" and recommend that these opportunities be "integrated into existing interpersonal skills and behavioral science courses as well as clinical rotations" [31] (see also Chap. 24).

13.4 Strategic Knowledge

Knowledge about both one's cognitive strengths and weaknesses related to a clinical task and the patient's knowledge and feelings regarding the presenting problem, diagnosis, or treatment plan constitute critical areas of strategic knowledge. Specifically, possessing and continuously updating knowledge about one's own learning style (in relation to how others learn and the task at hand) as well as knowledge about the patient gained through perspective-taking are capabilities essential to medical expertise.

13.4.1 Learning Style

Strategic knowledge includes a practical understanding of your learning style—your cognitive strengths and weaknesses and how you learn best. Learning style is your consistent and preferred way of approaching a learning task [32]. In a broader sense, it can include your preferred way of thinking [33]. There is an extensive literature on learning styles with varying interpretations and descriptions that include both cognitive and affective elements of learning. Much work needs to be done to demonstrate the efficacy of placing significant emphasis on learning style in teaching and remediation [34]. Although one must proceed with caution in overemphasizing its importance and in wading through the plethora of learning style schema, the potential value of the concept for self-understanding (metacognition) and remediation is immense [32].

Students' learning styles are rarely considered in developing courses of study [35] despite the mounting evidence that style plays an important role in successful performance. In medical education, for example, there is evidence that a related concept—cognitive style—is implicated in OSCE performance and learning outcomes in the clinical context [36]. In a study that involved 200 medical students, Davies et al. found that learning style was related to overall academic performance. The authors conclude that a variety of teaching methods should be available to students and that "students should be made aware of their learning styles so that they may develop better strategies to achieve success" [35].

There are many models available for self-assessing thinking and learning styles [10, 37, 38]. The one briefly summarized here (in the box labeled "Learning Style Assessment" below) is intuitive, self-analytical, and practical. It is not meant to be a "research tool." It is especially suited to enhance remediation of difficulties by applying strategic knowledge of oneself to learning medicine. Knowing your learning style also enables you to adapt and become more flexible as the learning situations demand. The first dimension (modes of input) may be most critical in the formation of an effective remediation plan and will be discussed in depth. Understanding one's personal preference for the visual, auditory, or kinesthetic mode will influence studying, help determine strengths and weaknesses, and impact on performance and career choice.

13.4.2 Learning Style Assessment: Five Dimensions

> **Learning Style Assessment**
> Answering these questions provides a portrait of one's learning style that can be used as strategic knowledge to plan self-directed learning experiences.
> 1. How do I prefer to experience the learning material (visual, auditory, kinesthetic)?
> 2. Am I more motivated to learn by exams (external) or my own interests (internal)?
> 3. Am I more abstract (theoretical) or concrete (step-by-step) in my approach to learning?
> 4. Do I prefer to learn from and with others or independently?
> 5. Am I spontaneous or premeditated in my approach to learning?

Style "mismatch" can present insurmountable challenges for the ill-prepared learner. For example, if the learner prefers material in visual form, auditory learning tasks may represent a unique challenge. Identifying compensatory strategies and adapting one's learning style can significantly improve learning. Practicing in "multiple dimensions" is likely beneficial for all learners. Horiszny [39] found that exposure to heart sounds while visualizing key characteristics that physicians use to reach diagnosis leads to improved performance on an exam that involved listening to heart murmurs and identifying them. It is perhaps most important for learners with recognized limitations and will likely complement other strategies such as rehearsal and maximizing one's preferred mode (e.g., learners who are strong visually using visual data to enhance auditory learning).

In the course of remediation, there may be no recourse but to improve learning style weaknesses [3]. For example, auditory learners may need to hone visual skills to effectively read and interpret radiographs or electrocardiograms. They will compete with some visual learners who

may have what Swenssen calls "search superiority" or the ability to fixate on an object in or out of context (e.g., recognize the important features such as depression of the ST segment in a cardiogram or the identifying texture and contrast of a specific skin lesion) [40]. This characteristic of a strong visual style is often found in expert radiologists [41].

Students who demonstrate interest and aptitude in visually oriented specialties such as dermatology and radiology and are skilled at receiving and expressing information in images, diagrams, and charts are likely "visual learners." They may excel at tasks like reading films and identifying rashes. Kinesthetic learners will be drawn toward "hands-on" activities such as suturing and physical examination. They will volunteer to actively participate in demonstrations and procedures. They may likely be drawn toward specialties like surgery and orthopedics.

This dimension of learning style that is related to how we prefer to take in the environment around us is evident across disciplines, influences career paths, and often defines expertise. Consider how renowned architect Frank Gehry contrasts his style with the style of Esa-Pekka Salonen, the Los Angeles Philharmonic Orchestra conductor: "a musician can enter a room and sense the aural qualities the way I can sense the visual qualities" [42]. Medical students will benefit from a greater understanding of how they learn best and how they prefer to interact with the environment around them in relation to the demands of learning.

13.4.3 Perspective-Taking

Flavell describes the "personal category" of metacognition as "thinking about cognitive differences within people, cognitive differences between people, and cognitive similarities among all people—that is, about the universal properties of human cognition" [43]. This requires perspective-taking, a metacognitive capability that demands thinking about another's thoughts and feelings. Without mastery of this skill, expert communication with patients is impossible. Expert perspective-takers

control their interpersonal interactions and relationships through mastery of empathy, patient education, and negotiation.

Learners who are identified as "poor communicators," "uncaring," or "unprofessional" often lack perspective-taking ability.

Learning from patients, peers, teachers, colleagues, and team members expands the learning environment and demands competence in perspective-taking—the ability to seek, and share in, the other's view of the world. Not only will the development of this ability enhance performance in the classroom, it will facilitate both learning and patient care in the clinic and at the bedside throughout a lifetime of medical practice.

Perspective-taking develops into the ability to project oneself imaginatively into the position or situation of another. In its greatest capacity, it can evolve into a suspension of personal viewpoint so as to feel and grasp much more of the full impact of the other's experience [44]. It underlies our ability to develop our fund of knowledge (cognitive intelligence), emotions (emotional intelligence), and values from the world of people around us. It is a necessary prerequisite for the development of important skill sets in medicine such as empathy [45, 46], cultural sensitivity [47], negotiation in problem solving [10], and professionalism [48] (see also Chaps. 4 and 7).

The ability to reliably predict, describe, and imagine the view or response of other people who may have very different experiences, concerns, and values is extremely important to learning clinical medicine. There is some evidence that medical students as a whole may need to develop greater perspective-taking skill. In one study, researchers examined perspective-taking by having students respond to a series of case vignettes that presented problems typically encountered by students in clinical learning situations [49]. The situations could be analyzed from multiple perspectives, including that of the doctor, nurses, family members, patient, or societal groups. The authors found that typically the students analyzed the case from only one or two

perspectives and that "hardly any weighing of perspectives took place" [49].

A skilled perspective-taker will learn from, and deliver the best care as a result of, asking him or herself the following types of questions: What is it like to be the father of a 5-year-old severely asthmatic child at midnight in the emergency room? What is it like to be a 45-year-old mother of three children who is addicted to alcohol? What is it like to try to describe your stomach pain to the nurse through an interpreter? How can I convince Mrs. Jones that her child does not need an antibiotic? They will have little difficulty negotiating and empathizing with these patients as well. Perspective-taking underlies both effective care and lifelong learning in a health-care system where differences and diversity are the rule rather than the exception.

Learners can develop their perspective-taking ability and learn from others by asking the right questions and analyzing the responses. On the wards, they can learn from nurses, fellow students, and residents by asking about the others' experiences with a patient. For example, often nurses will have extensive experience with the patient and can provide important insights about the patient's behavior, problem, and life.

The patient him/herself is a valuable source of knowledge that is often untapped in a "traditional history." Residents can provide perspective to medical students that enhance patient care and the process of learning. They can provide valuable insight into their own and the attending's expectations, effective study strategies they have learned, shortcuts to save time and maintain quality in patient care, and a glimpse into the life of a learner at the next level.

For students to become effective perspective-takers, faculty members must establish it as a priority in learning by including it in teaching and feedback. The patient's perspective must be a routine component of the history and expected in every student presentation.

*The **Review of Patient's Perspective (RPP)** can be used to complement the History of Present Illness (HPI) and other important components of the history as important data-gathering strategies.*

The RPP focuses on the patient's beliefs, concerns, and thoughts about the reason(s) for the encounter: What concerns you most about the illness? What is your understanding of the problem? Do you know who is in charge of your care?

13.5 The Risk of Too Much Metacognition

There are potential risks associated with reflecting too much—particularly dwelling on potential negative outcomes of behavior. This could lead to heightened anticipatory anxiety and require remediation. Wells contends that excessive metacognition is a feature of anxiety disorders [50]. Reflecting can become rumination, and "dwelling on" potential negative outcomes can lead to anxiety disorder [50, 51]. This can be amplified by perfectionism—not be able to live up to one's unrealistic expectations [52] (see also Chaps. 11 and 12).

Mentors must help learners must choose when to use and not use metacognition to enhance learning and performance.

In clinical training, it is imperative that metacognitive reflection must be balanced by the capability to act rapidly and decisively without dwelling in thought. Striking this balance is often the goal of remediation.

A Case Study [53]
Introduction
You coordinate a 6-week clerkship in your busy primary care office. Over several years, you have integrated many third-year medical students into your office:

- *You share your teaching responsibilities with two other physicians and a nurse practitioner, scheduling the student to work one-on-one with each during office hours, hospital rounds, and other outside activities so the student can see the full spectrum of your practice.*
- *You start each student with a brief orientation session, providing a printed summary of suggestions, expectations, and schedules.*
- *You schedule a formal session with the student at the end of each week to review progress and*

provide feedback.
- *You or your partners make yourselves available after hours each night, staying until all the student's questions are answered.*
- *You have successfully developed an attitude among your staff members that everyone is there to teach.*
- *You are familiar with the clerkship's syllabus. When one of the review articles in the file illustrates a problem seen in the office, you suggest to the student that he or she should do the reading that night; and your patients have also shown a willingness to work with the students.*

13.5.1 Case Study, Part 1

It is a Monday in January, the beginning of the fourth clerkship block of the academic year.

When your student contacted you a week ago for directions to the office, you told him to come at 8:30 a.m. for an orientation to the practice and that you would be booking your first patient 30 min later than usual. The student arrived at 9:45 a.m., noting that he had to make a stop at the medical school before coming to the office. You were already seeing patients, so he tagged along with you for the morning, saying very little.

Your noon hour was devoted to a weekly staff meeting. You managed to find a few minutes to chat. You discovered that the student is a transfer student from another medical school, with no previous experience working in an office setting or in primary care. His third-year clerkships have included psychiatry and OB/GYN, as well as general surgery, which he just completed. He said he "did OK."

During the afternoon, he continued to follow you. He kept his interactions with patients and staff to a minimum, and he appeared to be a polite bystander.

It is now 3:30 p.m., and you are in the hallway with him, right next to the coat rack. It occurs to you that you should devote your after-hours session to the orientation. Just as you think of this, he abruptly tells you that he has an appointment in the Dean's office and that he has to leave right now. He is reaching for his coat….

The student's behavior is likely to arouse in your negative feelings and perceptions of incompetence. Your subjective impression may be that he is lazy or at the very least uninterested. You are considering attributing his behaviors to an "uncaring attitude." However, from a diagnostic point of view, it is important to note the specific behaviors you see and hear. You could broaden your differential to include poor regulation—in particular poor time management and planning. He may or may not also have difficulty reflecting on the experience. You could determine this with questioning. Poor regulation could be combined with poor strategic knowledge—specifically the ability to understand the importance you have assigned to the meetings based on your own behaviors.

13.5.2 Case Study, Part 2

It is now Friday—the end of the first week.

When you talked with him on Tuesday, you pointed out that each day during the first week, he should see two or three patients with acute problems by himself, taking a history and reporting back to you. You pointed out that you expect him to be able to take and present a focused history for a patient who arrives for a problem visit by the end of the week.

Each day he seemed hesitant to see patients on his own, telling you that he would like to continue following you for the rest of the day to get a sense of how the office works. He continued through the week as a "polite bystander," contributing little, even when offered an opportunity to ask questions.

On Wednesday you asked him to take the lead interviewing an 18-year-old with an upper respiratory infection, and he launched into a complete review of systems. You had to stop him after a minute of detailed family history. You suggested that he read about URI and asthma (which are covered in the syllabus with links to great review articles).

Today you sent him in to see an asthmatic patient. He was there for 30 min, and you had to call him out. He presented a totally disorganized

picture to you. After he sees and poorly presents another patient with URI today and he tells you he has not had a chance to read up on it yet.

This student is performing poorly, but why? What kind of remediation is necessary? Before we can answer, it is important to conduct a thorough needs assessment with neuropsychological testing if necessary (see Chap. 9). Among other possibilities, the findings could suggest metacognitive deficits that signal decreased sustained attention and concentration functioning. He could have excelled in "courses" and other activities that required learning and demonstrating basic knowledge but is having difficulty regulating the learning process. He would likely need coaching to improve regulatory capabilities including planning. He would also benefit from feedback that fosters critical reflection and perspective-taking [29]. In his presentations, he is not prioritizing the important information. This interferes with effective written or oral presentation of a case. He has difficulty selectively attending to and focusing upon the most salient features of the history being presented. Because of poor prioritization skills, important historical information may only be partially encoded and subsequently partially stored in memory—the end result, retrieval, and problem solving are diminished.

13.5.3 Case Study, Part 3

Neuropsychological testing arranged through the dean of student affairs revealed, as you suspected, only mild weaknesses in attention and concentration. In collaboration with the student, you decide to work with him to develop his metacognitive competency. As a first step, you assess and address possible perspective-taking deficits. You devise a series of "teach-back" exercises with reflective feedback to help him "see" your perspective. You ask him to summarize your directions and expectations for him. You ask him to observe you with patients and present to you a summary of your and the patient's thoughts and feelings and then discuss how accurate his perceptions are. You then turn to exercises that will enhance self-reflection by beginning each

debriefing of your direct observation of his interaction with a patient by asking "How do you think the interaction went? What were you thinking? What were you feeling?" then comparing his answers to your perceptions. You then turn to "reflection-before-action" or his ability to anticipate behaviors that might occur or the multiple perspectives of the patients he will encounter by asking him, before he sees a patient, "What do you anticipate the patient will be feeling about her problem? How will she react? How will it influence your approach? How will you be feeling?" and reviewing the accuracy of his answers after the interactions.

Finally you turn to planning; you ask him to submit a daily written list of goals for the patient interactions, the day, the week, and the remainder of the clerkship. You have him share his schedule with you at the beginning of the week and then again at the end and commit to being on time and planning to be available to stay for at least 30 min at the end of the day to review patient cases with you if need be.

The student had a notable positive response to most of your interventions. He became a more active independent participant in clinical work, his metacognitive competence improved overall, and his professional behavior was significantly better, although not perfect (he continued to come in late once a week). While all this was a significant amount of extra work for you, it was worth it because it saved you the frustration and aggravation his behavior had been causing you and allowed you to take pride your contribution to his growing clinical competence.

13.6 Conclusion

The topic of remediation requires that we sharpen our focus on the endpoint of medical education. As educators, we are compelled to address the following question: Are we in the business of fostering our learners' minimum competence or are we promoting expertise? Regarding the former, medical school applicants uniformly demonstrate the ability to achieve competence in knowledge acquisition and basic application of knowledge. Our entrance exams in these areas are thorough, valid, and reliable. There is less evidence that our applicants have the ability to achieve expertise as demonstrated in their metacognitive abilities—to think critically, reflect in action, and take another's perspective. Those who have significant metacognitive learning difficulties often "fly under the radar screen" until they enter the clinical training environment and are required to excel at experiential learning and undergo less timely and objective assessment. Clinical expertise, all expertise in fact, demands metacognitive competence. This chapter provides faculty with a schema for assessing and addressing the metacognitive difficulties learners may be experiencing that require remediation on the road to expertise.

References

1. Audétat MC, Dory V, Nendaz M, Vanpee D, Pestiaux D, Junod Perron N, Charlin B. What is so difficult about managing clinical reasoning difficulties? Med Educ. 2012;46(2):216–27. doi:10.1111/j.1365-2923.2011.04151.x.
2. Arum R, Roksa J. Academically adrift. Chicago: University of Chicago Press; 2011. p. 259.
3. Quirk ME. Intuition and metacognition in medical education: keys to developing expertise. New York: Springer; 2006. p. 151.
4. Hartman HJ. Metacognition in Learning and Instruction: Theory, Research, and Practice. Dordrecht, the Netherlands, Kluwer Academic Publishers; 2001. p. 287.
5. Brown AL. Knowing when, where and how to remember: a problem for metacognition. In: Glaser R, editor. Advances in instructional psychology, vol. 1. Hillsdale, NJ: Erlbaum; 1978. p. 304.
6. Brown AL, Campione JC. Training strategic study time apportionment in educable retarded children. Intelligence. 1977;1(1):94–107.
7. Zimmerman BJ. Self-regulated learning and academic achievement: an overview. Educ Psychol. 1990;25(1):3–17. doi:10.1207/s15326985ep2501_2.
8. Perfect TJ, Schwartz BL, editors. Applied metacognition. Cambridge, UK: Cambridge University Press; 2002. p. 297.
9. Butler DL, Winne PH. Feedback and self-regulated learning: a theoretical synthesis. Rev Educ Res. 1995; 65(3):245–81.
10. Quirk ME. How to learn and teach in medical school: a learner-centered approach. Springfield, IL: Charles C. Thomas; 1994. p. 205.
11. Mast T, Davis D. Concepts of competence. In: Davis D, Fox RD, editors. The physician as learner: linking research to practice. Chicago, IL: American Medical Association; 1994. p. 139–56.

12. Candy PC. Self direction for lifelong learning: a comprehensive guide to theory and practice. San Francisco: Jossey-Bass; 1991. p. 567.

13. Shokar GS, Shokar NK, Romero CM, Bulik RJ. Self-directed learning: looking at outcomes with medical students. Fam Med. 2002;34(3):197–200. PubMed PMID: 11922535.

14. Song HS, Kalet al, Plass JL. Assessing medical students' self-regulation as aptitude in computer-based learning. Adv Health Sci Educ Theory Pract. 2011;16(1):97–107. doi:10.1007/s10459-010-9248-1.

15. Westberg J, Jason H. Fostering learners' reflection and self-assessment. Fam Med. 1994;26(5):278–82. PubMed PMID: 8050644.

16. Gordon MJ. Self-assessment programs and their implications for health professions training. Acad Med. 1992;67(10):672–9. PubMed PMID: 1388532.

17. Gruppen LD, Garcia J, Grum CM, Fitzgerald JT, White CA, Dicken L, Sisson JC, Zweifler A. Medical students' self-assessment accuracy in communication skills. Acad Med. 1997;72(10 Suppl 1):S57–9. PubMed PMID: 9347740.

18. Ward M, Gruppen L, Regehr G. Measuring self-assessment: current state of the art. Adv Health Sci Educ Theory Pract. 2002;7(1):63–80. PubMed PMID: 11912336.

19. Hmelo-Silver CE, Lin X. Becoming self-directed learners: strategy development in problem-based learning. In: Evensen D, Hmelo-Silver CE, editors. Problem-based learning: a research perspective on learning interactions (Chapter 9). Mahwah, NJ: Lawrence Erlbaum Associates; 2000.

20. Tousignant M, DesMarchais JE. Accuracy of student self-assessment ability compared to their own performance in a problem-based learning medical program: a correlation study. Adv Health Sci Educ. 2002;7:19–27.

21. Barnsley L, Lyon PM, Ralston SJ, Hibbert EJ, Cunningham I, Gordon FC, Field MJ. Clinical skills in junior medical officers: a comparison of self-reported confidence and observed competence. Med Educ. 2004;38(4):358–67. PubMed PMID: 15025637.

22. Fitzgerald JT, White CB, Gruppen LD. A longitudinal study of self-assessment accuracy. Med Educ. 2003;37(7):645–9. PubMed PMID: 12834423.

23. Bordage G, Lemieux M. Which medical textbook to read? Emphasizing semantic structures. Acad Med. 1990;65(9 Suppl):S23–4. PubMed PMID: 2400489.

24. McCune SK, Guglielmino LM, Garcia G. Adult self-direction in learning: a preliminary meta-analytic investigation of research using the Self Directed Learning Readiness Scale. In: Long HB, editor. Advances in self-directed learning research. Oklahoma: Research Center for Continuing Professional and Higher Education; 1990. p. 145–56.

25. Fisher M, King J, Tague G. Development of a self-directed learning readiness scale for nursing education. Nurse Educ Today. 2001;21(7):516–25. PubMed PMID: 11559005.

26. Wetzel AP, Mazmanian PE, Hojat M, Kreutzer KO, Carrico RJ, Carr C, Veloski J, Rafiq A. Measuring medical students' orientation toward lifelong learning: a psychometric evaluation. Acad Med. 2010;85(10 Suppl):S41–4.doi:10.1097/ACM.0b013e3181ed1ae9.

27. Witte, M. Witte's curriculum on medical ignorance. New Physician; 1993. p. 6.

28. Trapnell PD, Campbell JD. Private self-consciousness and the five-factor model of personality: distinguishing rumination from reflection. J Pers Soc Psychol. 1999;76(2):284–304. PubMed PMID: 10074710.

29. Bing-You RG, Trowbridge RL. Why medical educators may be failing at feedback. JAMA. 2009; 302(12):1330–1. doi:10.1001/jama.2009.1393.

30. Schon DA. Educating the reflective practitioner: toward a new design for teaching and learning in the professions. San Francisco: Jossey Bass; 1987. p. 355.

31. Novack DH, Suchman AL, Clark W, Epstein RM, Najberg E, Kaplan C. Calibrating the physician personal awareness and effective patient care. JAMA. 1997;278(6):502–9. doi:10.1001/jama.1997.03550060078040.

32. Curry L. Cognitive and learning styles in medical education. Acad Med. 1999;74(4):409–13.

33. Sternberg RJ. The concept of intelligence and its role in lifelong learning and success. Am Psychol. 1997; 52(10):1030–7. doi:10.1037/0003-066X.52.10.1030.

34. Rohrer D, Pashler H. Learning styles: where's the evidence? Med Educ. 2012;46(7):634–5. doi:10.1111/j.1365-2923.2012.04273.x.

35. Davies SM, Rutledge CM, Davies TC. Students' learning styles do affect performance. Acad Med. 1995;70(8):659–60. PubMed PMID: 7646734.

36. Martin IG, Stark P, Jolly B. Benefiting from clinical experience: the influence of learning style and clinical experience on performance in an undergraduate objective structured clinical examination. Med Educ. 2000;34(7):530–4. PubMed PMID: 10886635.

37. Entwistle NJ. Styles of learning and teaching: an integrated outline of educational psychology for students, teachers and lecturers. New York: Wiley; 1981. p. 293.

38. Dunn RS, Dunn KJ. Teaching secondary students through their individual learning styles: practical approaches for grades 7–12. Boston: Allyn and Bacon; 1993. p. 478.

39. Horiszny JA. Teaching cardiac auscultation using simulated heart sounds and small-group discussion. Fam Med. 2001;33(1):39–44. PubMed PMID: 11199907.

40. Swensson RG, Hessel SJ, Herman PG. Radiographic interpretation with and without search: visual search aids the recognition of chest pathology. Invest Radiol. 1982;17(2):145–51. PubMed PMID: 7076446.

41. Norman GR, Muzzin LJ, Somers S, Rosenthal D. Visual perception in medical practice. In: Nooman ZM, Schmidt H, Ezzat ES, editors. Innovations in medical education. New York: Springer; 1990. p. 204–17.

42. Goldberger P. Dep. of Delay: a Gehry for Los Angeles. New Yorker. 2002;78(3):29.

43. Flavell JH, Miller PH, Miller SA. Cognitive development. Englewood Cliffs, NJ: Prentice-Hall; 1993. p. 408.

44. Fowler JW. Mapping faith's structures: a developmental overview. In: Fowler JW, Keen S, Berryman J, editors.

Life-maps: the human journey of faith. Needham, MA: Humanities Press; 1978. p. 164.

45. Davis MH. A multidimensional approach to individual differences in empathy. JASA Cat Sel Doc Psychol. 1980;10:85.

46. Davis MH. Measuring individual differences in empathy: evidence for a multidimensional approach. J Pers Soc Psychol. 1983;44(1):113–26. doi:10.1037/0022-3514.44.1.113.

47. Longhurst M. Physician self-awareness: the neglected insight. CMAJ. 1988;139(2):121–4. PubMed Central PMCID: PMC1268026.

48. Markakis KM, Beckman HB, Suchman AL, Frankel RM. The path to professionalism: cultivating humanistic values and attitudes in residency training. Acad Med. 2000;75(2):141–50. PubMed PMID: 10693844.

49. Boenink AD, Oderwald AK, De Jonge P, Van Tilburg W, Smal JA. Assessing student reflection in medical practice. The development of an observer-rated instrument: reliability, validity and initial experiences. Med Educ. 2004;38(4):368–77.

50. Wells A. Emotional disorders and metacognition: innovative cognitive therapy. Chichester, England: Wiley; 2000. p. 236.

51. Wenzlaff RM, Wegner DM. Thought suppression. Annu Rev Psychol. 2000;51:59–91. PubMed PMID: 10751965.

52. Wells A. A multi-dimensional measure of worry: development and preliminary validation of the Anxious Thoughts Inventory. Anxiety Stress Coping. 1994;6:289–99.

53. Quirk ME, Lasser D. Teaching of tomorrow; 2010 (Unpublished Workbook).

The Reflection Competency: Using Narrative in Remediation

14

David Hatem

Abstract

Reflection is critical to experiential, lifelong, self-directed learning. The practice of medicine is characterized by complexity, uncertainty, emotional intensity, values conflicts, and ethical challenges. It has been proposed that the capacity to reflect masterfully is required to work effectively in such complex settings. Many physicians eventually master this capacity, most struggle somewhere along the way, and some manifest significant trouble reflecting accurately and efficiently enough to achieve clinical competence. In this chapter, the author reviews conceptual models highlighting the critical nature of reflection and demonstrates through case examples that reflective capacity can be enhanced through structured writing exercises. While narrative exercises have value for most physicians, students who will benefit most from a narrative-based remediation strategy are those who lack insight into their own problems and deficits, especially those who are insensitive to the perspectives of others and or who hold unexamined biases and attitudes that negatively impact clinical competence.

"By three methods we may learn wisdom: first, by reflection, which is noblest; second, by imitation, which is easiest; and third, by experience, which is the most bitter."

—Confucius

"We don't see things as they are, we see things as we are."

—Anais Nin

"All there is to thinking," he said, "is seeing something noticeable which makes you see something that you weren't noticing, which makes you see something that isn't even visible."

—Norman MacLean, "A River Runs Through It"

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14.1 Introduction

Medical education historically has emphasized facts and the latest scientific knowledge; it has been oriented toward achievement, action, and outcomes to the exclusion of other relevant domains of learning and ways of knowing. Nowhere else is this more manifest than in the course work required prior to medical school applications. The set of admissions expectations creates a path to becoming a physician and pressures students to abandon exploring fields of study unless they are directly related to the goal of becoming a doctor. This emphasis, as well as many other powerful forces impacting medical education, has led to a culture of "unreflective doing" in medical education, resulting in a underdeveloped capacity to learn by reflecting on practice.

As it has become clear that mastering foundational medical knowledge is necessary but not sufficient to being a competent physician, there have been renewed calls for reform in medical education [1]. For the past decade, accreditation leaders such as the Accreditation Council on Graduate Medical Education (ACGME) have set expectations that reach beyond medical knowledge [2]. There are initiatives to incorporate behavioral and social sciences into medical school [3], and premedical requirements and admission processes are broadening for the first time in decades [4–6]. Beyond suggesting additional content, the landmark Carnegie Foundation report proposes that there be explicit focus on the processes of integration of knowledge and experience, habits of inquiry, and improvement to promote excellence, identity formation, and the process of developing and refining professional values [1]. All of these efforts require individual physicians to master a set of cognitive abilities that enable lifelong, self-directed learning. The capacity to reflect before, during, and after practice is foundational to this emerging area of competence [7]. Yet the medical education literature suggests these skills are underdeveloped in learners and faculty [8].

> *Reflection:*
>
> *"a metacognitive process that occurs before, during, and after situations with the purpose of developing greater understanding of both the self and the situation, so that future encounters with the situation are informed from previous encounters."* [7]

14.2 Reflection as an Area of Competency

Reflection is particularly important in making a successful transition from the classroom to the clinical setting as students move from a student-focused setting to a patient-focused, experiential learning environment [9]. Thus, the call for reflection stems in part from the recognition that in professional practice there is a divide between the "high hard ground," where problems are solved through the application of research-based theory, and the more "messy" real world, where complex problems defy clear technical solutions. In these indeterminate zones of practice, where general rules do not result in solutions, where problems are characterized by their uncertainty, uniqueness, and values conflict, technically rational evidence-based solutions often cannot be found [10].

Recent literature traces the decline of empathy during medical school [11, 12]. Some attribute this to the conflicts between espoused values and the values in practice found in the "hidden curriculum" [13, 14]. The hidden curriculum will continue to exert significant influence on students' professional development unless we find ways to prepare students to recognize and critically consider the challenges such informal messages promote as they develop their own professional habits of mind.

To reiterate, experience alone is insufficient to guarantee learning. Reflection—critically considering what you are doing before, during, and after doing it—is necessary in order to promote learning. Reflection is foundational to self-directed

learning: it is necessary for self-assessment, eliciting and responding to feedback, reconciling feedback with one's own self-assessment, and then incorporating self and peer assessment into subsequent performance [15, 16].

14.3 Frameworks for Understanding the Reflection Competency

14.3.1 The Reflective Practitioner

The complex challenges experienced in medicine—dealing with death, patients with challenging personality types, multiple organ system failure in the intensive care unit, multiple chronic medical problems in clinic, or patients who don't adhere to their prescribed medications—defy simple solutions. Helping medical trainees learn from real-world settings requires a framework for choosing an effective action in a complex context. Donald Schon's model of the reflective practitioner has provided such a framework. He defines skills that we can apply automatically, almost by rote: "knowing in action" — those skills that we can apply and refine at the same time that they are being put into practice as skills requiring "reflection in action," and those skills that require that we think and process an experience after the initial encounter as requiring "reflection-on-action" [10]. In refining this model, others have acknowledged that we sometimes anticipate what we are about to do and prepare for it, an act discussed as "reflection-for-action." (See Chap. 13 for more detail on reflection as a metacognitive tool.)

14.3.2 Kolb's Cycle of Experiential Learning

As students move from the classroom to the workplace, they must be prepared to engage predominantly in experiential learning. This necessitates that students develop the capacity to effectively and efficiently derive lessons from concrete clinical experiences and then apply their learning to subsequent encounters refining their
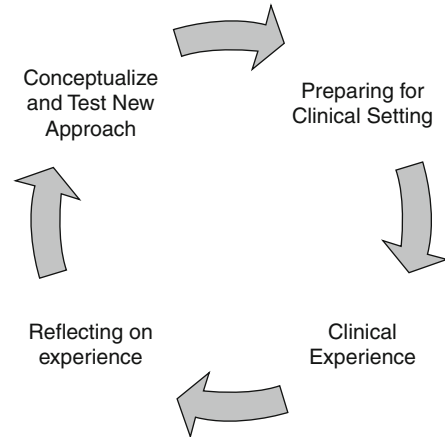
Fig. 14.1 Kolb's Learning Cycle adapted by Greenberg and Blatt for clinical experiences

own skills in the process [9, 17]. Consider a third-year student on the first day of the Neurology clerkship. He observes, along with other students, as the four residents and one attending make rounds on 23 patients. The entire session lasts about 90 min. Each patient is examined and discussed very briefly. The student notices that the most common diagnoses are stroke, seizure, brain tumor, and psychological factors contributing to neurologic symptoms. Seven of these patients initially presented with hemiparesis. What and how does the student learn from this concrete experience? The potential is great. Students often describe this as "drinking from a fire hose." But because of the overwhelming breadth of material available, most inexperienced students learn very little because they are not prepared to learn in this way. With a well-honed and disciplined approach the students could learn how to distinguish a "basic" neurologic exam from a series of special maneuvers applied in unique contexts based on the disease process either known or suspected. Students with well-developed critical reflection skills will be certain to walk away with specific reading goals. For instance, the student could be sure to spend 1 h that evening reading about the key features that differentiate among the underlying causes of hemiparesis. By actively reflecting on what they do and do not understand, they can maximize their own learning from concrete experiences. Figure 14.1 illustrates how this cycle works in clinical situations.
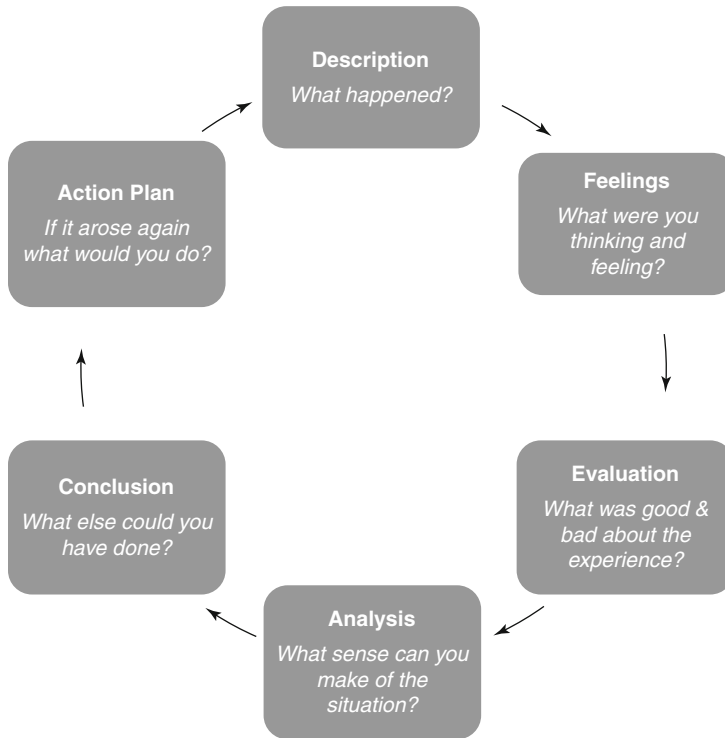
Fig. 14.2 Gibbs' Reflective Cycle provides prompts to faciliate a step-wise approach to analyzing or debriefing concrete experience. Adapted from Gibbs [24]. Reproduced with permission of the author

14.3.3 Gibbs' Reflective Cycle: Learning to "Pay Attention" to Concrete Experiences

Many students transition from classroom to clinical setting fairly easily. Yet, beginning students encounter many challenging situations when they first enter the clinical years [18–20]. They see dramatic and complex surgery, they see their first patients die, and they witness several cardiopulmonary resuscitations. They see vivid, dramatic, and shocking things that are often hard to digest emotionally [21].

> I have seen entirely too many people naked. I have seen 350 pounds of flesh, dead: dried red blood streaked across nude adipose, gauze, and useless EKG paper strips. I have met someone for the second time and seen them anesthetized, splayed, and filleted across an OR table within 10 min [22].

Paying attention during the concrete experience, allowing for reflective observation can be challenging in these circumstances. Two of many ways to promote this ability to reflect include mindfulness training and participating in Balint groups [16, 21, 23]. Gibbs' Reflective Cycle (see Fig. 14.2) gives structure and suggests a series of prompts to help facilitate trainees' reflective observation skills. Individuals using this cycle can compare their own observation to those of peers, their teachers or the literature [24]. This strategy promotes critical reflection skills [25], as defined by Brookfield.

14.4 Narrative in Medical Education: Deepening Learning and Abstract Conceptualization

Stories have a central place in medicine. We all have spent many hours telling each other about the interesting case, the diagnostic dilemma, the new presentation of an old disease, the new

disease. These stories are told in many different venues—in the hallways, over a late night snack, or in more formal settings. The role of writing stories in educating all physicians is not yet clear; however, such stories clearly serve an essential means of expression *for many physicians,* judging from the submissions to journals that publish reflective writing and the long tradition of books of patient stories by physicians [26]. The relationship between reflection and storytelling has been described in the medical literature [27–30].

Writing narratives favors depth over breadth of understanding a phenomenon [31]. Therefore, it makes sense that writing would be a useful strategy to move from raw reflections made on a concrete experience toward formulating the abstract conceptualizations needed to drive cycles of continually improving performance, as theorized by Kolb. There are a few intriguing outcome studies in this domain. Writing about stressful experiences boosts immune response to Hepatitis B vaccination in New Zealand medical students [32], improves lung function in patients with asthma, reduces disease activity in patients with rheumatoid arthritis [33], and has other benefits beyond the medical setting [34]. One outcome study demonstrated that a program that had interns write narratives was an emotional outlet for interns and led to greater personal awareness [35]. Those who teach reflective writing have proposed that it prompts learners to develop their unique voice in the life world of medicine. They assert that reading and listening to such reflective writing prepares students for the risk taking and vulnerability inherent in clinical practice and promotes professional development, general well-being, and empathy [36]. This has broad applications, including the promotion of cultural competence and fostering professionalism and professional development [37, 38] (see also Chaps. 7 and 8).

Yet those who publish narratives choose to write. The focus of the rest of this chapter is on the use of narrative as a method to enhance reflection in remediation of physicians and trainees. In this case, the goal of narrative is to serve as evidence of reflection of one's own attitudes, and to demonstrate understanding of another's perspective. It also has the potential to document improved self-awareness, performance improvement, and learning about how to think through complex medical dilemmas.

14.5 Remediation Strategies

Let's consider several challenging cases.
- You are meeting with PM, who failed a clinical skills exam because, although his communication skills were strong, he did not collect many key historical facts, did superficial physical exams, demonstrated poor clinical reasoning in his written notes, and displayed a limited number of diagnoses in his differential. When you ask him what he makes of the exam results, he explains that he plans a career in Emergency Medicine, and "while I know that there are other things that might be going on with the patient, my job is to make sure they are not going to die! Let the inpatient docs figure the rest out." When you reach out to his recent clinical supervisors, they report that he is a nice guy, interacts well with patients, knows a lot, and is eager to be helpful, but he often "misses the boat" with patient diagnoses.
- You are working with DK. He is very deferential and polite in your interactions and quiet in small group sessions. He has missed several assignments despite reminders from your course administrator. Your administrator tells you that after several reminders, DK has come by the office and complained that "they should send him an email and he should be able to post his assignments to a web site, like he did in college. When are they going to come into the twenty-first century?" Your administrator tells you that she doesn't want to work with DK any more and that other administrators have had the same experience. You confirm that several other course directors have had similar experience with DK.
- You are a clerkship director. On the second day of the rotation your colleague tells you that the student, RA, has regularly interrupted him in the middle of a conversation with a patient, to disagree with what he was saying.

When you ask RA about it, she explains "the attending was saying something that I didn't think was accurate. We have an obligation to be honest with the patient, don't we?"

- There has been a professionalism complaint filed against SJ, a second-year student who is just starting her physical diagnosis course. For the first hospital-based session, she was partnered with another student whose turn it was to be in the lead and gather the patient's history, while SJ was assigned to observe. SJ repeatedly interrupted her partner's conversation with the patient, asking repetitive questions. When her partner asked her to hold her questions to the end, SJ loudly replied, "I want to make sure this isn't a heart attack." She didn't seem to notice the worried look on the patient's face.

How would we approach such learners? What if you discern that he or she doesn't have insight into the problematic nature of their behavior? What if, despite your effort to prompt reflection, there is no obvious capcity to reflect and the learner sticks to his or her version of the facts, resists discussing specific thoughts or feelings, dismisses the importance of considering the impact of his or her behavior on others, and argues that his or her interpretation makes perfect sense and therefore he or she would not do anything differently?

These cases illustrate, among other things, problems with premature closure (deciding too quickly on a diagnosis without considering other possibilities—see Chap. 6), professionalism, and teamwork. In each case, the learner has difficulty perceiving the perspective of others and lacks awareness of their own biases or assumptions that significantly impact clinical problem solving.

How do we approach the remediation of such learners? How do we engage them in sincere and critical reflection on their own performance? How do we encourage the practice of perceiving multiple perspectives simultaneously? How do we convince them to remain "open-minded," both clinically and interpersonally?

There are many approaches and strategies relevant to the remediation of such physicians or trainees. In Chap. 6, Mutnick and Barone take on premature closure from the perspective of clini-

cal reasoning. In Chap. 7 Bebeau and Faber-Langendoen discuss strategies to address the moral dimensions of these challenges. In Chap. 8, Brondolo and Jean-Pierre tackle perspective taking through the lens of race and racism. In Chap. 13, Quirk explores perspective taking as an aspect of the metacognitive competency. I will explore how to use narrative as a practical tool to enhance reflection and learning.

14.5.1 Reflective Capacity and Motivation to Learn

In remediation, by definition, we are working with students whose initial approach has not worked. A deficit in reflective capacity often manifests as a disagreement about the presence of a learning need between the learner and others. Therefore, the learner can be seen as *unconsciously incompetent*, not yet aware that they have a learning need. They have a serious "blind spot" which they lack the motivation to address [39]. How can we motivate the unconsciously incompetent learner?

14.5.2 Transformative Learning and Remediation

Working with such learners is challenging but critical. What need first and foremost is insight. Theorists have proposed that this kind of transformative learning is stimulated by a "disorienting dilemma" [7, 40, 41] that upon reflection, usually guided by someone with authority, can lead to critically examining beliefs, ultimately leading to new insights and new ways of behaving [42]. How can we promote such insight or point out the disorienting dilemma, while avoiding inducing shame or humiliation in the learner, which would undermine motivation to learn? [43].

Identifying a learner for remediation, under the right circumstances, creates a powerful disorienting dilemma for physicians and trainees. This facilitates the potential transformative impact of narrative reflection. Learners who previously lacked insight can be pushed to examine their own attitudes and beliefs with expert help (see Chap. 16). Writing assignments are a key

component of this work and can achieve success through two pathways: by encouraging perspective taking and through narrative coherence. In doing this, the aim is to deepen the reflection and enhance reflective capacity [44].

14.5.3 Perspective Taking

Medical experts gain insight into the human condition by seeing the self in relation to others [45]. Trainees who require remediation often are dealing with "story deficits." Their incomplete understanding of multiple participants' viewpoints in a story interferes with a full understanding of both self and the situation. They may think they understand themselves, yet they are unaware of the effect that they are having on others. The trainee focused solely on "emergency" diagnoses runs the risk of discounting the patient's desire to know what they do have. It is not sufficient to explain "your chest pain does not represent a heart attack or a pulmonary embolus." The learner who speaks up in the middle of an encounter, either disagreeing with the attending, or speaking aloud about their diagnostic thinking, may not intend to offend the attending, or worry the patient, but seems to be unaware of the possibility that this might occur.

These trainees have a substantially different version of "what happened" (one of the first steps of the reflective cycle) compared to the perspective of others and do not exert effort to see others' perspectives [45]. A writing assignment may help them accomplish this critical task.

In this instance, the challenge of getting learners to engage in reflection cannot be open-ended such as "write a reflective essay…" but needs to focus their attention on key perspectives that you want them to consider. There are a range of prompts designed to raise a trainee's awareness of the perspectives of others, which include the following:

- Assign them to write about their own perspective and defend their point of view.
- Asking them to propose an alternate viewpoint to their own and or adopt another's perspective.
- Propose an alternative viewpoint with an observation.

- Demonstrate other perspective by using a short narrative or poem.
- Using the technique of framing.

For instance, when first sitting down with the student who interrupted the encounter while it was going on, you might ask her:

> *"What effect do you think questioning antibiotic choice in front of the patient might have on the patient's willingness to take any medicines that we prescribe?"*

> *"I was curious about your interruption in the middle of the encounter. Tell me what you were thinking about before you did this?" OR "I wonder what you were hoping that would achieve."*

These observations, asked with curiosity rather judgment and followed by a pause, are attempts to get her to stop and think about her actions, reflect on her own internal process, or speculate about intended outcomes. Her answer represents a narrative, because we are asking the learner, after the encounter, to tell a story in which she notices what took place, how she reacted, and how others reacted or might react. Following this dialogue, you could assign the student a written narrative to expand her reflective capacity by using Gibbs' Reflective Cycle as a guide. You should be clear with the student about the goal of the assignment ("We need to deepen your perspective taking and improve your awareness of the impact of your behavior, despite your good intentions"). It should be explicit, defined, and structured.

> *"Write a 500-word reflection on this episode. Describe what happened, what you were thinking and feeling, evaluate what was good and bad about what happened from your perspective, that of your physical diagnosis partner, and the patient, what you make of the situation, what you might have done differently, and what you anticipate you might do the next time you are in a comparable situation. Email this to me by next Monday, and we will meet again Tuesday at 3."*

14.5.4 Sharing Narratives to Address Negative Attitudes

There may be times where sharing different perspectives using published narratives might promote an alternative perspective that learners had not considered.

Consider the following situation. You are on a ward team. You have had many elderly patients with delirium on your service; you have had a number of patients transferred from nursing homes. You have noticed multiple comments made by the residents and students that seem to disparage elderly patients using terms like "gomers" and "veterinary medicine" and perceive these comments to be dehumanizing. You could tell your team that it bothers you, or that it is unprofessional to make such comments. That might work to change their behavior in front of you. But there is an alternative. Choose a 10-min slot during rounds to share and discuss the following poem written by one of our medical students.

Buttered Toast

While I tend the toaster
My mother has dabbed butter
On all six sides of her sourdough.

I am angered by her manners.
Even before her dementia, she was
the immediate light to my darker passion.
So I get offended at her impropriety,
As if manners were a thing that mattered in my family
While I really am angry at my inability
To make her happy, to stop her from losing her
Dignity, in front of strangers on the street, to save her.

And when her brow is tense with frustration,
About food, or the plans for the rest of the day,
Or the inability to come up with any
Word at all, she really is afraid of dying
And sadly grieving the things she knew she lost
though forgot the losing.

But the butter moves into the nooks,
and onto the fingers of Miss Alameda County 1960.
And her eyes widen as she says
Oh, this is so good! and I try like the butter
To melt for both of us. [46]

This poem illustrates a son's grief resulting from a mother's dementia. In the touching conclusion, we see that despite the losses, this woman can still derive great pleasure in eating a piece of buttered toast. This humanizes a woman whom the team may have trouble seeing as anything but a delirious and demented patient. And, through a simple narrative detail in the poem, we see her like her son has, as a once-beautiful woman. A brief discussion of this poem has served to create a highly memorable moment for a clinical team I have led, where insight was gained without the need for me to directly criticize their behavior.

14.5.5 Sharing Narratives to Reinforce and Deepen Positive Attitudes

In teaching about others' perspectives, we don't always need to use negative examples. There is great work each day going on around us, and we can celebrate this by promoting positive examples of physician or student behavior.

In their report of professionalism narratives at Indiana University School of Medicine, Karnieli-Miller and colleagues recount a number of narratives of both professional and unprofessional behavior written from the perspective of third-year students. In one example, a patient with HIV and acute leukemia nears the end of life, and extraordinary measures from multiple attending physicians are taken to insure that the patient is discharged from the hospital to attend her child's graduation in a distant city [19]. In looking at this example, consider asking our learner, "what made it possible for this to happen?" Such a question promotes looking for individual and institutional elements that support exemplary acts of professionalism and reflection on the barriers and promoters to professional behavior for all of us [47].

14.5.6 The Technique of Framing

Others have commented on how language used by medical personnel frames the developing attitude of our learners. In his timeless essay, "Can you teach compassion?" Jerome Lowenstein describes a very common case presentation on rounds on the inpatient service. This trainee started the clinical story the way most do, using standard, impersonal language: "This is the first admission for this 35-year-old IVDA" (IVDA is standard medical terminology for Intravenous Drug Abuser). On that day, he interrupted the presenter and asked the team: "Would our thinking or care be different if you began your history by telling us that this is a 35-year-old Marine veteran who has been addicted to drugs since he served, with valor, in Vietnam?" The medical team was embarrassed and silent as the insight sunk in that by using standard medical nomenclature, they were dehumanizing a person [48].

14.5.7 Seeking the Trainee's Perspective

As shown above, having learners read narratives is a way to help them sharpen their perspective taking. Assigning learners to write narratives can also serve to help us understand the learner's perspective, however objectionable we might perceive their behavior to be. Such assignments must be made direct and clear. Some students find assignments like "write about your reflections on a challenging patient" as "busy work" that forces them to be insincere (an interesting perspective in itself). With trainees who lack insight into their own learning needs, it is best to proceed in steps. Using Gibbs' Reflective Cycle as a guide, the assignments should be very specific.

For example, a first remediation assignment for the student headed into Emergency Medicine is to ask him to describe his approach to a patient with chest pain in the Emergency Department setting, particularly the goals of care for patients who are not admitted to an inpatient unit. Sometimes simply giving a struggling student time to consider his actions and opinions may lead to significant insights for him, which he may express in writing. It also provides a baseline for the ongoing remediation work. Starting this way, by seeking his perspective before addressing the behavior, also models the perspective-taking we hope to enhance.

14.5.8 The Perspective of the Patient and Others

Students are exquisitely sensitive to conflicting values that operate in the clinical environment and are distressed when required to select from mutually exclusive, value-based alternatives [13]. Therefore, a series of brief essays in which the learner is asked to write about the same event from differing viewpoints (*How would the patient presenting to the ER with chest pain perceive your approach? How would your ER attending view this?*) may enable him to reconcile some of this distress. This attempt to imagine what it might be like to be a patient in pain who hears: "You are not dying of a heart attack. Why don't you see your primary care doctor next week to figure out what is going on?" is likely to provide material to discuss with the remediation coach and lead to new perspectives on taking short cuts prematurely. Subsequent assignments for this student should include reading and writing an essay on the cognitive errors in diagnosis and common cognitive biases in the emergency department [49] (see also Chap. 6).

For the student who interrupted her attending physician because of her concern that what the physician said somehow compromised honesty with the patient, those in charge of remediation might choose a parallel writing prompt, such as:

You are seeing a patient. You feel confident that you know what is going on with the patient. You are explaining this to your patient, and right in the middle of your explanation, a second-year student, whom you offered to have shadow you, interrupts and contradicts what you are telling the patient. Write a narrative detailing what you would do in this situation, what you would think and feel about the interruption, and how it might influence what the patient thought of you and what you were saying to them. Detail what you would say to the student.

An extension of this assignment might include a narrative coda: *After the encounter, you go and look up what the second-year student was saying, and find out that it was correct. Does this alter your thoughts and feelings about what happened? Given your thoughts about how you might have acted in a situation in which you were interrupted, does this situation prompt you to re-think how you dealt with your attending?*

14.5.9 Perspective Switching

Perspective switching is a variation on this theme. You might give the student a published narrative of a challenging situation and ask him to imagine being the faculty member asked to deal with the trainee in this situation. Stories such as William Carlos Williams' "The Use of Force" [50], in which a learner loses his composure, or a

narrative in the Piece of My Mind section of *JAMA* called "It's over, Debbie" [51], in which learner takes part in a "physician-assisted suicide," make good material for this exercise.

This role exchange exercise is designed to put the learner in a new position, trying to encourage adoption of a new perspective, which entails looking beyond their own, and imagining the perspective of another, the very task they find challenging [28].

Collectively, these exercises allow learners to engage in critical reflection in a series of steps. Initially, we ask for their version of the events and debrief this by changing the frame by asking "what if" questions. We can present them with an alternative narrative from the literature, ask them to write a narrative to illustrate another "character's" perspective, ask them to take on a faculty role through "role exchange," or share with them a series of narratives from the literature that comment on the same theme in their narrative. Saving these narratives and reviewing them in sequence provides evidence of the growing perspective taking ability (or lack thereof).

14.5.10 Fostering Narrative Coherence

It was the early days of the HIV epidemic. I was at the beginning of my career as a physician, and I was seeing the next in a series of HIV-infected drug-addicted patients who I was going to follow longitudinally. As I took her social history, she told me that she began drinking alcohol regularly with her parents at the age of 6. She was sexually abused by her uncle and became pregnant at the age of 14, at which time she dropped out of high school and entered a series of increasingly challenging foster care settings. When I asked her how she had coped with all of these challenges, she laughed at me and answered: "I became a drug addict!" I was shocked at the powerful impact her laughter had on me. Because of my limited personal experience of drug abuse, my happy family life, and biases based on news accounts and popular press, I held beliefs that demonized drug users. In that moment, I had

insight. I was shocked out of my previously held beliefs by the fact that this woman's drug addiction made perfect sense in the context of her life.

People do things for a reason, their reasoning can be elucidated, and similar reasoning will inform subsequent actions. This concept of "narrative coherence" [52] suggests "characters act in a reliable manner." The concept of narrative coherence has informed my subsequent practice, leading me to elicit information during my patient interviews to understand behavior or symptoms that at first do not make sense. This enables my therapeutic rapport building and as a result enhances my clinical competence.

14.5.11 Using Narrative to Remediate Unprofessional Behavior

The student who administrators despise because he is condescending and disparaging while course leaders find pleasant because he is deferential, desperately needs to see and understand how others interpret his conduct. He may not see that his behavior reflects poorly on him and may negatively impact his clinical effectiveness and teamwork. He needs to reflect on his actions and the assumptions and beliefs underlying his behavior. Lecturing him on professionalism seems unlikely to be taken seriously enough by this student to change his future conduct, because it won't create a "disorienting dilemma" powerful enough to produce the needed insight and empathy for others.

Helping him discover that his behavior is unprofessional and therefore makes him an incompetent physician might do the trick. Requiring him to write a reflective essay that takes the administrator's point of view about his behavior, assuming the administrator's reaction makes sense, may produce the needed insight or uncover a more serious concern about his medical professionalism. If this simple strategy isn't successful, other approaches can be tried (see Chap. 7), or you may judge that the stakes must be raised for the student by initiating a more formal review of the student's pattern of behavior (see Chap. 20).

14.6 Faculty Development

Facilitating or coaching for the purpose of remediation using narrative is challenging yet can be highly satisfying. In this chapter we provided a basic introduction to both reflection and narrative as it can be used in remediation. The following are key issues faculty must keep in mind when using narrative with this group of learners.

Faculty must be goal-oriented and realistic. The purposes of asking a student to reflect are to deepen his or her understanding of self and the situation and inform subsequent action under similar circumstances. This is a learning experience meant to foster metacognitive skills essential for lifelong and self-directed learning (discussed in depth in Chap. 13).

Faculty must design useful narrative reflective assignments. These should be focused, structured, and clearly defined as modeled above.

Faculty need to be able to create a safe learning environment, be comfortable with strong emotions, and be willing to provide clear feedback and follow-up to the trainee [53] (see Chaps. 2, 15, and 16).

Faculty members need to feel equipped to set up and assess written reflections. Models for evaluation are being developed [54] that allow for assessment of the depth of reflection, distinguish between reflective writing skills and storytelling [55], and provide step-by-step instructions for conducting narrative analysis [56]. The strategy you choose to use should be selected to best fit the purpose of the narrative exercise. What seems most promising for evaluation of narratives used for remediation is the recent REFLECT framework developed by Wald and colleagues. They describe four levels of reflection on a spectrum, from discussion using (1) "habitual action" or non-reflective descriptions, to (2) "thoughtful action or introspection," which has more elaborate description yet limited analysis, to (3) "reflection" that includes attempts to understand or analyze a situation through clear description of the conflict or challenge, or explores emotions and attempts to look for meaning, to (4) "critical

reflection," which adds to simple reflection by exploring and critiquing personal assumptions and exploring alternate perspectives fully [44].

Faculty must be prepared to judge a trainee's reflective ability. For reflection to lead to performance improvement, learners must be willing to engage deeply in thinking about situations that have gotten them into trouble. Under the right circumstances, many physicians and trainees are able to engage in this type of reflection and even enjoy writing assignments, but some do not. In fact, some are not inclined to be introspective, may resist reflection, and may refuse to write anything that reveals personal thoughts or feelings. In the end, as with all remediation activities, judgments about whether this constitutes clinical incompetence or not must be made and documented.

For faculty members interested in learning more, there are a number of educational strategies for developing reflection and reflective capacity [7], guided reflection, and useful resources for faculty and faculty development [44]. A variety of additional methods have been described to help physicians enhance personal awareness through reflection [16, 29, 57, 58] (see Chap. 11).

14.7 Conclusion

Using narrative as a form of reflection for remediation of learners and more broadly in medical education has potentially far-reaching implications. Narrative seeks to explore the depths of an experience [31] and seeks a fuller understanding of both the self and of the situation, both desired outcomes of reflection [7]. Narrative is especially useful for helping to explore complex situations encountered in medicine, uncover biases and assumptions, elicit multiple perspectives, plumb the depths of our thoughts and feelings, and reinforce our choices or propose alternate actions for times when we encounter similar situations in the future. Clearer outcomes need to be delineated [59], but enhanced self-awareness, problem solving, and empathic understanding of patients are potentially demonstrable endpoints. With learners

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who require remediation and may not naturally be inclined toward reflection, challenging them to write clear narrative, which demonstrates the willingness to reflect, is the first step. Reflection as described in this chapter is clearly an important metacognitive skill closely related to the process of "slowing down when you have to," described in studies of expert clinicians who, when facing something unexpected or challenging consciously, switch into a more deliberate, effortful, yet mindful state that can ultimately lead to the delivery of expert, value-based, patient-centered, safe patient care [60]. (See Chaps. 1 and 6 for discussion of the related processes of Expertise Development and Dual Process Thinking.)

References

1. Cooke M, Irby DM, O'Brien BC. Educating physicians: a call for reform of medical school and residency. San Francisco: Jossey-Bass; 2010. p. 304.
2. Accreditation Council for Graduate Medical Education (ACGME). ACGME 2012 standards—review and comment—Phase II [Internet]. Chicago, IL: ACGME; 2000 [cited 2013 Jun 29]. http://www.acgme-nas.org/milestones.html
3. Association of American Medical Colleges. Behavioral and Social Science Foundations for Future Physicians [Internet]. Washington, DC: Association of American Medical Colleges; Nov 2011 [cited 25 June 2013]. p. 45. https://www.aamc.org/download/271020/data/behavioralandsocialsciencefoundationsforfuturephysicians.pdf
4. Witzburg RA, Sondheimer HM. Holistic review—shaping the medical profession one applicant at a time. N Engl J Med. 2013;368(17):1565–7. doi:10.1056/NEJMp1300411.
5. Muller D. Reforming premedical education—out with the old, in with the new. N Engl J Med. 2013;368(17):1567–9. doi:10.1056/NEJMp1302259.
6. Rosenthal E. Pre-Med's new priorities: heart and soul and social science. NY Times (National Ed) [Internet]. Accessed 13 April 2012 [cited 20 June 2013]: Education Life. http://www.nytimes.com/2012/04/15/education/edlife/pre-meds-new-priorities-heart-and-soul-and-social-science.html?pagewanted=all&_r=0
7. Sandars J. The use of reflection in medical education: AMEE Guide no. 44. Med Teach. 2009;31(8):685–95.
8. Duffy FD, Holmboe ES. Self-assessment in lifelong learning and improving performance in practice: physician know thyself. JAMA. 2006;296(9):1137–9. PubMed PMID: 16954495.
9. Greenberg L, Blatt B. Successfully negotiating the clerkship years of medical school: a guide for medical students, implications for residents and faculty. Acad Med. 2010;85(4):706–9. doi:10.1097/ACM.0b013e3181d2aaf2.
10. Schon DA. Educating the reflective practitioner: toward a new design for teaching and learning in the professions. San Francisco: Jossey-Bass; 1987. p. 355.
11. Neumann M, Edelhauser F, Tauschel D, Fischer MR, Wirtz M, Woopen C, Haramati A, Scheffer C. Empathy decline and its reasons: a systematic review of studies with medical students and residents. Acad Med. 2011;86(8):996–1009. doi:10.1097/ACM.0b013e318221e615.
12. Hojat M, Mangione S, Nasca TJ, Rattner S, Erdmann JB, Gonnella JS, Magee M. An empirical study of decline in empathy in medical school. Med Educ. 2004;38(9):934–41. PubMed PMID: 15327674.
13. Ginsburg S, Regehr G, Hatala R, McNaughton N, Frohna A, Hodges B, Lingard L, Stern D. Context, conflict, and resolution: a new conceptual framework for evaluating professionalism. Acad Med. 2000;75(10 Suppl):S6–11. PubMed PMID: 11031159.
14. Ginsburg S, Regehr G, Lingard L. The disavowed curriculum: understanding student's reasoning in professionally challenging situations. J Gen Intern Med. 2003;18(12):1015–22. PubMed PMID: 14687260.
15. Custers EJ, Stuyt PM, De Vries Robbé PF. Clinical problem analysis (CPA): a systematic approach to teaching complex medical problem solving. Acad Med. 2000;75(3):291–7. PubMed PMID: 10724322.
16. Novack DH, Suchman AL, Clark W, Epstein RM, Najberg E, Kaplan C. Calibrating the physician. Personal awareness and effective patient care. Working Group on Promoting Physician Personal Awareness, American Academy on Physician and Patient. JAMA. 1997;278(6):502–9. PubMed PMID: 9256226.
17. Kolb DA. Experiential learning: experience as the source of learning and development. Englewood Cliffs, NJ: Prentice-Hall; 1984. p. 256.
18. Branch Jr WT. Use of critical incident reports in medical education. A perspective. J Gen Intern Med. 2005;20(11):1063–7. PubMed PMID: 16307635.
19. Karnieli-Miller O, Vu TR, Holtman MC, Clyman SG, Inui TS. Medical students' professionalism narratives: a window on the informal and hidden curriculum. Acad Med. 2010;85(1):124–33. doi:10.1097/ACM.0b013e3181c42896.
20. Karnieli-Miller O, Vu TR, Frankel RM, Holtman MC, Clyman SG, Hui SL, Inui TS. Which experiences in the hidden curriculum teach students about professionalism? Acad Med. 2011;86(3):369–77. doi:10.1097/ACM.0b013e3182087d15.
21. Krasner MS, Epstein RM, Beckman H, Suchman AL, Chapman B, Mooney CJ, Quill TE. Association of an educational program in mindful communication with burnout, empathy, and attitudes among primary care physicians. JAMA. 2009;302(12):1284–93. doi:10.1001/jama.2009.1384.

22. Treadway K, Chatterjee N. Into the water—the clinical clerkships. N Engl J Med. 2011;364(13):1190–3. doi:10.1056/NEJMp110067.
23. Kjeldmand D, Holmstrom I. Balint group as a means to increase job satisfaction and prevent burnout among family practitioners. Ann Fam Med. 2008;6(2):138–45. doi:10.1370/afm.813.
24. Gibbs G. Learning by doing: a guide to teaching and learning. London: FEU; 1988. p. 129. http://www2.glos.ac.uk/gdn/gibbs/index.htm. Accessed 25 July 2013, Created by Claire Andrew created January 2001.
25. Brookfield SD. Becoming a critically reflective teacher. San Francisco: Jossey-Bass; 1995. p. 296.
26. Verghese A. The physician as storyteller. Ann Intern Med. 2001;135:1012–7.
27. Charon R. Narrative and medicine. N Engl J Med. 2004;350(9):862–4. PubMed PMID: 14985483.
28. DasGupta S, Charon R. Personal illness narratives: using reflective writing to teach empathy. Acad Med. 2004;79(4):351–6. PubMed PMID: 15044169.
29. Hatem D, Ferrara E. Becoming a doctor: fostering humane caregivers through creative writing. Patient Educ Couns. 2001;45(1):13–22. PubMed PMID: 11602364.
30. Epp S. The value of reflective journaling in undergraduate nursing education: a literature review. Int J Nurs Stud. 2008;45(9):1379–88. doi:10.1016/j.ijnurstu.2008.01.006.
31. Bolton G. Stories at work: reflective writing for practitioners. Lancet. 1999;354(9174):243–5. PubMed PMID: 10421319.
32. Petrie KJ, Booth RJ, Pennebaker JW, Davison KP, Thomas MG. Disclosure of trauma and immune response to hepatitis B vaccination program. J Consult Clin Psychol. 1995;63(5):787–92. PubMed PMID: 7593871.
33. Smyth JM, Stone AA, Hurewitz A, Kaell A. Effects of writing about stressful experiences on symptom reduction in patients with asthma and rheumatoid arthritis. JAMA. 1999;281(14):1304–9. PubMed PMID: 10208146.
34. Pennebaker JW. Telling stories: the health benefits of narrative. Lit Med. 2000;19(1):3–18. PubMed PMID: 10824309.
35. Levine RB, Kern DE, Wright SM. The impact of prompted narrative writing during internship on reflective practice: a qualitative study. Adv Health Sci Educ Theory Pract. 2008;13(5):723–33. PubMed PMID: 17899421.
36. Shapiro J, Kasman D, Shafer A. Words and wards: a model of reflective writing and its uses in medical education. J Med Humanit. 2006;27(4):231–44. PubMed PMID: 17001529.
37. Kleinman A, Benson P. Anthropology in the clinic: the problem of cultural competency and how to fix it. PLoS Med. 2006;3(10):e294. PubMed PMID: 17076546.
38. Bolton G. Reflective practice: writing and professional development. 3rd ed. London: Sage; 2010. p. 272.
39. Luft J, Ingham H. The Johari Window, a graphic model of interpersonal awareness. In: Proceedings of the western training laboratory in group development, Los Angeles; 1955.
40. Mezirow J. A critical theory of adult learning and education. Adult Educ Q. 1981;32(1):3–24. doi:10.1177/074171368103200101.
41. Mezirow J. Transformative dimensions of adult learning. San Francisco: Jossey-Bass; 1994. p. 247.
42. Cranton P. Understanding and promoting transformative learning: a guide for educators of adults. San Francisco: Jossey-Bass; 1994. p. 252.
43. Lazare A, Levy RS. Apologizing for humiliations in medical practice. Chest. 2011;139(4):746–51. doi:10.1378/chest.10-3334.
44. Wald HS, Borkan JM, Taylor JS, Anthony D, Reis SP. Fostering and evaluating reflective capacity in medical education: developing the REFLECT rubric for assessing reflective writing. Acad Med. 2012;87(1):41–50. doi:10.1097/ACM.0b013e31823b55fa.
45. Quirk ME. Intuition and metacognition in medical education: keys to developing expertise. New York: Springer; 2006. p. 151.
46. Bonavitacola P. Buttered Toast (unpublished poem). Medical Student at University of Massachusetts School of Medicine; 2013.
47. Inui TS, Cottingham AH, Frankel RM, Litzelman DK, Suchman AL, Williamson PR. Supporting teaching and learning of professionalism—changing the educational environment and students navigational skills. In: Cruess RL, Cruess SR, Steinert Y, editors. Teaching medical professionalism. New York: Cambridge; 2009. p. 108–23.
48. Lowenstein J. Can you teach compassion? In: Coles R, Testa R, editors. A life in medicine: a literary anthology. New York: New Press; 2002.
49. Croskerry P. The importance of cognitive errors in diagnosis and strategies to minimize them. Acad Med. 2003;78(8):775–80. PubMed PMID: 12915363.
50. Williams CW. The use of force. In: Williams CW, Coles R, editors. The doctor stories. New York: New Directions; 1984.
51. A piece of my mind. It's over, Debbie. JAMA. 1988;259(2):272. PubMed PMID: 3339794.
52. Fisher WR. Narration as a human communication paradigm: the case of public moral argument. Commun Monogr. 1984;51:1–22.
53. Aronson L. Twelve tips for teaching reflection at all levels of medical education. Med Teach. 2011;33(3):200–5. doi:10.3109/0142159X.2010.507714.
54. Learman LA, Autry AM, O'Sullivan P. Reliability and validity of reflection exercises for obstetrics and gynecology residents. Am J Obstet Gynecol. 2008;198(4):461.e1–8; discussion 461.e8–10. doi:10.1016/j.ajog.2007.12.021.
55. Aronson L, Niehaus B, DeVries CD, Siegel JR, O'Sullivan PS. Do writing and storytelling skill influence assessment of reflective ability in medical students' written reflections? Acad Med. 2010;85(10 Suppl):S29–32.doi:10.1097/ACM.0b013e3181ed3aa7.

56. Reis SP, Wald HS, Monroe AD, Borkan JM. Begin the BEGAN (The Brown Educational Guide to the Analysis of Narrative)—a framework for enhancing educational impact of faculty feedback to students' reflective writing. Patient Educ Couns. 2010;80(2):253–9. doi:10.1016/j.pec.2009.11.014.

57. Smith RC, Dwamena FC, Fortin VI AH. Teaching personal awareness. J Gen Intern Med. 2005;20(2):201–7. PubMed PMID: 15836555.

58. Charon R. The patient-physician relationship. Narrative medicine: a model for empathy, reflection, profession, and trust. JAMA. 2001;286(15):1897–902. PubMed PMID: 11597295.

59. Mann K, Gordon J, MacLeod A. Reflection and reflective practice in health professions education: a systematic review. Adv Health Sci Educ Theory Pract. 2009;14(4):595–621. PubMed PMID: 18034364.

60. Moulton CA, Regehr G, Lingard L, Merritt C, MacRae H. Slowing down to stay out of trouble in the operating room: remaining attentive in automaticity. Acad Med. 2010;85(10):1571–7. doi:10.1097/ACM.0b013e3181f073dd.

Feedback and Remediation: Reinforcing Strengths and Improving Weaknesses

15

Denise M. Connor, Calvin L. Chou, and Denise L. Davis

"Feedback is the heart of medical education" [1]

Abstract

Remediation imparts information that can change the trajectory of a learner's academic progress. Feedback is both the valuable information and the complex process that can help trainees and practicing professionals improve their performance. Effective feedback is nonjudgmental and requires skill development in many different domains, including characterizing the learner's problem, overcoming resistance, and coaching for success. The authors draw on current literature about feedback to construct a model designed to help mentors bridge gaps in their knowledge base and build confidence in giving feedback to learners who fail to meet educational standards. This chapter provides a four-phase primer with step-by-step guidance for mentors who are remediators.

15.1 Introduction

On a busy post-call day, you go to see Mr. Smith, an elderly patient suffering from dementia. His son, also a doctor, pulls you aside to say, "There's something I need to tell you about your resident." He describes an insensitive interaction between your

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senior resident Michael and the patient's wife, in which Michael forcefully suggested the patient should not be resuscitated. In a loud voice, Michael said, "you are just making him suffer," and then briskly exited the room, leaving the patient's wife in tears. Later that day, a bedside nurse remarks to you that Michael is "horrible" at returning pages and was very "rude" to the nursing assistant, yelling at her when the sheet recording inputs/outputs was not fully updated and telling her to "just do your job." There have been other negative off-the-cuff comments from faculty members about this resident, though no formal complaints have

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been filed, and no plans have been made to assess the trainee. Your own experience with Michael has been positive; he is smart, thorough, and efficient and often brings in literature to review with the team on rounds—but you have not had the opportunity to observe his bedside manner or interactions with colleagues in other disciplines. It is clear that someone has to talk to Michael, and you are probably that "someone."

Scenarios like this one are common at every level in medical education. What you do next will affect the quality of patient care, interprofessional team function, and the teaching and learning environment. Not addressing Michael's behavior directly, like many before you, implies endorsement of his negative behaviors and counters core principles of medical professionalism. Since society gives us the privilege to regulate our own professional conduct, we must guide our learners with clarity, skill, emotional maturity, and courage.

Feedback has been defined as specific, nonjudgmental information given with the aim of improving a trainee's performance [2], and feedback is an essential skill in remediation: the message must be instructive, relevant, and motivating. However, the feedback process is extremely complex, with myriad individual factors influencing its effectiveness. These factors include the skills and experience of the person giving feedback (for the remainder of the chapter, we will call this person a "guide"), the existing relationship between the learner and guide, gender roles, cultural contexts, timing, personality, and the presence or absence of impairment in the learner or guide. Because of this complexity, there is no "one-size-fits-all" approach. Instead, for feedback to be truly meaningful, the guide must tailor the approach to the learner, the message, and the goal. This chapter will introduce strategies of facilitative feedback designed

to improve the performance of trainees and, ultimately, the care provided to those we serve, our patients.

15.2 The Essentials: A Guide

The parallels between effective remediation and the skills needed for competent patient care are strong. For example, a foundational aspect of motivational interviewing, an evidence-based process that increases the chance that patients will initiate change to improve their health, is respect for patient autonomy. Similarly, faculty members must also respect learner autonomy to participate in remedial activities in a way that is fully authentic. This stance of respect allows faculty to remain aligned with and genuinely empathetic to the learner and his struggles, while at the same time upholding professional standards.

As much as we may desire collaboration with our learners, it is our job to ensure that our learners are aware of the consequences of how others perceive their behavior. If the behavior does not meet professional standards, the consequences can be significant and may include remedies such as medical or psychological leave from the training program, probation, suspension, or dismissal. Fairly implementing these remedies, requires that the guide has a description of the worrisome behaviors, a clear understanding of the standards of professionalism, and a working knowledge of institutional policies regarding consequences.

There are four steps critical to providing the empathy, nurturing, and guidance needed to help trainees make the changes they desire. Bienstock [3] describes these four basic phases of giving effective feedback as:

1. *Setup*
2. *Observation*
3. *Feedback delivery*
4. *Accountability and next steps*

In this chapter, we will describe the steps of a comprehensive feedback encounter for remediation. Table 15.1 summarizes fundamental principles, goals, and examples for feedback.

Table 15.1 Fundamental principles, goals, and examples for feedback

Principle	Goals/rationale	In practice
Remain nonjudgmental	• Decreases defensiveness • Critique is about behavior, not the person • Keeps alive hope for the possibility of change	• "Your scores are not what you hoped for, and this is a problem we can work together to solve"
Attend to emotions	• Humanistic and effective teaching takes into account the emotions of all parties involved • Parallel process with patient-centered care • Requires emotional intelligence	• "If I'm reading your facial expressions correctly, this is hard news to hear. How can I be helpful to you?"
Attend to timing	• Temporally related to the actual teachable moment • Feedback given at a time of receptivity for the learner • Major feedback likely not effective after a long, grueling hospital shift	• "I hope you got a decent night's rest. Could we meet in my office this morning to go over what happened last night in the emergency department?"
Elicit learner's goals before giving feedback	• Increases psychological "buy in" • Emphasizes autonomy	• "What are your goals for the clerkship?" • "If our meeting were wildly successful, what information would you leave with today?"
Gauge the amount of feedback the learner can incorporate during each session	• Too much information leads to overload • Too little feedback is a missed opportunity	• "Do you have the band width to hear one more item of corrective feedback about your performance, or shall we stop here?" (very important to pay attention to nonverbal cues)
Use objective information, ideally firsthand. Be specific	• "Observations are the currency of feedback" [6]. The goal is twofold: (a) behaviors are remediable while personality is not, so framing feedback in an objective way is much more likely to empower learners to improve their performance and grow, and (b) specific observations are critical to reducing the emotional response to corrective feedback by distancing the actions from the learner's self-concept • Avoids inference and personal judgments which can create defensive barriers	• "I saw the patient look away from you when you started to talk about medication changes"
Listen for cues about openness or resistance and readiness for change	• "Diagnose" the cognitive stage of the learner: pre-contemplative vs. action	• "So it sounds like you are still skeptical about the efficacy of recommending complete abstinence to patients with alcohol problems"
Use partnership: learner and teacher working "as allies" [6] with a "mutual agenda" [3] and with the learner's best interest and success as the shared goal	• Reduces defensiveness by approaching feedback from a place of genuine caring and concern • Enhances credibility of feedback—students "need to believe that the feedback was delivered from a position of beneficence" in order to find it credible [7]	• Simply stating our intentions and goals can set the tone—"I care about your growth as a doctor, and I think working on X is going to be critical for you as you continue to develop" • Long-term, longitudinal relationships naturally lend themselves to this spirit, and much work demonstrates how these kinds of relationships foster a culture of constructive feedback [5]

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Table 15.1 (continued)

Principle	Goals/rationale	In practice
Prepare (both teacher and learner)	• Provides time to create a mutual agenda for the feedback session	• Ask the learner to create a list of their key learning objectives and to reflect on their progress
	• Ensures the confidence of the teacher in delivering especially difficult corrective feedback, avoiding the phenomenon of "vanishing" feedback [6]	• Involves spending time gathering objective observations and consulting with colleagues about how to deliver difficult feedback
	• Allows time to consider the best strategy for facilitating feedback in way that can be heard and utilized by the learner	• Avoid presenting an overwhelming laundry list of issues without allowing time for reaction, reflection, and discussion
Label subjective feedback	• Identifies the feedback as the teacher's own reaction, rather than suggesting that the learner's deficit was so obvious as to be "broadcasted" for "all to see" [6]	• "When I heard you say 'XYZ,' I was concerned that the patient would not feel that they were being heard" vs. "You seem to lack empathy"
	• While our goal should be to focus on objective behaviors, at times more subjective feedback is needed. To maintain a nonjudgmental and constructive tone, labeling this feedback as subjective can be helpful and can improve the credibility of the feedback	• As Ende describes, language, such as "watching this video tape, I began to feel that you were not comfortable talking about the patient's cancer," is superior to "you looked uncomfortable talking about the patient's cancer"
Plan next steps	• Links feedback to concrete action planning and thereby demonstrates its real-world relevance to learners, increasing its acceptability [12]	• "Are there ways you can think of to work on your cardiac exam during your next rotation?"
	• Keep the tenet of active engagement in mind, much as we do in clinical encounters: a useful action plan is generally one arrived at by the learner [3]	• "How can I help you achieve your goals?"
Establish accountability and follow-up	• Much like counseling a patient in smoking cessation, the success of feedback depends on ensuring a follow-up plan; without this step, the learner may lose accountability to their plan and miss out on opportunities to ask for ongoing support	• "How might you work on your cardiac exam in your next rotation?"
	• In situations in which the learner is not able or willing to change, consequences related to falling below the standard are discussed and probation or dismissal is openly addressed	• "What do you think might happen if you are unable to follow the remediation plan or make the changes we've talked about?"
		• "Given the seriousness of your deficiencies, we will meet every 2 weeks for the next 3 months. If you are not able to earn a passing score on the clinical examination, the next step is probation. Can you please tell me what you just heard so that I can be sure that I was clear?"("teachback")

15.3 The Setup Phase

15.3.1 Setting Up the Feedback: An Invitation to the Learner

I would like to learn more about your educational goals and help you to improve your clinical skills exam scores. Could we meet in my office tomorrow afternoon from 4 to 5?

The setup is an invitation to collaboration and dialogue and establishes an effective learning environment. Successful guides avoid verbal dominance. In clinical practice, physicians who dominate with either tone of voice or number of words spoken during a patient interview are less likely to have patients rate the visit as satisfactory [4]; a similar dynamic occurs in the learner–guide relationship. Guides should give space to the learner, acting as facilitators and encouraging the learner to share insights, goals, regrets, and plans for improvement. A tool that successful guides can use to stimulate the learner's reflection, particularly for learners undergoing remediation, is "*I would like to meet with you to help you to improve your practice. In this spirit, before we meet, I would like you to think about the characteristics of exemplary physicians you have worked with and admired.*"

For learners who display resistance to the initial invitation or show avoidance behaviors, the guide may choose to use more directive, "warning shot" language—knowing that this power play at the outset of the relationship could affect the development of necessary rapport in the feedback process.

"*Please come by my office at 4 pm. We need to discuss some reports I have received on your behavior. It will take an hour. Please take care of the time-sensitive tasks, let the interns know you will be unavailable and we can grab a cup of coffee and talk.*"

Specific features of the setup include:

1. Privacy. Remediation is accompanied by shame for many trainees; privacy is critical.
2. Timing. Educational literature suggests that immediate feedback, though sometimes desirable, may occasionally backfire, for example, when a learner is overwhelmed by emotion and cannot hear corrective feedback. (In the index case above, giving corrective feedback to Michael when he is sleep deprived will likely be ineffective.) On the other hand, waiting for the end of a clerkship to give major corrective feedback about an event that occurred 7 weeks prior will likely be less effective.
3. Space. If at all possible, these feedback sessions should not be rushed. Our experience is that 60–90 min allotted for the first session and 30–60 min for follow-up sessions give the feedback an expansive quality that increases effectiveness.
4. Control. As in the patient–physician relationship, an unbalanced locus of control can lead to a sense of powerlessness and potential nonadherence with a necessary course of action. Therefore, we advocate:
   (a) Eliciting the learner's goals
   (b) Communicating clear expectations for how long the meeting will last, whether or not you plan to offer multiple sessions; what information will be provided to other faculty and administrators; and how sharing that information might affect the mentoring relationship
   (c) Using empathic statements, even in this initial step, to reduce understandable anxiety and help create a collaborative atmosphere of trust that is critical to a successful remediation process: "*I can see you are working hard, and I imagine you had hoped for a better evaluation*"

15.3.2 Know Thyself: Preparation and Practice

Soberingly, the learners with the most need for improvement may end up being the ones who

receive the least constructive feedback. In a study of feedback given to residents by internal medicine faculty after encounters with standardized patients, Kogan et al. demonstrated that the faculty member's emotions influence feedback content and how it is delivered [5]. Often, to deal with the tension that faculty felt when confronted with poor performance, or when residents demonstrated limited insight into that performance, faculty minimized the corrective aspects of their feedback and overemphasized the positives. Furthermore, faculty often lacked a sense of efficacy in their ability to provide guidance to learners for how to improve, especially in areas such as professionalism and empathy; this lack of self-efficacy similarly led faculty to de-emphasize constructive feedback. Complicating matters further, feedback content was linked to the faculty's assessment of the learner's potential—specifically, learners deemed to have high potential were more likely to receive critical feedback compared to those felt to have lower potential.

Giving corrective feedback is challenging and requires courage, even when the guide approaches feedback with the best intentions. While initial emphasis on the positive is intended to support the learner's self-concept and strengthen the teacher's relationship with the learner, if it ends up leading to a "vanishing" message [6], we have benefited neither our trainees nor our patients. For example, consider the loss of message that can occur when using the typical "feedback sandwich": "*I like how you are always prepared for rounds and for teaching the team. Maybe it might help to pay a little more attention to how you are interacting with patients' families and nursing staff. But overall you are very thorough.*" The key constructive message regarding professionalism can become lost in the sandwich.

Therefore, a critical step in maximizing the impact of difficult feedback is to understand one's own biases and emotional responses. Before sitting down to give challenging feedback, it is critical for us to first acknowledge our discomfort with communicating this kind of message, to commit to the importance of providing it despite

this discomfort, and to consider how we might help learners develop a plan for improvement. Without taking these preparatory steps, we risk losing the opportunity to provide important feedback. At times, especially when dealing with a struggling learner, this need for preparation may require consulting with colleagues and brainstorming about strategies for improvement before meeting with the learner.

Recommendation: *For faculty members new to remediation, to reduce anxiety and improve performance, we strongly suggest practicing major corrective feedback in a safe setting with a peer or mentor before the high-stakes situation with the learner.*

15.3.3 Consider the Learner

If as teachers we struggle with giving difficult feedback, we should not be surprised that receiving such feedback would be difficult for learners as well. Indeed, the learner's response is a key driver of faculty discomfort with giving corrective feedback. To accommodate our learner's responses, we must move beyond simply delivering bad news: we are called upon to become facilitators of feedback and growth. Through this facilitation process, we can help our learners acknowledge their initial emotional responses without judgment and to move beyond their initial gut feelings to more useful engagement with the feedback message. Practicing pausing after delivering feedback and following up with phrases like "*before I go on, I just want to take a moment to ask how this feedback is landing on you*" or "*it can be really hard to hear this kind of feedback—what's going through your mind right now?*" are useful ways to allow the learner to give voice to their emotional reactions and open the door to engaging with the feedback with less resistance.

Confidence is a necessary prerequisite for learners to accept constructive feedback [7], yet we encounter a paradox: while struggling learners

can benefit most from external feedback for growth, these same students and trainees, due to their lack of clinical confidence, are often the most poorly positioned to actually hear and incorporate it. On the other hand, overconfidence or inaccurate self-assessment can stand in the way of feedback, with learners tending to discount critical feedback as lacking credibility [7]. Cultivating a healthy, respectful teacher–learner relationship and including genuine reinforcing feedback are particularly important in ensuring that our learners' confidence is maintained and that the guide's credibility is strengthened, especially when giving major corrective feedback.

15.3.4 Prepare for the "Gut Reaction"

Cognitive behavioral theory suggests that we naturally protect and insulate ourselves from critique. In their self-assessments, students demonstrate a "tendency to trust positive outcomes/feedback while discounting negative ones" and to "attribute negative outcomes to situational (external) factors while attributing positive outcomes to [their] own skill" [7]. In preparing to give difficult feedback, it is useful to prepare for these kinds of natural responses. Giving learners the space to voice these initial responses, acknowledging their legitimacy, and then moving forward can help to minimize the possibility that these rationalizations will become permanent road blocks to personal growth and responsibility. It is useful to give learners the chance to expand on these external factors, for example, by saying "*I'm glad you're bringing up these systems issues—it is certainly true that many of our decisions and actions in medicine are complex, and at times are the result of factors beyond our control. Tell me more about the systems that you feel contribute to this issue.*" After offering the space to discuss these external factors, learners may be more ready to hear, "*It is also worth thinking about how, even in this context, we as doctors must take matters into our own hands and bypass some of these road blocks. We are, after all, part of the system.*"

15.4 The Observation Phase

Feedback provides a mirror in which the trainee can see specific behaviors that are either serving him/her well or need to be changed in order to meet a professional standard. In order to give truly specific feedback to a learner, an observer must have keen observation skills. It can be helpful to frame observations as specific objective behaviors that an observer sees, hears, or notices or as the guide's subjective reactions to one of those behaviors. The more "low inference" these observations are, the less the feedback may be perceived by trainees as whimsical, subjective, or unfairly judgmental.

Many times, course leaders, program directors, or department chairs must, by the nature of their roles, use information gleaned from trusted sources including faculty and other stakeholders in the healthcare system instead of using direct observations. Even given this limitation, descriptions of specific and observable behaviors are required, or the conversation can easily devolve into an argument over differences in perspective or lack of programmatic or faculty support [8]. The ultimate solution, of course, is to train all faculty members in effective feedback techniques so that learners can make appropriate corrections well before escalating to a meeting with a program leader.

15.5 Feedback Delivery Phase: The ART of Delivering the Message

You have invited the learner to a dialogue, you have arranged to meet privately, and you have set aside ample time for the discussion. You have gathered observations about the specific behaviors that require remediation as well as those that should be reinforced, and you may have your own notes, quotations from other stakeholders, or videotapes at hand that will provide the data the learner needs to make changes. How do you deliver the message?

We favor a three-step approach to the feedback conversation. By eliciting learners' perspectives first, attending to and empathizing with their responses, we signal that we are allying with them in their learning, and we are encouraging them to develop their own self-assessment skills.

The ART of Effective Feedback

Ask the learner about goals and self-assessment.

Respond to the learner's perspective.

Tell your perspective.

15.5.1 Ask the Learner for Goals and Self-Assessment

For reinforcing feedback: "*What did you do effectively in that procedure?*" "*I'm looking back at your goals for the clerkship, and you mentioned you wanted to work on your presentations. How do you feel your presentations have improved over the last couple of call cycles?*"

For corrective feedback: "*What might you have done differently?*" "*Given that your scores on the final exam for your surgery clerkship are two standard deviations below the mean, what could you have done differently to improve your score and pass the clerkship?*"

For your meeting with Michael:

"*I appreciate your making the time to meet with me. I have heard a couple of reports about your interactions with staff and patients' families, and I am eager to hear your perspective. Can you tell me about your interaction with Mr. Smith's wife?*"

15.5.2 Respond to the Learner's Perspective, *Even If the View Differs from Your Own*

This step requires close reflective listening and offers an opportunity to mirror the trainee's point of view. Mirroring does not mean you are

endorsing the learner's perspective; it simply means you are listening. Occasionally, when listening to a dispassionate and accurate summary of what you heard, the learner will begin to reflect on their own behaviors (see Chap. 13, Metacognition, for more details).

"*I am hearing that you felt that the family's expectations for Mr. Smith's recovery were overly optimistic, and that it's hard for you to take care of patients with dementia who you feel inappropriately overuse the health care system. Is that accurate?*"

Empathic words can be very helpful (see text box below): "*I know that it was a busy call night, and I imagine that the juxtaposition of Mr. Smith's admission on the heels of that very difficult code in the ICU must have been very jarring.*" [9, 10]

Empathic Feedback PEARLS [9, 10]

Partnership: I'm sticking with you through this process.

Empathy: I imagine it is frustrating to come this far and only now be told that you may not pass the clerkship.

Apology: I'm sorry it has been such a difficult time for you.

Respect: I give you a lot of credit for remaining open to the feedback I've shared with you.

Legitimation: Anyone in your position would feel worried about what comes next.

Support: I am committing to work with you, to providing you with my reflections, and to connect you with helpful resources.

When the learner is able to reflect mindfully on his/her errors, the response of the faculty mentor is strongly affirmative:

"Yes, you are seeing it clearly. As you note, your strong feelings may have come across as harsh to Mrs. Smith, who has been trying very hard to keep her husband from suffering, at great emotional expense to herself. Let's work together to find a solution here. I am committed to helping you succeed."

You: *"So I'm hearing how frustrating it is to do our best for our patients when important data like ins and outs are incomplete."*
Michael: *"Yeah. I do my job—they need to do theirs too."*
You: *"I'm wondering what you think the impact of your interaction with the nursing assistant was."*

15.5.2.1 Special Considerations for Challenging Corrective Feedback Scenarios

Hearing unexpected critical feedback will frequently trigger strong emotion, as noted in the setup section above. Taking the focus off of the learner as a person and onto a specific behavior or set of behaviors is essential to de-amplify the emotional component of corrective feedback, making the feedback easier to digest and less likely to directly attack the learner's self-concept. For particularly sensitive corrective feedback, making space for the learner to *voice their initial impressions and process their emotional reactions* is key to moving beyond these emotions and toward more cognitive engagement with the content.

You: *"That sounds like a great plan with Mrs. Smith: to hear the family's goals, to relate to them as people, and to apologize to her and her son. Thanks for discussing that so openly. I'm hoping to move on to another interaction that the nursing staff let me know about. About Ms. Fogerty's nurse?"*
Michael: *"Now THAT was unacceptable. We're trying to keep very close track of the ins and outs for Ms. Fogerty. Her congestive heart failure is so tenuous, and we made clear to the nursing staff that this is critical. It's going to make her hospital stay longer than it needs to be."*

Another useful framework for providing difficult corrective feedback draws on the model for behavior change often used in the clinical setting [9]. Considering the stages of change (precontemplation, contemplation, determination or preparation, action, maintenance, relapse) when providing feedback allows us to focus on realistic goal setting that meets our learners in their motivational process to change. As with prescribing nicotine patches for a patient who is pre-contemplative about smoking cessation, it is ineffective to suggest action plans for change to learners who have not yet even accepted the credibility of our feedback. Rather, if we focus on moving learners along in the stages of change, helping them to acknowledge and address barriers, and guiding them toward an understanding of the tension between their stated goals and their current behavior, we are not only being learner-centered, but we are also more likely to help our students achieve real and lasting growth. Further, if we recognize moving a student from one stage to the next as a success, we are less likely to feel defeated in what should be an iterative process of encouraging growth.

Michael: *"The hospital is just not committed to good nursing care."*
You: *"You're sounding resigned."*
Michael: *"I can't help it if they prioritize their work breaks over doing what's right for patient care."*
You: *"I know the system seems inefficient. Do you think your response to the nurse is going to make it more or less likely that the ins and outs will get done appropriately?"*

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Michael: "*Well, less likely, I guess. But I'm not a nursing supervisor. I can't get them to do that.*"
You: "*So it sounds like you're feeling powerless to change the nursing practice, and at the same time, you might recognize a little bit that your response may not have been totally productive.*"

When using one or more of the tools outlined above, it is important to be mindful of the seductiveness of transitioning to a more directive style. It is not enough to simply give the learner time to talk at the beginning of the feedback session and then move back to a teacher-directed lecture. A truly facilitative approach requires teachers to maintain a two-way conversation throughout the feedback session by asking probing follow-up questions based on the learner's initial reactions, guiding the learner's understanding, and ensuring that the content communicated relates to the goals and self-assessment given by the learner. Our experience is that this facilitative approach maximizes the possibility that learners will internalize some of this critical feedback.

15.5.3 Tell the Learner Your Perspective

Finally, after these loops of inquiry and response, guides can share insights and highlight key learning points to reinforce for learners what they should continue to do and what could be done differently: "*From my perspective, you've suffered from lack of preparation in your test taking. Asking your surgical chief resident and attending about what materials to study before the exam would have been enormously helpful to you. Does that ring true to you?*"

15.5.3.1 Tips for Reinforcing Feedback
It is worth spending some time considering the value of and the technique for reinforcing feed-

back. Reinforcing feedback is often in danger of being seen as simply the necessary packaging that allows the teacher to provide "important" corrective feedback. In fact, while reinforcing feedback does play a role in maintaining and fostering the learner's self-concept, it also serves a critical teaching role by highlighting behaviors that should be continued and developed. If we do not reinforce behaviors, those behaviors are at risk of extinguishing.

Therefore, it is critical when planning for a feedback session to spend just as much time thinking about what reinforcing points to address, as considering what corrective lessons to discuss. For reinforcing feedback to be meaningful, it must be genuine, thoughtful, and specific.

Contrast "*you have a great fund of knowledge*" or, worse, "*you are really smart*" to

Your understanding of the management principles of infections, particularly community acquired pneumonia and nosocomial UTIs, is solid, and shows a good foundation in clinical decision making. Going forward, I encourage you to continue to think critically, as you have this month, about how the management of hospital acquired and community acquired infections differ.

It is crucial to focus on behaviors rather than personalities. While it is natural to want to say "*you're terrific!*" to learners who are doing great work, it is important to avoid implying that how they do is a direct reflection of their value as a person. Otherwise, when they perform less well, students and trainees may view their shortcomings as immutable character flaws and therefore may become more defensive and less able to incorporate corrective feedback in the future.

15.5.3.2 Openings to Corrective Feedback
To assess a learner's readiness to hear additional feedback, it is often helpful to ask for permission. "*Would you be open to hearing something I noticed about your presentation style?*" The inherent hierarchy in the guide–learner relationship typically results in agreement from the learner, but if the guide remains mindful of nonverbal expressions of resistance, the trusting

relationship can be maintained. Prefacing a piece of corrective feedback with words of support, such as "*I want you to be the best professional you can be*," hearkens back to a core principle of feedback: that it be given with the intent to improve performance.

The aim of corrective feedback is not simply to identify problems but also to help the learner identify a path to improvement [3]. It is useful to make clear links between specific behaviors and overall goals, either those goals previously stated by the learner or performance goals for the course of study, rotation, etc. Giving feedback that is relevant to the learner increases the likelihood that the learner will act upon it. By ignoring the learner's goals, guides risk meeting with defensiveness and rigidity rather than with learner engagement and participation. Alternatively, an explicit statement, such as "*the expectation for passing the clerkship is to present a patient case thoroughly and in an organized way. Lack of preparation slows down the clinical team during rounds, and as much as you may know, makes you appear less knowledgeable*," can demonstrate for the learner why feedback may be relevant for them. To simply say the student should spend more time preparing their presentations without explaining why makes the student more likely to disregard the feedback [8, 11].

Further, since the goal of feedback is facilitation of the learner's growth, it is wise to avoid addressing issues that the trainee cannot readily modify [6]. For example, consider a struggling student who is far weaker than his peers in generating a relevant differential diagnosis. Giving vague feedback about "*reading more*" and "*giving better presentations*" is much less helpful to the student than choosing a concrete issue to address, such as ordering a differential diagnosis list from most to least likely rather than presenting unlikely possibilities in no particular order.

Finally, subjective feedback can potentially be very helpful, particularly for "noncognitive" realms such as communication skills or professionalism. "*I felt concerned when I heard you raise your voice to Mr. Smith's wife, not only for her but also for you*," or "*I felt uncomfortable hearing from the nursing supervisor again about your not returning pages*." When delivering these more value-based or subjective pieces of feedback, it is useful to utilize the language of personal perspective. Compare "*You were not empathetic with that patient*" to "*When you were typing while Ms. X was discussing her sick husband, I was concerned that she might interpret your actions as unsupportive*."

15.6 The Next Step: Accountability

Accountability and follow-up are often neglected in the process of giving feedback. Because remediation is a high-stakes situation, sometimes putting the learner's academic progress and professional education on the line, accountability is especially important. After delivering feedback, work together to set up a clear plan for remediation.

> You: "*Just so I can see if we're on the same page, will you recap for me our next steps based on our conversation today?*"
> Michael: "*About Mrs. Smith, I need to go in there and apologize for the words I used. I'm not going to apologize to the nurse for not doing ins and outs, but I will be careful about recognizing when I'm getting frustrated with the system and try not to lash out. I can't do anything about not answering pages when I'm in the middle of a code, but I'll follow up with the nursing supervisor to smooth over any rough edges. And you'll follow up with the hospital administration about nursing policy and recording necessary data.*"
> You: "*Sounds good. Before we end, I am curious to hear what, if anything, was helpful to you in our conversation today. I'd also like to set up a time to meet after we've each had a chance to follow through on our plan.*"

During the follow-up session it is essential to recognize progress with specific reinforcing feedback. For instance: "*I had occasion to speak with the nursing supervisor today, and she said that you two had a fruitful conversation. I know it might have been a little uncomfortable to do that, and I think it speaks well of your professionalism.*"

Should the learner fail to follow through with the agreed upon plan for remediation, it is the guide's responsibility to honestly and directly inform the learner about next steps in the remediation. Though difficult words to say, the following may be necessary:

> "*You did not follow up with Mrs. Smith or the nursing supervisor, and I continue to receive complaints from patients and staff about your lack of professionalism. Given that we agreed on these steps to address your professionalism, my role requires that I take this issue to the Committee on Resident Education. I will let you know the outcome of our deliberations as soon as I can, in the next two weeks. I remain committed to helping you and want to offer a visit with the Resident Well Being team. Would you like to talk with a counselor today about what has happened?*"

Strong emotions are inevitable for trainee and the guide alike at this stage of remediation, and both may benefit from support after a difficult conversation like the one just illustrated.

15.7 Summary Thoughts

For corrective feedback to truly become a natural part of the process of learning and professional development, the culture of medical education must change. A common theme in the feedback literature is that individuals and groups help to co-create a culture of feedback. Role modeling is a good place to begin. Should our students and trainees see us, their guides and teachers, not

only seeking their feedback but also pushing ourselves to continually achieve our best by utilizing the advice and guidance of our own mentors, we may help to establish a more robust medical culture in which it is the norm to seek and incorporate meaningful feedback into our practices.

15.8 A Final Illustrative Case

> *Brook is a third-year medical student on her medicine clerkship who is struggling with her clinical reasoning. She is far behind her peers in being able to construct a reasonable differential diagnosis and plan for her patients. If she remains on her current trajectory, she will not pass the clerkship. As her ward attending, you must provide her with this crucial feedback.*
>
> You: "*Brook, I'd like to find a time this week when you and I can spend some time discussing your progress on the clerkship. I'd like to particularly discuss your clinical reasoning. Will Tuesday afternoon at 1p work for you?*"
>
> Brook: "*OK.*"
>
> You: "*I'd like you to spend some time thinking about your goals for the clerkship and where you are in being able to develop a differential diagnosis before we meet. Is there anything else you'd like to discuss?*"
>
> Brook: "*I'd also like to talk about my role on the team.*"
>
> You: "*Sounds good, I'll look forward to talking on Tuesday.*"
>
> You have now accomplished the setup and worked on a mutual agenda. Your next step is to prepare for the meeting by being sure that you have a set of concrete observations of Brook's weaknesses in terms of clinical reasoning and to consider what strengths she has demonstrated during the rotation. Because she wants to discuss her role on the team, you meet with your senior resident and interns to get their perspective on Brook's role.

(continued)

You: "*I'm glad you were able to set aside time to meet today, Brook. The main thing I want to discuss today is how you generate and present a differential diagnosis on your patients. I know you also wanted to discuss your role on the team. Is there anything else we should add to our agenda?*"

Brook: "*I don't think so.*"

You: "*OK, let's first reflect on your goals at the beginning of the rotation around clinical reasoning. What did you want to work on?*"

Brook: "*I wanted to get better at remembering a larger list of differential diagnosis for each patient's complaint.*"

You: "*How do you feel you're doing with that goal?*"

Brook: "*I can remember more of the unusual diagnoses, which I'm pretty happy about. I've been doing a lot of reading on some of the rare diseases.*"

You: "*I agree that you have demonstrated knowledge about some rare diagnoses in your presentations, which says a lot about your fund of knowledge and reading. Do you think there have been any potential downsides for you on focusing on the 'zebras'?*"

Brook: "*Well, my presentations are on the long side, and the things on my list don't seem to change the team's management plan, which has been frustrating.*"

You: "*It does seem that while you've been discussing a lot of unusual diseases, your presentations haven't fit into the timing goal for the clerkship of 15 minutes per new patient. Tell me more about your frustration with the management plans for your patients.*"

Brook: "*Like Mr. X, I really thought we should send metanephrines but the resident pretty much ignored me. I feel like she isn't taking me seriously and my patients aren't really my patients.*"

You: "*So I'm hearing that you're feeling that you're not being heard, and your sense of ownership over your patients' management is suffering—that can definitely be one of the hard things about being a 3rd year. Do you have a sense of why the resident might not be taking your suggestions?*"

Brook: "*I don't know. She kind of just laughs me off sometimes.*"

You: "*That sounds frustrating.*"

Brook: "*It is—I'm just trying to contribute, and I feel like no one is listening to me.*"

You: "*I'm glad you're bringing this up—is this what you meant by wanting to talk about your role on the team?*"

Brook: "*Yes.*"

You: "*Well, let's try to think a little bit about why this might be happening. Sometimes it's helpful to think about things from the resident's perspective. What do you think her goals for the patients are?*"

Brook: "*She is usually focused on the treatment plan, I think.*"

You: "*And, how do you feel your differential diagnosis fits into her focus on treatment?*"

Brook: "*Well, I guess I don't usually think about treatment as much because I'm really interested in thinking about all of the different things they could have.*"

You: "*I think you're hitting on something really important here, and it's something medical students often struggle with. While the differential is fascinating and definitely important to think about, the goal of the presentation is to take all of the thought you've put into the differential and condense it down to what you think is most likely and why. Then, to best utilize the team's limited time on rounds, it's critical to state a succinct plan before the team leaves the bedside. How do you think you might combine your interest in a broad differential with the team's need to know what is most likely in each particular case?*"

(continued)

(continued)

Brook: "*Well, I guess I could look through my list and organize it a bit more, and I could probably take out the things that seem very unlikely.*"

You: "*I think that would be a great goal for your next presentation. How do you think you can go about choosing which diagnosis on your list seem to fit best with the patient?*"

Brook: "*I'm not sure. A lot of times the list just seems so long that without testing for different things, I can't be sure.*"

You: "*The skill you're identifying is crucial to moving from textbook knowledge to clinical reasoning, and I think will be critical to helping you to be successful on this rotation and beyond. Let's think of a way to practice this before your next formal presentation.*"

Brook: "*It would help to go over my presentation more before I give it on rounds I think, but I don't feel comfortable asking the resident, and the interns seem really busy.*"

You: "*I am very committed to helping you work on this skill. Why don't you and I spend some time on the next call day discussing your differential and thinking through how you might organize it? You can page me after you get your first patient and have had time to work on your note a bit. How does that sound?*"

Brook: "*I think that would help.*"

You: "*OK, I think we've talked about a lot of issues today. Let's make a plan to meet after your next formal presentation to debrief and talk about what our next steps will be and where things stand for you on the rotation. Can you summarize for me what you're going to take away from our talk today?*"

Brook: "*Well, it seems like while I do have a good amount of knowledge about the different diagnosis my patients could have, I need to work on narrowing and organizing*

my list. We're going to meet before my next formal presentation to practice this, and then we'll meet on the post-call day to talk about how it went."

You: "*Sounds great. I know it can be hard to talk about areas where we are struggling, and it sounds like you've been feeling a lot of tension around not being heard on the team, so I really appreciate your openness to talking through this with me today. I think you may find that if we are able to work on matching your presentations a bit more with the goals of the team, you will also feel more heard. Is there anything I can do to help with the team dynamics?*"

Brook: "*I don't think so. Let's try this first.*"

You: "*OK, I'm looking forward to working on this together.*"

References

1. Branch Jr WT, Paranjape A. Feedback and reflection: teaching methods for clinical settings. Acad Med. 2002;77(12 Pt 1):1185–8. PMID: 12480619.
2. van de Ridder JMM, Stokking KM, McGaghie WC, ten Cate OTJ. What is feedback in clinical education? Med Educ. 2008;42(2):189–97. doi:10.1111/j.1365-2923.2007.02973.x.
3. Bienstock JL, Katz NT, Cox SM, Hueppchen N, Erickson S, Puscheck EE. To the point: medical education reviews—providing feedback. Am J Obstet Gynecol. 2007;196(6):508–13. PMID: 17547874.
4. Bertakis KD, Roter D, Putnam SM. The relationship of physician medical interview style to patient satisfaction. J Fam Pract. 1991;32(2):175–81. PMID: 1990046.
5. Kogan JR, Conforti LN, Bernabeo EC, Durning SJ, Hauer KE, Holmboe ES. Faculty staff perceptions of feedback to residents after direct observation of clinical skills. Med Educ. 2012;46(2):201–15. doi:10.1111/j.1365-2923.2011.04137.x.
6. Ende J. Feedback in medical education. JAMA. 1983;250(6):777–81. PMID: 6876333.
7. Eva KW, Armson H, Holmboe E, Lockyer J, Loney E, Mann K, Sargeant J. Factors influencing responsiveness to feedback: on the interplay between fear, confidence, and reasoning processes.

Adv Health Sci Educ. 2012;17(1):15–26. PMID: 21468778.

8. Watling C, Driessen E, van der Vleuten CPM, Vanstone M, Lingard L. Beyond individualism: professional culture and its influence on feedback. Med Educ. 2013;47(6):585–94. doi:10.1111/medu.12150.

9. Milan FB, Parish SJ, Reichgott MJ. A model for educational feedback based on clinical communication skills strategies: beyond the "feedback sandwich". Teach Learn Med. 2006;18(1):42–7. PMID: 16354139.

10. Clark W, Hewson M, Fry M, Shorey J, Egener B. Three function model tri-fold cards. McLean, VA: American Academy of Physician and Patient; 1998.

11. Moss HA, Derman PB, Clement RC. Medical student perspective: working toward specific and actionable clinical clerkship feedback. Med Teach. 2012;34(8):665–7. doi:10.3109/0142159X.2012.687849.

12. Archer JC. State of the science in health professional education: effective feedback. Med Educ. 2010; 44(1):101–8. doi:10.1111/j.1365-2923.2009.03546.x.

A Five Step Model of Appreciative Coaching: A Positive Process for Remediation

Maysel Kemp White and Peter Barnett

"Individuals are mysteries to be appreciated. We do not need to see our client as problems to be solved or as deficient in some way. Our job is not to fix them. Our job is to partner with them in a positive, generative approach in which they are the agents of their own change." [1]

Abstract

Appreciative inquiry is a collaborative approach to generating solutions that identify and enhance what works instead of focusing on barriers and pitfalls. This method can optimize individual, economic, and organizational performance. Helping struggling students, residents, or colleagues by intentionally focusing on strengths has the potential to create a coaching relationship, which facilitates lasting change in behavior. The authors share their extensive experience as remediation coaches for medical learners at all levels, describe the psychological foundations of appreciative inquiry (self-actualizing, congruence, unconditional positive regard), and discuss the coaching context, roles, and process. They recommend ways to assess the culture of the organization and lay out the conceptual theoretical foundation of appreciative inquiry. Taking us through a stepped approach to remediation coaching based on five (constructivist, positive, simultaneity, poetic, and anticipatory) principles, they share practical advice and easily implemented tools to assist those who need to take on the remediation coach role.

16.1 Introduction and Overview

Coaching is the process by which one individual, the coach, creates an enabling relationship with the other that makes it easier to learn…This process occurs in such a way that it creates stronger people who have greater appreciation for

themselves and their capacity to couple their personal competence with effort and produce good results [2].

We have found that coaching using the appreciative inquiry model is a highly effective tool for remediation of learners at all levels, including full professors threatened with employment termination [1, 3]. Appreciative inquiry is a collaborative approach to generating solutions that identify and enhance what works instead of focusing on barriers and pitfalls. Research in several different disciplines shows that this method can optimize individual, economic, and

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organizational performance [3, 12, 13] and typically leads to an inspirational, exciting, self-fulfilling, and nonjudgmental discussion. Although we focus on appreciative coaching in this chapter, there are parallels with motivational interviewing as a model for behavior change [4]. These two models share an explicit Rogerian conviction [5] that the client (in this chapter, we will call the person undergoing remediation the "client," regardless of training level or who is paying for the coaching process) already holds the beliefs and possesses the skills needed to achieve the desired behavioral goal. In addition, the coach's empathic, nonjudgmental stance minimizes resistance and engages the client more quickly in identifying discrete and achievable steps toward success. Here, we will address key concepts, principles, and practical steps of this model.

16.2 The Coaching Context

Most physicians, whether in training or practice, perceive a referral to remediation as embarrassing and humiliating; consequently, few begin as willing and highly engaged participants. Initially, they may appear frightened, indifferent, resistant, or angry [6]. The first challenge of the coach is to build relationship, establish psychological safety, build trust, and help the client reframe the referral as an opportunity to thrive and succeed.

A number of foundational psychological ideas guide effective remediation coaching. First, Maslow [7] proposed the *self-actualizing principle*, which theorizes that individuals possess an innate drive to survive; once basic physical and emotional needs are met, the individual has a similarly strong drive toward excellence and creativity. It is common for physicians or physicians-in-training to have poor self-care practices, having inadequate sleep, eating unhealthily, eschewing exercise, not attending to developing and maintaining adequate emotional supports, or any or all of the above (see Chaps. 11 and 12). Therefore, guided by Maslow's principle, the coach must ensure that these basic needs are addressed so that the client can muster the energy and motivation to improve.

Second, Argyris and Schon [8] described the struggle for *congruence* between what we believe and how we behave. Most physicians espouse highly professional values and beliefs. Guided by this principle, the coach helps the client identify core beliefs, and then they work together to align behaviors with these positive beliefs.

Third, Rogers proposed that in the most effective dyadic therapeutic relationships, the facilitator strives to achieve "*unconditional positive regard*" for the client [5]. This is not easy; successful remediation requires that everyone, including administrator, coach, and client, present a nonjudgmental stance toward the client as a person while focusing attention on addressing the client's unacceptable behavior, about which the coach may feel quite judgmental (see also Chap. 19).

16.3 The Coaching Process

16.3.1 Coaching Roles

Keller describes two important dimensions of coaching: relationship and goals [9]. The relationship of the client with other individuals on the remediation team will vary from intimately close (knowing the values and perspectives of the client) to distant (no relationship or knowledge of the person beyond role) [9, 10]. Goals for remediation range from individual (promotion of the client's success to achieve an ideal future state) to organizational (identification of underperforming individuals to achieve institutional norms, avoid failure and complaints, etc.). Taken together, proximity of relationship and orientation of coaching goals define four distinguishable coaching roles, each having a different impact on the client (Fig. 16.1). In remediation, the referring person (for example, a course director, program director, or chair) usually has competing responsibilities, ranging from promoting individual success to assuring overall quality of performance in patient care; relationship building for this referring person therefore may not take precedence, threatening the psychological safety of the client. Ideally, there should be a

Goals for Coaching

Fig. 16.1 Coaching roles of members of the remediation team

coach on the team who has the luxury of both building an intimate relationship and inhabiting a purely success-oriented role.

16.3.2 Coaching Process Overview

A coach in this appreciative process typically proceeds as follows:

1. Meeting (or having a series of meetings) with the referring person and other members of the remediation team to discuss: engagement, history, ground rules, budget, outcome identification and management, relapse planning, timeline, existing options for modes of training (e.g., simulation training, online resources, shadowing, etc.), and consequences of success and failure. Initially the referring person may not be aware of the complexity of an individual case, and their commitment may vary over time.
2. Meeting (or having a series of meetings) with the client for orientation and observation, focusing on building relationship by assessing strengths and negotiating a remediation plan.
3. Implementing a plan.
4. Debriefing with the client: these sessions may be separate from practice sessions, particularly if dealing with substantial issues of denial, anger, shame, or if there are cultural issues which warrant separate discussion.

5. Setting up and observing more practice sessions, possibly changing the mode of training (simulations, real-time observations, etc.).
6. Following up with the referring person, as necessary.
7. Undergoing iterative cycles of practice, debrief, and follow-up with client and referring person, as necessary.
8. Closing the coaching process, including developing a relapse plan.

16.3.3 The Referral: Assessing the Organizational Context

Organizational structure and culture strongly influence eventual success of the client–coach relationship [9–11]. An organizational culture where individual and collective success is consistently celebrated is more conducive to effective remediation than one that focuses on punishment for failure. For practicing physicians, quality improvement departments in many institutions regularly collect data on patient experiences of care and other clinical outcomes. Some systems may use these data to link individual and institutional reimbursement to performance. Systems that value effective delivery of feedback and ongoing review and negotiation (or at least advance discussion) of performance goals [10–12]

are more likely to lead to successful work between the coach and client. The coach must continually seek to understand the varying perspectives on organizational culture in conversations with the referring person and the client; at the same time, the coach must carefully assess the personality and objectivity of the individuals involved before drawing conclusions about organizational culture.

To explore how you might come to understand the organizational context, imagine you have been asked by the Department Chair to remediate a practicing physician. You are having an initial meeting with the Chair. Consider how you would proceed in each of the following three situations.

Situation 1

> **Chair**: *"Just let me know if he doesn't perform and I'll fire him."*
> **Coach**: ......

Situation 2

> **Chair**: *"I know I shouldn't talk; I know I can be pretty abrupt myself, but in this case I really do need to insist he get his act together."*
> **Coach**: .....

Situation 3

> **Chair**: *"I work hard to model and support professional behavior, maintain a high quality collegial department, and I hope I at least sometimes succeed. What can I do to support your work with Dr. X?"*
> **Coach**: .....

Key Questions to Explore with the Referring Person

- How have the needs and goals for and process of remediation been negotiated between the chair or program/course director and the client?
- How has feedback been presented to client previously? Narrative? Data? Direct or indirect? As part of dialogue or diatribe? Or not at all?
- What attempts have been made to work with the client to date? What has been successful? What has not?
- How will success or failure be determined? What is the time frame? What will be the consequences of failure and of success?

Now consider what information you glean about the organizational culture from the following answers when you ask: "What kind of feedback do your staff receive on a regular basis?"

> **Chair 1:** *"Oh we just send them the HCAHPS data for what its worth. Frankly, we have more important issues to deal with."*
> **Or**
> **Chair 2:** *"I try to go over our group's performance with the department as a group, deal with their concerns about the data, and then meet separately with the individuals who seem to have the most opportunity for improvement…"*

Getting as full a picture as you can of the resources, sources of support, attitudes of leadership, and feedback processes is critical to working effectively with the client.

16.3.4 The Initial Meeting with the Client

Ideally, supervisors will have explicitly articulated behavioral norms, reviewed and negotiated performance goals, set the expectation for client self-assessment, and delivered feedback before involving a coach. By the time of the initial meeting with the coach, hopefully the client will already have had discussed, reflected upon, and perhaps even practiced means of improvement. Unfortunately, this desired scenario is not always the case.

Consider how you would respond in the following three scenarios.

Scenario 1

Coach: *"What do you know about how we came to be here together?"*
Client: *"What do you mean? The chair just told me to show up and talk with you. I haven't heard any complaints."*

Scenario 2

Coach: *"What do you know about how we came to be here together?"*
Client: *"I guess I'm in trouble again, but I really don't understand what they're talking about, much less how to be 'a better communicator'."*

Scenario 3

Coach: *"What do you know about how we came to be here together?"*
Client: *"You know, this isn't news to me. I've gotten feedback about my communication off and on over the years, been sent to some courses, and I've actually tried some stuff to improve."*
Coach: *"For example?"*
Client *"Well, you know, like listening, trying to really understand what they're saying or feeling…"*

We hope it is clear that the coaching strategies you will employ will need to differ in each of these situations. While the strategies need to be tailored, deciding how to proceed should be guided by the following core principles.

16.4 Conceptual Foundation of Appreciative Inquiry

Ap-pre-ci-ate, v.
1. *To think well of, understand and enjoy; esteem.*
2. *To recognize and be grateful for.*
3. *To estimate the quality of worth of, esp. favorably. Synonyms: value, treasure, prize, esteem, cherish*

In-quire, v.
1. *To engage in the act of exploration and discovery.*
2. *To ask questions; to be open to seeing potential options and possibilities. Synonyms: discover, search, systematically explore, and study.*

Appreciative inquiry is a collaborative approach that identifies and enhances what gives life to optimal human and organizational performance [3, 12, 13]. We assume that medical professionals are motivated strongly by a belief in service to their patients and a commitment to developing and maintaining the skills necessary to do so. In the context of remediation, this approach honors and takes advantage of the professional's already existing motivation. Five principles of appreciative coaching guide this approach and are critical to understand before launching into the process.

16.4.1 Principle One: The Constructivist Principle

The constructivist philosophy posits that we create our own reality. If I see myself as a failure having been referred to remediation, I am likely

to behave as a failure, feel threatened, and become defensive. On the other hand, if I recognize my strengths and see the possibility of leveraging them, I may invest effort in my development. The goal is to help the client recognize, consciously or not, that she/he is constructing much of the reality she/he experiences.

> **Coach**: *So how did you decide to become a physician, and what strengths do you bring to the profession?*
> **Client**: *I love pathology. I am really interested in understanding pathologic process in detail, and I hope as a surgeon to be able to use this knowledge to intervene, especially in surgical oncology. Lots of people just give up on surgery in cancer patients, but I think it has the chance of being actually curative.*
> **Coach**: *You sound committed, curious, and really enthusiastic about a difficult field in medicine.*
> **Client**: *I really am.*

16.4.2 Principle Two: The Positive Principle

Positive reflections, actions, and connections influence and lead to positive change. If clients begin to see themselves as effective actors on their own behalf, they are well on their way to change.

> **Coach**: *How do things go for you when you are on your military reserve duty?*
> **Client**: *I don't have any problems. I am calm, confident, and polite, even when we have rough spots.*

16.4.3 Principle Three: The Simultaneity Principle

Inquiry and change happen simultaneously. "The questions we ask set the stage for what we find,

and what we discover becomes the linguistic material, the stories, out of which the future is conceived and constructed" [1]. Medicine is plagued by a negativity bias which suggests we are more attentive to negative aspects of our environment than the positive; this approach leads to burnout and dissatisfaction [14]. Helping clients intentionally focus on strengths and what is working will create a relationship between the client and the coach conducive to remediation.

> **Coach**: *I can imagine that balancing your research, teaching, and clinical practice, to say nothing of life, takes some creativity. How do you do it?*

16.4.4 Principle Four: The Poetic Principle

The poetic principle emphasizes the power of narrative [15]. Life stories can be rewritten, reframed, reimagined, and refocused on the future possibilities and achieving one's dreams.

> **Coach**: *I'm very curious about how you decided to change from a career as an artist to medicine at the age of 40. Could you tell me a little about it?*

16.4.5 Principle Five: The Anticipatory Principle

Finally, the anticipatory principle suggests we get what we hope for. Helping clients focus on their vision or dream enables them to take clearer action towards it. This is similar to the impact of affirmations.

> **Coach**: *How would you like to see this turn out? Specifically, how would you imagine yourself 3 years from now?*

16.5 The Five "D" Process: Appreciative Inquiry, Step by Step

Cooperrider [3] incorporated the five principles from Sect. 16.4 into the five "D" appreciative process, and we provide an overview of our interpretation of that process here (Fig. 16.2). These steps do not constitute a strictly linear sequence over time but can be flexibly incorporated and focused on the client's professional life and functioning. The ultimate goal is transformation of the client's behavior with the coach serving as a guide who provides a safe relationship, reminds the client of the possibilities, leverages strengths, and provides resources. Throughout the process, the coach has two key roles: developing a robust working relationship, and achieving desired results to promote the client's success.

> **Step 1:** Discover strengths: focus on existing talents that can be leveraged and developed into strengths.
> **Step 2:** Dream of the ideal future state: allowing the client to envision peak performance and maximal enjoyment of work.

(continued)

> **Step 3:** Design a provocative plan to achieve the ideal future state.
> **Step 4:** Develop systems and people to facilitate "flow."
> **Step 5:** Destiny: evaluating how well one was able to achieve the desired future state and how to sustain that change.

16.5.1 Step One: Discover Strengths

What gives life to our client's professional work?

The coach's focus during the first few sessions is to build rapport and relationship, guiding the client to a more empowering and positive perspective, with the goal of establishing or re-establishing their belief in their future.

16.5.1.1 Building Rapport and Relationship

One of our coaching goals is to create a clear parallel process between what we are modeling as coaches and how we expect our clients to interact with patients and colleagues. A fundamental task in any patient–clinician relationship is to build rapport with the patient. Similarly, here we first focus on building relationship. We do this by

A five step appreciative model of coaching
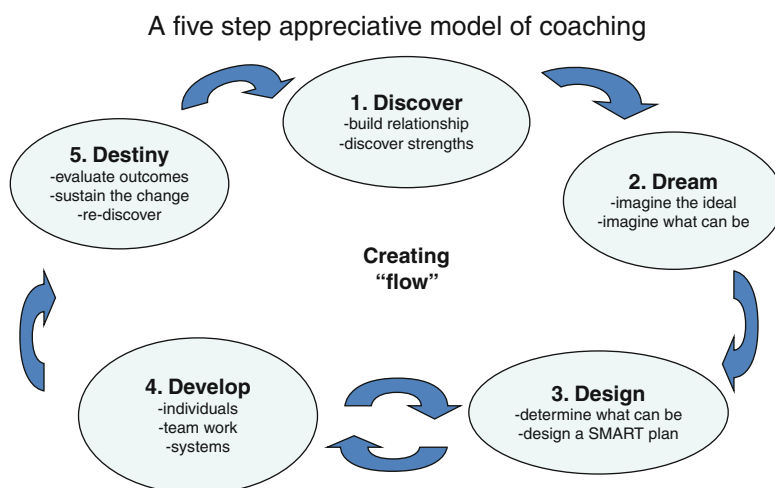
Fig. 16.2 The five "D" appreciative inquiry process for remediation. Adapted from Cooperrider [3] with permission from the author

exploring the client's strengths and sources of meaning in life. Tools we frequently use in this process are:

1. The **ARTS** of communication: **ASK** first about the client's perspective; after active listening, **RESPOND** with empathy; only then, **TEACH** your own perspective; and finally, **SHARE** decision making to achieve collaborative solutions (See box)
2. Using some of the **PEARLS** (**P**artnership, **E**mpathy, **A**ppreciation or **A**pology, **R**espect, **L**egitimation, **S**upport) during the response phase (See box)
3. Open-ended inquiry using four questions [1]:
   (a) What do you most value about yourself, your relationships with patients and colleagues, and the nature of your work?
   (b) Describe a high point or peak experience in your work up to now.
   (c) What one or two things do you want more of in your work life?
   (d) How about your private life? ("Repeating questions b and c above", adapting to the client's private life)

Tools to Build Relationship, Using the ARTS of Communication
Ask first and listen with OARS:
Open-ended inquiry
Active listening
Reflections
Short Summaries

Respond with empathy using PEARLS [16, 17]:
Partnership examples: *"I want to partner with you on overcoming these triggers that keep you from realizing your dream."*
Emotion: *"Sounds like you have excellent intentions and when they are consistent with your behavior you have great success in your interactions."*
Appreciation or apology: *"I can appreciate how much effort you put into your interactions."*

(continued)

"I am sorry you have to work so hard."
Respect: *"I respect your efforts at persisting given all the distractions you have."*
Legitimation: *"Anyone in your situation would be feeling stretched."*
Support autonomy: *"I am here to support you in achieving your dream."*

Only then: **Teach** about your perspective
Share decision making to achieve collaborative solutions

16.5.1.2 Identifying Strengths and Maintaining a Positive Perspective

We have used a formal assessment to identify a client's talents. The "Strengths Finder" tool, developed by Buckingham and Clifton in their research through Gallup, is based on over two million interviews around the world. They found that most organizations, managers, teachers, and individuals do not leverage the strengths they have. The world's best managers hold two key assumptions [18]:

(a) Each person's talents are enduring and unique
(b) Each person's greatest room for growth is in the areas of their greatest strengths

The tool is available by purchasing one of their books [19, 20] or through the website http://www.gallupstrengthscenter.com. In practice, many coaches use a less rigorous assessment of the client's assets.

16.5.1.3 Pivoting

As mentioned above, medicine has a culture of negativity that emphasizes what does not work. This is a logical consequence of the "problem"-oriented practice implicit in medical care. Analogous to reframing illness care into preventive medicine, a key skill for coaching described by Orem and colleagues is "pivoting," which is "the conscious act of turning attention from what the client does not want to what he wants" [1]. Often clients know that they don't want to "fail the OSCE" or that they are frustrated with "demanding families." The coach works to frame

these into what they *do* want: in the first case, clinical competence and confidence; in the second, perhaps "satisfying relationships," and a sense of mastery in facilitating conversations with patients and their families about their needs.

16.5.2 Step Two: Dream of the Ideal Future State

The dream stage builds on the inspiration from the first strength identification stage. Similar to the approach used for motivational interviewing [4], in this stage we draw heavily from the research on positive psychology [21], the power of positive thinking [22, 23], hypnotic use of words [24], metaphor [25–27], and the power of the Pygmalion effect [28]. The outcome of the Dream stage is to help the client create a clear vision of a positive future that stretches beyond the limits of their current comfort zone and level of performance.

> **Key Elements of a Vision [29]:**
> 1. Significant purpose
> 2. Clear values
> 3. Preferred picture of the future

Blanchard and Stoner define vision as "knowing who you are, where you are going, and what will guide your journey" [29]. The coach aims to help the client reflect on his proudest moments, core skills, and strengths and to leverage these into an accurately positive self-image. Sometimes we use a technique called "History of the Future" to help clients describe their picture of success by identifying their legacy: "imagine yourself at the peak of your career 3 years from now: what core skills and strengths are you using?" (See Appendices)

As an alternative, the client can be guided to envision himself in the shoes of a mentor he emulates, by posing the following questions:

Who do you most admire and/or are inspired by?
What do they do that impresses you?
Can you imagine yourself in their shoes? If so, what would you be doing?

Once the client has a clear vision of his desired future state, the coach affirms and legitimizes the dream and moves toward the next step of designing a collaborative plan.

16.5.3 Step Three: Design a Collaborative Plan to Achieve the Desired Future State

The third stage of Appreciative Coaching focuses on designing a plan to achieve the dream identified in step 2. This involves writing a concrete plan, affirming the client's reality, and supporting actions. To guide the writing of useful objectives, we like to use the SMART mnemonic:

> **SMART Objectives Are:**
> • **S**pecific
> • **M**otivating/**M**easurable
> • **A**chievable yet **A**ggressive
> • **R**elevant to organizational or practice goals
> • **T**imely

An example might look as follows:

> "By January (**Timely**), I would like to be able to use patient-centered skills in at least two-third of my patient encounters (**Measurable, Relevant**) by using the ARTS of communication: **a**sk first, **r**espond with empathy, **t**each about my perspective, then **s**hare decision making by seeking collaborative solutions (**Specific, Achievable**)."

We also encourage the coach to explore the BEARS (barriers to change, evidence of behavior change, specific actions to accomplish the dream and overcome barriers, resources needed for success, and strengths you can draw upon).

Please refer to the Appendices for further examples and worksheets using this approach.

These first three steps (Discover, Dream, Design) are critical to establish a therapeutic relationship and help the coach to demonstrate unconditional positive regard. Only after establishing a trusting relationship can the coaching proceed to practice, feedback, and success toward the dream.

Performance includes both

WHAT / CONTENT   HOW / PROCESS

What one has to   **How one**
• Do (duties &   • Completes duties
tasks)   • Applies knowledge
• Know   & experience
(knowledge &   • Gains knowledge &
experience)   experience
• Accomplish   • Achieves goals &
(goals &   objective
objectives)   • Deals with
                          challenges &
                          setbacks

Fig. 16.3 The elements of performance include both what we do and how we do it
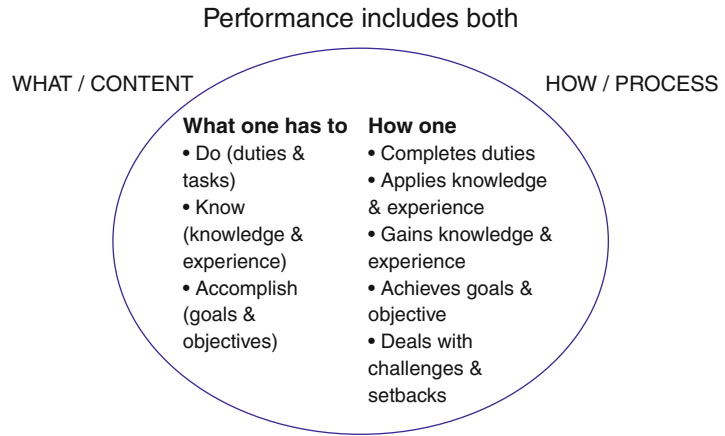
16.5.4 Step Four: Develop People and Systems

The Develop stage is one of experimentation addressing one's goals, mindful reflection, and feedback, where the client can fully engage in achieving his or her own potential. We often find that we have to go back and redesign the SMART objectives as we discover new strengths and opportunities to develop. In this stage, we depend highly on using empathic communication through PEARLS statements, diagnosing performance, and customizing interventions that consistently focus on facilitating the client's success of achieving his dream.

16.5.4.1 Continue Using Empathic Communication

Empathic communication is essential to support the client, especially when the going gets tough and when inevitable life challenges arise. We use the ARTS of communication discussed above to guide us in this step.

16.5.4.2 Diagnosing Performance and Tailoring Interventions

In this phase of Step 4, we reflect on what promotes and what inhibits the client from successful performance and "flow," a term coined by Csikszentmihalyi to describe total involvement and enjoyment in one's work [30].

"Flow as the sense of effortless action … occurs when a person's skills are fully involved in overcoming a challenge that is just about manageable … [you are] involved in something so deeply that nothing else matters, and you lose track of time." [30]

All performance includes two elements (see Fig. 16.3). The first element is the "what": duties, knowledge, and goals. The client articulated these in the dream phase. The second element is the process and consists of four "how" questions: how one completes duties; how one applies knowledge and experience; how one achieves goals and objectives; and how one deals with challenges and setback. In coaching, we typically focus more on the "how."

We have identified six elements or drivers that fuel the "how" and therefore the ability to get into "flow." Any one or more can have an effect on performance; the effective coach will tailor interventions to facilitate success.

Figure 16.4 is an expansion of Keller's "Star Model" [31] which we use to articulate the important factors in achieving flow. We start first with the forces out of the immediate control of the performer and then move to those driven by the individual.

The Environment: People and Systems
As discussed in the introduction, the environment or context in which one works sets a tone for
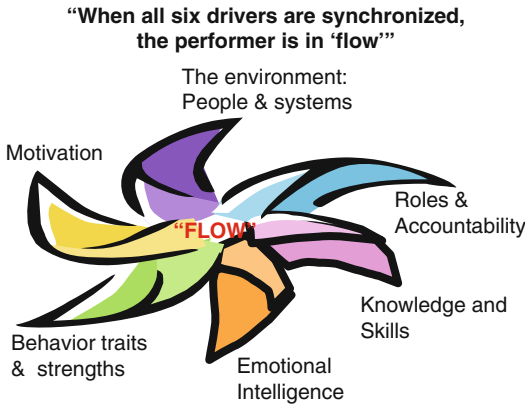
Fig. 16.4 Factors that influence flow. Expansion of Keller's star model [31]

performance. The Gallup engagement survey suggest the environment including both systems and people are both critical to performance and outcomes [19]. Buckingham and Coffman found affirmation of the following six statements is most reflective of employee engagement and most correlated to positive outcomes:

1. I know what is expected of me at work
2. I have the materials and equipment I need to do my work properly
3. At work, I have an opportunity to do what I do best every day
4. In the last 7 days, I have received recognition or praise for doing good work
5. My supervisor, or someone at work, seems to care about me as a person
6. There is someone at work who encourages my development

If the coach makes the assessment that the environment is blocking successful performance in achieving the desired future state, she can focus the client on managing those they report to, or if that fails, become an advocate for the client.

Roles and Accountability
A role is defined as an expected set of connected behaviors. In the last 10 years it has become clear in healthcare that there are three distinct roles a client must take on: diagnosis and treatment through clinical reasoning, patient-centered care through relationship building, and collaboration

as a team member. Most clients easily endorse the first role; some have struggled more with the last two. The coach needs to assess if the client fully endorses and embraces all three roles. We find that reviewing the client's perspectives on these three roles is a useful way to discuss issues of accountability to others. We are also quite aware that if behaviors are not inspected and reinforced, they will devolve over time.

Knowledge and Skills
When assessing the client's performance, we must know what knowledge and skills are required and whether the client possesses the ability to perform tasks consistently and on demand. If knowledge is lacking, we collaborate to provide the most appropriate resources to gain the knowledge (see Chap. 3). When skills are insufficient or inconsistent, we set up practice sessions with standardized patients or other simulations with video feedback (see Chaps. 4–6). We also observe clients as they make rounds or see outpatients. The objective is to help them recognize their strengths and the situations where their behavior is consistent with their dream and aligned with the organization's expectations. Again, simulations and live observations require enormous trust in the coach that one can take a risk of revealing unskilled behavior.

Emotional Intelligence
Goleman defines emotional intelligence as "the capacity for recognizing our own feelings and those of others, for motivating ourselves, for managing emotions well in ourselves and in our relationships" [32]. Figure 16.5 presents how the many aspects of emotional intelligence interact to lead to positive performance in the workplace.

There are a number of assessment instruments on the market that one can use to assess emotional intelligence. However, we believe it can be assessed by direct observation and interpersonal interactions with the client (see Chap. 10).

Facilitating self-awareness is a key aspect of coaching. While there are many strategies to accomplish this, we find that asking the individual
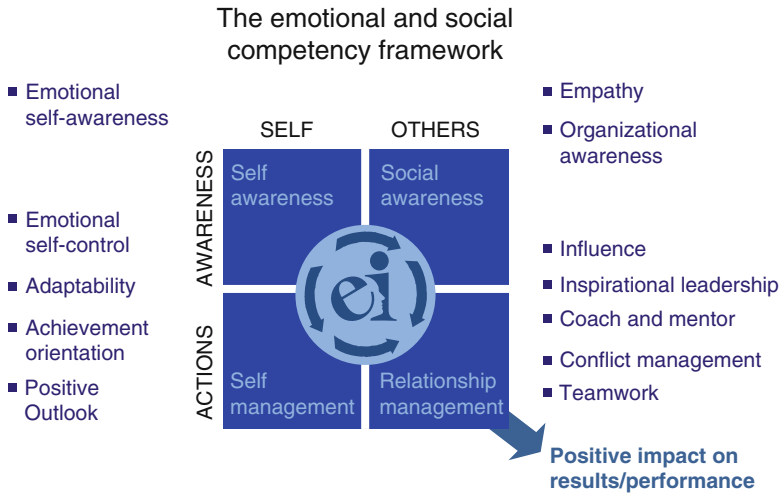
The emotional and social
competency framework

to draw and explain a three-generation genogram in order to identify the origins of both strengths and "hot button issues" is a very informative and efficient way to begin the discussion. We also focus on mindfulness practices [33, 34] to increase emotional intelligence and decrease burnout (see Chaps. 11, 13, 14).

Motivation to Perform All Roles

Motivation comes from a dynamic mix of conviction that it is important to change behavior and confidence in one's ability to do so [4, 35]. Most of us struggle with a variety of desired behavior changes, and our motivation varies with the specific challenge. Likewise, some degree of discrepancy between what is and what could be characterizes most people's motivation. The coach must help the client articulate his desire to change. This "change talk" [4] about the desired future state has been demonstrated to be a predictor of behavior change.

Traits and Strengths

Traits are fixed aspects of our personalities (for example, introversion or extroversion) that do

not change significantly over our lifetimes. As coaches, we try to leverage strengths to overcome any limitation created by traits. For example, a client working in the Emergency Department explained herself to be "painfully introverted" and not really interested in getting to know her patients. One of her strengths, as identified on the Strengths Finder™ assessment, was input. People with this strength are described as "having a craving to know more; often they like to collect and archive all kinds of information" [20]. Therefore, we reframed getting to know people as collecting unique information—this resonated with the client as something worth pursuing.

In summary, our diagnosis of the client's performance may identify issues in any one or more dimensions of performance. This formulation will help with determining and negotiating or renegotiating a shared plan to achieve the dream. It has been our experience that we often have to return to the beginning of step Four and redesign the plan after a few live observations and when the relationship has fully formed between the coach and client.

16.5.4.3 Concrete Steps: Setting Up Skills Practice, Simulations, Shadowing, and Debriefing

Observation and feedback involves four distinct steps.

1. **Pre-performance practice set up**
   Before shadowing or observing a skills practice session, it is helpful to specify what objectives are being targeted so as to focus feedback and negotiate exactly how the session will be conducted. Particularly in remediation situations, we try to make sure the first time-out (in a simulated session) highlights a strength or progress toward learning objective. This serves a dual purpose: delivering reinforcing feedback can highlight trust in the relationship and can emphasize that time-outs are not shameful interruptions for correction. In the case of live observation and shadowing, it is important to clarify how the coach will be introduced to the client and family, and when and how debriefs will be conducted. After this introduction, as coaches we try to avoid eye contact with the patient so as to encourage interaction with the client and not the coach.

2. **Performance**
   In this phase, we observe the client in practice on the wards or in clinic, on video, with a standardized patient, or in a role play.

   When observing under these circumstances, we take notes of specific behaviors we notice, and/or specific words spoken, so that the feedback stays behavioral in nature and focused on the dream (See Appendices for format).

3. **Debrief**
   We always start with the learner's self-assessment of success and strengths as displayed in the interaction. Most frequently, we again use the **ARTS** of communication:

   Ask with skilled open-ended inquiry: "*Tell me what you thought went effectively/ demonstrated your strengths.*" Elicit in detail the client's self-assessment, beginning with open-ended questions and filling in the gaps with questions referring to the specific performance goals negotiated in the preperformance setup.

   Respond with active listening and empathic (PEARLS) statements. Clarify and assure mutual understanding.

   Only then, **Teach** about your perspective. Eliciting the client's intentions can be helpful; the coach can highlight the difference between intention and behavior. Be sure the client understands what you have seen—the "teach-back" technique can be very helpful here. Discuss differences in perception. [See Chap. 15 for further detail.]

4. **Next Steps**
   Seek collaborative solutions and plan for the next encounter to continue progress toward the dreamed future state.

16.5.5 Step Five: Destiny—The State of Being and Embracing It

In this step, clients begin telling themselves new stories about their performance and potential, and new behaviors become habits. The coach's role is to amplify the successes. The coach helps the client recall where he was at the beginning and see the steps taken and dreams realized. Orem and colleagues [1] suggest that Destiny involves focus on four tasks: helping the client realize the dream in the present and celebrate; enabling the client to expand his capacity to create his dream; supporting the client in holding faith when the going gets tough and relapse may occur [36]; and saying *namaste* (a traditional Indian salutation) when coaching comes to a close.

16.6 Summary

In this chapter we have presented an approach to coaching based on appreciative inquiry. The central premise is that medical professionals at all levels of training and practice possess positive ideas about professional behavior and many of the skills necessary to implement them. The role of the coach is to develop a supporting relationship with the client in their efforts to develop attitudes, knowledge, and skills to achieve performance at a higher level.

A critical aspect of all coaching is that it occurs in a social and organizational context. As such, the coach optimally engages the referring person in dialogue that mirrors that of the coaching relationship itself: eliciting and optimizing the organization's beliefs and skills at supporting its members. Although communication and professionalism behaviors do not easily lend themselves to precise quantitative assessment, we encourage the coach and organization to identify realistic SMART objectives to guide the coaching process.

Coaching requires the flexible and intentional application of principles and attitudes as well as concrete behaviors. Because of the vulnerable position most remediation clients are in, the coach must elicit and acknowledge the client's feelings, often ranging from apparent indifference to anger to overt shame and dismay, along with the more specific behavioral objectives of the coaching relationship.

Finally, the appreciative inquiry approach to coaching is similar in many ways to relationship-centered patient care. We strive to accept patient and client nonjudgmentally, search for positive, health promoting behaviors, and realistic approaches to achieving them. The patient and client are full collaborative partners in the process, and the success of the coach and client are fully dependent on the success of our relationship with patient and client.

Appendix A: Pre-coaching Appreciative Assessment

Coaching Questions: *These are natural opportunities for reflection and empathic inquiry throughout the coaching process. They can be provided to the client prior to the initiation of the relationship, later, or both. The key is to use them intentionally, flexibly, and to be sure both the coach and client understand the question, the response, and the relevance to the coaching dilemma or situation.*

1. **Your greatest accomplishments: List your three greatest accomplishments to date**
   - What made these stand out for you, what made you feel so proud?
   - How can you use what you've learned from your successes in the current situation?
2. **Your role models: Who are your role models or the people you aspire to be like?**
   - What attributes do you most admire and appreciate?
   - What attributes have you adopted?
3. **You, your relationships, your work**
   - What five adjectives best describe you?
   - What are the most positive aspects of your practice? Your life?
   - Five things you love to do, hate to stop doing, can't wait to do again—things that energize you
   - What do you love most about being in healthcare?
4. **Dream of the ideal future**
   - Imagine that a family member came to you and asked, "I'm looking for a new physician, what should I look for?" What would you say?
   - Over the years you have observed colleagues at work. When you observe an interaction that stands out in your mind for how good it was, what is it that you notice?
   - Focusing on your own patients for a minute, when it comes to their visits with you, what do you hope they will report to others about how you interview?
   - When a visit has ended that didn't go as well as you would have liked it to go, what do you usually think was missing?
   - Over the years, are there things that you have read about the medical interview or that teachers or colleagues have said to you that stand out in your mind as guiding principles? In our current media jargon these might be thought of as sound bites.

- During the course of his/her career a physician will conduct more than 100,000 clinical interviews. Focusing on your own beliefs about what is important in the interview, are there things that you try to do during every visit? What are they?
- Imagine that you were asked to give a lecture to third year medical students about medical interviewing just before they began their clerkships.
  - What would you emphasize to them?
  - What would be the three or four messages that you would focus on in your lecture as being critical to survival in the new healthcare environment?
- When you are with a patient and you feel stuck, who do you talk to about it: colleagues, family members, friends?
  - Imagine that we had these people seated at a table having a meal together and talking about your strengths with patients and colleagues. What would they be talking about?

What do you want your patients, their families, and your colleagues to say about you when they describe the kind of care you deliver?

As you consider your responses to the above questions, what would classify as the key attitudes, values, and skills needed to the physician of your dreams?	Which of these are strengths that you consistently use in your practice?	Which of these are areas you would like to develop further?
I promise	–	–
I promise	–	–
I promise	–	–
I promise	–	–
I promise	–	–

Appendix B: My Learning Objectives _____

Limit to four objectives in the role of diagnostician, relationship-centeredness, or team collaborator

SMART (specific and measurable, motivating, aggressive yet achievable, related to goals of the organization, timely) learning objective	Start date	Completion date

Barriers and obstacles	Evidence of accomplishment	Actions and behaviors you will take to overcome barriers	Resources needed for successful accomplishment	Strengths to draw upon
–	–	–	–	–

Appendix C: Feedback Format

Coach_____ Client _____ Date _____

Objectives for this skills practice:

1_____

2_____

The following behaviors are contributing to your clinical effectiveness. Please continue doing them.	For you to increase clinical effectiveness, you should consider beginning or doing more of the following:

References

1. Orem S, Binkert J, Clancy AL. Appreciative coaching: a positive process for change. San Francisco, CA: Jossey-Bass/Wiley; 2007. p. 245.
2. Mink OG, Owen KQ, Mink BP. Developing high-performance people: the art of coaching. Reading, MA: Addison-Wesley; 1993. p. 271.
3. Cooperrider DL, Whitney D. Appreciative inquiry: a positive revolution in change. San Francisco, CA: Berrett-Koehler; 2005. p. 86.
4. Miller WR, Rollnick S. Motivational interviewing: preparing people for change. 2nd ed. New York, NY: Guilford Press; 2002. p. 428.
5. Rogers CR. Client centered therapy. Boston, MA: Houghton-Mifflin; 1951. p. 560.
6. Meyers MF, Gabbard GO. The physician as patient: a clinical handbook for mental health professionals. Washington, DC: American Psychiatric Publishing; 2008. p. 242.
7. Maslow AH. Motivation and personality. 2nd ed. New York, NY: Harper & Row; 1970. p. 369.
8. Argyris C, Schon DA. Theory in practice: increasing professional effectiveness. San Francisco, CA: Jossey-Bass; 1974. p. 224.
9. Keller VF. Handbook for motivational interviewing trainers and coaches. Online monograph. 1983. http://vaughnkeller.webs.com/Handbook%20for%20Motivational%20Interviewing%20Trainers%20and%20Coaches.pdf
10. Gordon GH. Facilitating vs. coaching: a dialogue between Geoff Gordon and Vaughn Keller. Med Encount. 1998;14(1):4–6.
11. Platt FW, Gordon GH. Field guide to the difficult patient interview. 2nd ed. Philadelphia, PA: Lippincott, Williams, & Wilkins; 2004. p. 297.

12. Whitney DK, Trosten-Bloom A. The power of appreciative inquiry: a practical guide to positive change. San Francisco, CA: Berrett-Kohler; 2003. p. 266.
13. Watkins JM, Mohr BJ. Appreciative inquiry: change at the speed of imagination. San Francisco, CA: Jossey-Bass/Pfeiffer; 2001. p. 241.
14. Haizlip J, May N, Schorling J, Williams A, Plews-Ogan M. Perspective: the negativity bias, medical education, and the culture of academic medicine: why culture change is hard. Acad Med. 2012 Sep;87(9):1205–9. PMID: 22836850.
15. Charon R. What to do with stories: the sciences of narrative medicine. Can Fam Physician. 2007 Aug;53(8):1265–7. PMID: 17872831.
16. Clark W, Hewson M, Fry M, Shorey J, Egener B. Three function model tri-fold cards. McLean, VA: American Academy of Physician and Patient; 1998.
17. Milan FB, Parish SJ, Reichgott MJ. A model for educational feedback based on clinical communication skills strategies: beyond the "feedback sandwich". Teach Learn Med. 2006;18(1):42–7. PMID: 16354139.
18. Buckingham M, Coffman C. First, break all the rules: what the world's greatest managers do differently. New York, NY: Simon & Schuster; 1999. p. 271.
19. Buckingham M, Clifton DO. Now, discover your strengths. New York, NY: Free Press; 2001. p. 260.
20. Buckingham M. Go put your strengths to work: 6 powerful steps to achieve outstanding performance. New York, NY: Free Press; 2007. p. 270.
21. Biswas-Diener R, Dean B. Positive psychology coaching: putting the science of happiness to work for your clients. Hoboken, NJ: Wiley; 2007. p. 258.
22. Watzlawick P. The language of change: elements of therapeutic communication. New York, NY: WW Norton & Company; 1978. p. 172.

23. Watzlawick P, Weakland JH, Fisch R. Change: problems formation and problem resolution. New York, NY: WW Norton & Company; 1974. p. 172.

24. Ferrara KW. Therapeutic ways with words. New York, NY: Oxford University Press; 1994. p. 199.

25. Barker P. Using metaphors in psychotherapy. New York, NY: Brunner/Mazel Publications; 1985. p. 221.

26. Lankton CH, Lankton SR. Tales of enchantment: goal-oriented metaphors for adults and children in therapy. New York, NY: Brunner/Mazel; 1989. p. 412.

27. Lankton SR, Lankton CH. The answer within: a clinical framework of Ericksonian hypnotherapy. New York, NY: Brunner/Mazel; 1983. p. 368.

28. Rosenthal R, Jacobson L. Pygmalion in the classroom: teacher expectation and pupils' intellectual development. New York, NY: Holt, Rhinehart and Winston; 1968. p. 240.

29. Blanchard KH, Stoner JL. Full steam ahead!: unleash the power of vision in your work and your life. 2nd ed. San Francisco, CA: Berrett-Koehler; 2011. p. 193.

30. Csikszentmihalyi M. Flow: the psychology of optimal experience. New York, NY: Harper & Row; 1990. p. 303.

31. Keller VF. Star performance: health as a human performance. Online monograph. 1985. http://vaughn-keller.webs.com/Health%20as%20a%20Human%20Performance-2.pdf

32. Goleman D. Emotional intelligence. New York, NY: Bantam Books; 1995. p. 352.

33. Hölzel BK, Carmody J, Vangel M, Congleton C, Yerramsetti SM, Gard T, Lazar SW. Mindfulness practice leads to increases in regional brain gray matter density. Psychiatry Res. 2011 Jan 30;191(1):36–43. doi:10.1016/j.pscychresns.2010.08.006.

34. Beckman HB, Wendland M, Mooney C, Krasner MS, Quill TE, Suchman AL, Epstein RM. The impact of a program in mindful communication on primary care physicians. Acad Med. 2012 Jun;87(6):815–9. doi:10.1097/ACM.0b013e318253d3b2.

35. Keller VF, White M. Choices and changes: a new model for influencing patient health behavior. J Clin Outcomes Manag. 1997;4(6):33–6.

36. Marlatt GA, Gordon JR. Relapse prevention: maintenance strategies in the treatment of addictive behaviors. New York, NY: Guilford Press; 1985. p. 558.

Part IV

Systems Viewpoint

Preparing Program Directors to Address Unprofessional Behavior

17

Eve Caligor, Ze'ev Levin, and Emily Deringer

Abstract

All medical educators will inevitably need to manage challenging trainees. Even one "difficult" resident or medical student can wreak havoc on an educational environment. Program directors must manage this maelstrom and as a result tend to experience especially high levels of distress in relation to difficult trainees. Frustrated and resentful, they often feel "de-skilled" or ill-prepared to manage these unwelcome challenges. In this chapter, the authors provide a framework for understanding and working with this group of trainees and the problems they engender. The practical strategies that flow from this framework allow program leaders to develop realistic expectations and informed management approaches in relation to the predictable problems that arise in relation to difficult trainees. The authors further provide definitions of personality traits and personality disorders as a means of offering an explanation of how certain residents might pose problems in various aspects of training, and how to distinguish between those likely to do well with effective intervention and those likely to do poorly. Case vignettes illustrate examples of how maladaptive personality traits, across a range of severity, might manifest in a resident's behavior. Finally, the authors provide an outline for how to approach an intervention with a resident exhibiting problematic behavior, including recommendations for managing the difficult aspects of the experience for the program director, communicating effectively with the resident, collaborating with faculty, and supporting other trainees.

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Sample Case

You are worried about your colleague EM, the program director of the ophthalmology residency. This exceptionally well-liked, highly respected clinician and educator is always upbeat, warm, and friendly. Today she passed you in the hallway, lost in thought and looking disheveled, aggrieved, and harried. You catch up with her and ask her about what is going on. She explains that she is on her way to be "deposed" by the lawyer for a senior resident whom she has been trying to expel because of her role in two potential malpractice cases. In response to your empathic nod, she goes on:

"I really screwed up this time. I can usually handle the difficult ones! I give them a slap on the wrist followed by the 'we are all in this together' pep talk, and it usually works for the duration. This time I was so off-base. I am so embarrassed. My residents are angry with me, the faculty are angry with me…the Chair recommended I just 'buck up' and let the lawyers handle it."

Surprised to hear EM so despondent, you ask: "Do you really think this is your fault?"

"Well," she acknowledges, "SS was challenging from the beginning. On day 1, she lied about missing a required orientation session—claimed to have a family emergency. But I let it slide. I always give my residents the benefit of the doubt. Our residency is tough, and it takes time to adjust. I try not to 'pile on' for the first 3 or 4 months. But the complaints of unprofessional behavior, rudeness and tardiness have been coming in ever since from peers, faculty and staff, but no one wanted to write anything down. They wanted me to 'do something.' I did speak with SS on a

number of occasions but somehow we ended up commiserating about how tough residency can be, rather than discussing her behavior."

When you ask about how her colleagues are dealing with SS, she explains, "We have a small, busy faculty so I tend to manage the residents on my own."

17.1 Introduction

All medical educators will inevitably need to manage challenging trainees. Despite efforts to weed out problematic individuals during the medical school admissions process and residency selection, the prevalence of "problem residents" across specialties is estimated to be between 3.5 and 10 % [1–3]. Yet despite the predictable presence of challenging residents, it is our experience that program directors are often surprised that a trainee who lacks expected professionalism or communication skills could possibly have "gotten this far." As medical educators, we tend to experience the presence of these trainees as an unwelcome intrusion and find that their behavior stretches the limits of our expertise as clinical educators and mentors.

Even one "difficult" resident or medical student can wreak havoc on an educational environment. The individual's negative behavior reverberates throughout a training program, interfering with the education of other trainees, generating bad feeling among program directors, faculty, and trainees, and potentially adversely impacting patient care [4]. Program directors must manage this maelstrom and as a result tend to experience high levels of distress in relation to difficult trainees. Frustrated and resentful, they often feel "de-skilled" or ill-prepared to manage these unwelcomed challenges.

In this chapter, we provide a framework for understanding and working with this group of trainees and the problems that arise. The practical strategies that flow from this framework may

allow program leaders to develop realistic expectations and informed management approaches for these predictable problems, thereby reducing psychological strain and programmatic disruption. In our discussion, we focus primarily on residency training, where we have the most experience, and we believe that our perspective and approach is applicable at all levels of medical education.

Definition of the "Difficult" Trainee

The American Board of Internal Medicine defines the problem resident as "a learner who demonstrates problem behaviors significant enough to require intervention of program leadership, typically the program director or the chief resident" [5].

A "difficult trainee" typically presents with behavioral problems, defined by the American Medical Association as "personal conduct, whether verbal or physical, that negatively affects or potentially affects patient care including conduct that interferes with one's ability to work with members of a health care team" [6].

17.2 Personality, Personality Traits, and Personality Disorders

Having a working knowledge of personality, personality traits, and personality disorders is extraordinarily helpful in understanding difficult trainees and can make it easier to work with them. *Personality traits* are our habitual ways of behaving in and interacting with the world and include how we think about, feel about, and perceive ourselves and others. Our personality traits are stable over time and include things like openness and agreeableness. Our personality traits coalesce to form our *personality*. Healthy personalities are adaptive, flexible, and responsive to the cues from the world we live in. For example, individuals with healthy personalities are able to navigate new and challenging situations with relative ease, work and get along with a wide variety of people, and incorporate feedback (including informal feedback such as social cues) without becoming overly defensive. A *personality disorder* is present when patterns of behavior, thoughts, and feelings become rigid and inflexible and as a result are maladaptive. For example, an individual with personality rigidity might struggle to see things from others' points of view or might have difficulty interacting interpersonally in more than one characteristic style (e.g., someone who always needs to be "in charge" and who is unable to function productively to situations in which they are required to follow instructions).

Many trainees with personality disorders do fine in certain situations, but are unable to adapt when circumstances change; it is not uncommon for the stresses and demands of residency to uncover maladaptive styles that are not noticed in the learner while in medical school. Often these styles emerge only when, for example, the resident has to work closely with a difficult nurse, or negotiate a very demanding attending, or supervise a medical student who is anxious and afraid. Other trainees encounter difficulty only as they have increasing levels of autonomy and must rely on internal resources rather than external demands and constraints to guide their behavior.

To the degree that maladaptive personality traits may be fully revealed only after the student becomes a resident, efforts to screen out problem residents cannot be 100 % successful. To further complicate matters, even when problematic behaviors are noted in medical school, faculty are often reluctant to identify them or to call attention to them in written evaluations, instead hoping that problematic behaviors are transient and a function of the stresses of being a student; concerned faculty may go so far as to deceive themselves, anticipating that the trainee's next step in training will be the step in which these "problems" will resolve. Understanding that maladaptive personality traits are *by definition* a problem and that they are likely to remain stable over time makes identifying and addressing them early all the more important.

17.2.1 A Theoretical Framework: A Spectrum of Severity

Though they share common, descriptive features (outlined in Table 17.1), the group of

Table 17.1 Common characteristics of "difficult" trainees

Common characteristic	Example
• May be very smart and accomplished	• Seen as haughty or arrogant by others
• Have inconsistent relationships	• May be highly regarded or well-liked by some faculty and peers, equally disliked by others
• Not conscientious and at times irresponsible	• Doesn't consistently follow through or show up on time
• Tend to cover up problems or failings	• Misrepresent facts or lie in order to avoid blame or repercussions
• Don't communicate with program directors and attendings	• Don't respond to e-mails, calls, or texts
• Don't accept feedback	• Respond with blaming and externalizing
• Not team players	• Don't "carry their own weight" within the group
• Look out for themselves at the expense of patient care	• Fail to return patient-related phone calls after hours due to prioritizing personal commitments over patient care
• Appear self-serving	• Make requests for special treatment
• Problems with or hostility towards authority	• Argue with a supervisor who offers a different opinion or devalues a nurse in rounds when asked to do something
• Often have deficiencies in more than one core competency	

difficult residents presenting with deficiencies in Professionalism and Interpersonal and Communication Skills is heterogeneous. Unprofessional behavior can have many causes, and trainees with deficiencies in these competencies can be seen as existing across a spectrum of severity, reflecting the pervasiveness and persistence of problematic behaviors. Trainees at the least severe end of the spectrum are likely to respond to standard interventions; in contrast, those who present with more severe difficulties

are highly problematic, causing great distress and tremendous amounts of work for program directors. Understanding the unprofessional and maladaptive behaviors characteristic of difficult trainees and the problems that typically arise in their training enables us to distinguish between those likely to do well with effective intervention and those likely to do poorly. Such a framework has the advantage of making problematic behaviors more predictable and understandable and can enable us to deal with these residents more efficiently while making the process less emotionally taxing for all affected.

17.2.2 A Theoretical Framework: Relationships and Values

In our experience, unprofessional behavior that proves most severe and intractable in medical trainees reflects underlying deficiencies in two core domains of the trainee's psychological functioning: the understanding of the nature of relationships, and the system of internalized values. For a physician, professionalism rests on the capacity for "mature object relations," defined as the capacity to appreciate, care about, and respond to the needs of others, independent of the needs of the self. These capacities are core aspects of psychological health and endow the individual with empathy, compassion, and respect for the autonomy of others. Closely related to healthy relational functioning is the acquisition of a consistent, stable, and internalized set of values and ideals. These domains of functioning play a uniquely important role in medical professionalism and are of critical importance in medical training and practice.

Our society expects physicians to consistently demonstrate both concern for others and a sense of personal responsibility in our professional lives, yet our most difficult trainees are deficient in both of these domains. Instead of demonstrating a capacity for concern for others independent of the needs of the self, these individuals are self-interested, seeing relations with others in terms of "what I get out of it" (see also Chap. 7). And

Table 17.2 Behavior to consider when evaluating "difficult" trainees

Poor prognosis	Better prognosis
• Consistent lack of sense of responsibility and of concern about the implications of their actions for others; do not care how they are viewed except in terms of professional advancement	• Anxiety or upset in relation to deficiencies; even if weak internal sense of responsibility care about being well thought of
• Denial of responsibility without concern, always with an explanation of why someone else was responsible or at fault	• Defensiveness, even anger, but also ability to accept some responsibility or acknowledge a problem
• Consistent and persistent pattern of lying in a variety of settings, not just to cover up mistakes	• Using lies to cover specific errors
• Confusion on the part others about what "really happened" in relation to a specific incident; can lead to what appears to be lying; seems the resident genuinely has a different version of what happened and is not shaken even when confronted with evidence to the contrary	• Emotional response to confrontation ultimately leading to greater clarity of what transpired in relation to a specific incident
• Hostility and devaluation of authority, which may be veiled as long as residents get what they want; emerges full force when they're frustrated and may retaliate, often through political challenges or attempting to influence the group against the program director	• Chronic, rebelliousness, or open power struggles with authority that resident acknowledges when confronted
• Unable to receive feedback; experience it as an assault, feel they are being targeted, criticized unfairly, and that others are against them	• Difficulty receiving feedback, met with defensiveness and/or anger but with some capacity to see the feedback as reflecting on trainees' performance
• Consistently focused on gaming the system, getting something/as much as they can for themselves, openly, without conflict or concern	• Secretly trying to "get a good deal" or get out of something but embarrassed when confronted
• Expect special treatment without seeing it as such, and feel targeted when expectations are not met; may become enraged and paranoid	• Trying to get away with something and then feeling "caught"

instead of a capacity for conscientious behavior based on internalized values, these individuals do only what is made necessary by external monitoring or incentivized by external rewards. In our experience, individuals are unlikely to be remediable if their unprofessional behaviors reflect deficiencies in these core domains of psychological functioning, especially if they do not express or demonstrate shame or worry when confronted. Consistent with our experience, a recent survey of Emergency Medicine program directors found that 84.4 % identified "resident ownership that a problem exists" to be an important predictor of success for professionalism remediation [7]. In Table 17.2 we contrast behaviors characteristic of difficult trainees with behavioral indicators of trainees with a more positive prognosis.

17.2.3 A Theoretical Framework: Emotional Reactions and Questions of Reality

The most challenging and intractable among the "difficult" trainees, those who present with the kinds of behaviors listed in Table 17.1, share an uncanny ability to stir up very strong and extremely uncomfortable emotional reactions in others. Their impact on program directors, faculty, and other trainees can be profoundly disruptive, going well beyond the practical fallout of their behavior. Training directors may be left to manage trainees who are highly self-serving, manipulative, and capable of covert bullying and threat when crossed. Our experience is that these behaviors are equally prevalent in male and female trainees. While male trainees are more

likely to be overtly aggressive, both genders more typically display a covert form of aggression and bullying that can be far more disturbing and disruptive than open displays of aggression.)

The experience of trying to remediate such a trainee is often extremely unpleasant and painful. Reactions among training directors typically escalate from initial feelings of anger, disbelief, frustration, and contempt to those of outrage, helplessness, rage, and even fear when trainees express retaliatory or legal threats.

Difficult trainees also predictably elicit powerful reactions among their peers. While other trainees may initially feel protective, over time many within the group invariably become resentful and angry. Responses from faculty may be inconsistent, with some favorable impressions and warm and protective feelings, and some highly negatively charged views and evaluations. At the end of the day, both other trainees and faculty end up angry at or critical of the program directors, who are viewed as failing to effectively manage difficult residents and their negative impact on the training program and on patient care.

The presence of a very problematic trainee may be heralded by recurrent or vague complaints from faculty and residents. One may receive puzzling feedback or reports of problems that don't make sense or that are unusual. Alternatively, strong negative feelings arise in faculty and other residents around something that ordinarily would not be difficult—e.g., changing a scheduled call, or a resident's coming late. In such a setting, the difficult resident's shortcoming may be met with resentment, suspicion, or outrage, in contrast to normative reactions of empathy, anxiety, or irritation on the part of complaining faculty or residents. Of course, given that residency training is stressful for all trainees a single worrisome episode might not constitute a "red flag." It is a matter of severity and a pattern of behavior.

17.2.4 A Theoretical Framework: Intervene Early

Difficult residents typically present in the first year of training; while commonly there is a well-meaning inclination to give novices the benefit of the doubt or rationalize the behavior by ascribing it to transition stress or clinical immaturity, it is preferable instead to take action as early as possible [8]. Doing so requires that we override the common emotional inclination to avoid confrontation and delay, hoping that trainees will "settle in." By intervening early, we provide help for those most likely to respond and identify those likely to prone to exhibiting more serious problems within a program. Faculty members and other trainees, knowing that problems are identified and addressed, gain trust and confidence in program leadership and pride in their role within the program. These positive benefits hold true even if remediation details are kept confidential. Early identification also sets in motion the necessary processes of documentation and brings in the expertise afforded by the GME office. Figure 17.1 represents the recommended strategy for early intervention with difficult residents.

17.2.5 A Theoretical Framework: Conducting the First Meeting

The first meeting with the difficult resident to confront problematic behaviors is likely to be a "watershed" moment for identifying remediable trainees and establishing an effective supervisor-resident relationship. Such residents, when confronted with a failing, may initially be defensive and angry but eventually are able to acknowledge that the complaint is important and accept responsibility for their own piece of the problem as is demonstrated in Case 1 below.

In contrast, the residents in the most difficult, least remediable group seem not to hear the complaint, avoid discussion of the specifics of the episode in question, and do not appear to feel responsible for their own behavior. It is as if they simply do not trouble themselves with the training directors' and faculty's concerns, and instead externalize, blame, intellectualize, rationalize, and experience the problem as everyone else's fault. Even when confronted with specific facts and events, it is as if it doesn't register. Case 2 is an example of this type of response.

We may find ourselves sitting down with a resident to review a report of clear misconduct, only to
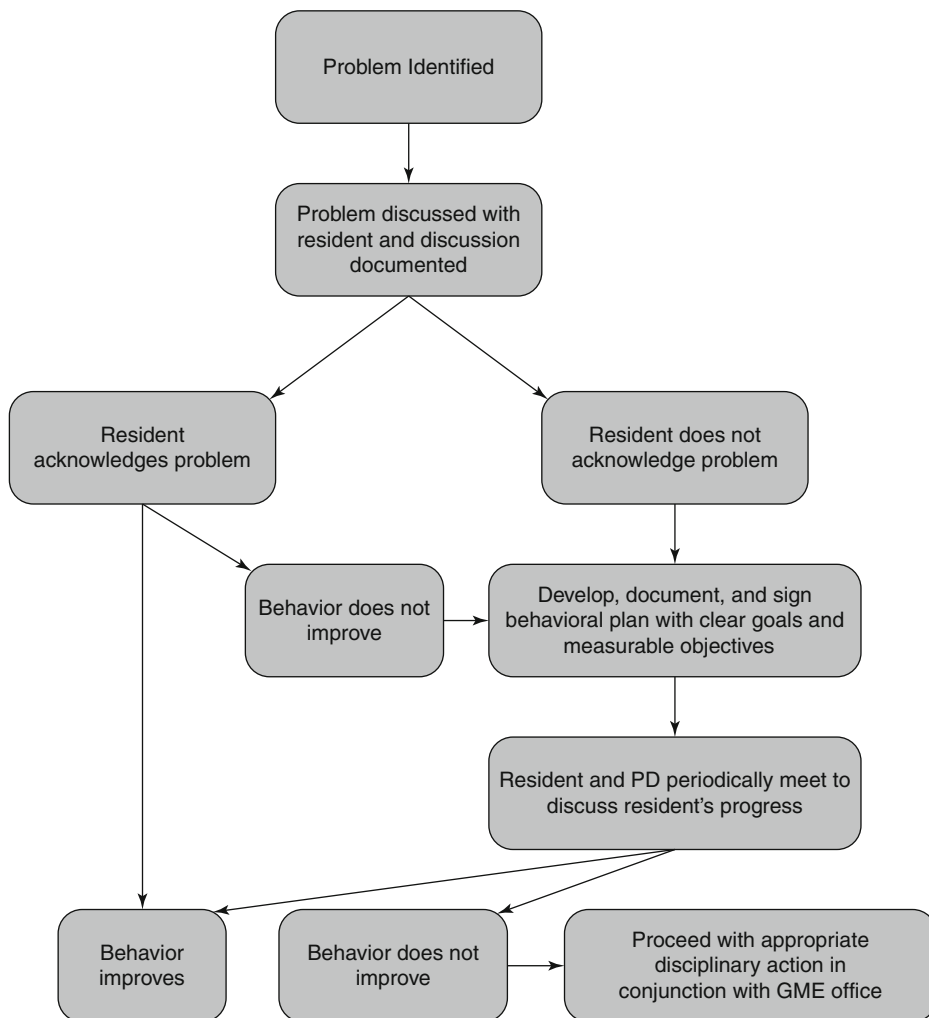
Fig. 17.1 The recommended strategy for early intervention with difficult residents includes clear and frequent communication and documentation of whether or not the resident acknowledges the problem and whether or not their behavior changes. This enables remediation and disciplinary action if indicated

become lost and confused in the face of the resident's bland and consistent denial of responsibility; one's initial conviction may melt away during the course of a meeting. In this setting, one may experience a strange sense of disorientation; it can become difficult to maintain any sense of clarity about what "really happened," what is "true," or even real. If we don't recognize this pattern early in the conversation, they tend to end unproductively as in the example below where the program director (PD) "takes the bait." Below, we illustrate a case with several different outcomes.

PD: *Thanks for meeting with us today, S. Dr. M (the associate program director or another faculty member) and I want to talk with you about what happened over the weekend, namely your not coming in for your scheduled call.*

S: *Let me explain.*

PD: *Hold on, give me a minute to go over the events as we understand them.*

S: *OK.*

PD: *We understand that you didn't show at 8:45 as is customary, and when the resident on call tried paging and texting you, there was no response. She then called the Chief, who tried to reach you as well, several times.*

S: *That isn't true. When I was…*

PD (interrupts): *Again, please give me a chance here. When the Chief did finally get hold of you, at around 10, you told him your alarm had failed to work, and that given how late it was, there was no point coming in.*

Case 1:

S (interrupts): *I did, because I felt terrible. I was totally humiliated and just wanted to get off the phone. I know that sounds crazy, but it was all I could do. I hung up and then was mortified at my response. I called the Chief back and apologized. I know (tearing up), my response was inexcusable, and that not coming in for call is a huge problem.*

PD: *This isn't the first time this problem has come up.*

S: *I know. That is what makes this all the more awful. I am not sure I understand it, but I am trying. I have started to see a therapist, and he assures me we will figure it out. Please, work with me.*

PD: *You know we want this to work, S, and will do all we can to help*

S: *And I am sorry I got defensive in here, telling you it wasn't true. I am devastated by my behavior. Please help me work on it.*

Case 2:

S (interrupts): *I did. There was no point coming in. By the time I would have gotten in, half the call would have been over. I do think they called the wrong cell number a few times because the only call I got was the one I answered.*

PD: *Are you suggesting that…*

S (interrupts): *I'm just saying that there weren't any missed calls or texts on my phone.*

PD: *This isn't the first time this problem has come up.*

S: *I am not sure why you refer to it as a problem. In my 3 years of training I have been late for three calls. I know it is an inconvenience, but I'm not sure it is a problem.*

PD: *S, even once is a problem. But I'm not sure how you can say it has only happened 3 times. This is our fifth meeting to discuss tardiness and lack of professional responsibility (refers to notes from prior meetings).*

S: *The other 2 times were around didactic attendance so I'm not sure why you are lumping these things together. I'm not the only one to come late for classes, but you seem to find fault with me and me only. I don't think you like me, and labeling this a "problem" just indicates to me that you have it in for me.*

Case 2A: "Taking the bait"

PD (angry): *This is a problem and you are a problem.*

S: *So now I am a problem too!*

PD: *Yes. You just don't seem to understand that these behaviors are unacceptable and must stop.*

S: *I just don't understand why I am being singled out.*

PD: *You are being singled out because you are the one with the problem.*

S: *This is just not fair!*

Case 2B: "Not taking the bait"

PD (calmly): *We are not here to focus on labels or whether you feel singled out. The issue at hand is your inability to come in for call, your not responding to pages, calls, and texts, your inability to interact professionally with your Chief, and that this comes on the heels of other discussions relating to unprofessional behavior on your part.*

(continued)

Tips: To avoid "taking the bait":

1. Always come prepared: notes from prior meetings, documentation from other faculty members, etc.
2. Always meet with a co-faculty member
3. Have the facts at hand
4. Stay focused on the behaviors ONLY
5. Stay calm!

17.2.6 Strategies for Management and Remediation: Managing Our Own Experience

Our emotional reactions to these trainees can range widely. Not only is there no need to feel like a failure because you did not detect problems prior to accepting a trainee into your program, but self-forgiveness will enhance your ability to manage difficult trainees and the fallout they generate. Often warnings do not appear in Dean's letters or letters of recommendation [1], and problems may not surface on interview. Additionally, it is important to anticipate that these trainees likely will arouse strong negative emotions. Having a structured approach, with protocols established ahead of time and a clear and specific response formulated before proceeding, can help achieve a sense of control. Consulting with a trusted mentor or colleague and adopting a team approach to difficult residents are two strategies to help program directors manage the strong feelings associated with such cases.

In this process, it is key to find allies and consult with others. Discussing residents with behavioral problems in Clinical Competence or Education Committee Meetings, getting support from our own supervisors (e.g. Vice Chair, Chair or Dean), and consulting the office of undergraduate or graduate medical education (UME or GME) are essential and protect the PD from feeling alone with the problem or making tactical mistakes [4, 8]. In addressing these residents, program directors should not act alone and should anticipate criticism or personal attack in the face of problems that emerge.

17.2.7 Strategies for Management and Remediation: Take a Team Approach and Prepare

Given the tendency shown by the most problematic trainees to slough off responsibility and distort reality, we recommend in these discussions that program directors avoid meeting with the resident alone, but always with another program director or faculty member present. It is also important to prepare thoroughly for the meeting, coming with documentation of problems, including written evaluations from faculty, 360° and peer evaluations, chart notes and patient complaints if relevant, and also bringing in relevant faculty. The focus of the meeting should be on a specific event and the resident's behavior. Avoid making an issue of the resident's motivation or intentions. Do not engage in discussion of whether or not the resident is responsible, but rather take the position that "people concur that you did this" and provide documentation and corroboration from third parties. As part of the meeting, institute a behavioral plan with the resident, identifying specific goals. Many residents who are confronted in this way will be able to engage in this process and comply with the plan. Those with more severe problems will not.

It would be ideal if we could keep difficult trainees from entering our training programs, but there will always be a few who get through, and this is true of all institutions, disciplines, and programs. Our ability to manage difficult trainees and the fallout they generate is greatly enhanced by understanding that - there is no need to feel that one has failed by not picking up problems prior to acceptance for training.

17.2.8 Strategies for Management and Remediation: Collaborate as a Faculty Group

It is the role of program director to support faculty who are working with a trainee causing problems. Meeting with involved faculty in a group setting is essential; such meetings enable

program directors to clarify what is going on, make sure that everyone understands, and address confusion within the group and disagreement among faculty. This forum also provides a venue for faculty to express their frustration and anger with the trainee, as well as with the program director for not taking care of the problem. In addition, these meetings are an ideal opportunity to impress upon faculty the importance of providing specific and accurate written evaluations that align with their verbal feedback. The tendency among faculty to share concerns verbally, while avoiding negative comments or realistic criticism in their evaluations [7], should be discussed, highlighting the difficulties created by such an approach; when the difficult trainee arrives at a meeting with the program directors, denying any culpability and with a pile of positive or neutral written evaluations in hand, the task becomes much more complicated. It is helpful in this setting to ask faculty to specify in all evaluations two or three things that the resident could be doing better. Anticipate that regardless of how skillfully a situation with a difficult trainee is addressed, it is likely that faculty will complain; some will be angry if you take action, seeing you as unfair or retaliatory, while others will be angry if the resident continues to cause difficulties [8].

17.2.9 Strategies for Management and Remediation: Support Other Trainees

When a difficult trainee is causing problems within a program, it is common for other trainees to assume that the program directors are blind to what is going on. Trainees may feel unsupported by the program directors or critical of their supposed ignorance. Because remediation is a confidential process, it may be difficult to speak directly or publicly to the issue with other trainees. We have found that one of the most effective ways to support the resident group is to go over peer evaluations in semi-annual reviews. Let residents know that peers can and do reliably call attention to problems with professional behavior

and teamwork; residents can be assured, in this setting, that if there is something going on within the program, the program directors will know about it. If a resident comes individually to complain about a particular trainee, you can acknowledge that you are aware of and addressing the problem without breaking confidentiality.

17.2.10 Strategies for Management and Remediation: Attend to Your Communication Style

When meeting with a difficult trainee, or when managing the faculty or resident group meetings, it is useful to attend to one's stance and tone, as well as the content of what is to be discussed. Demonstrating respect for the individual while addressing the unacceptable behavior clearly, directly and truthfully, without "beating around the bush," is optimal but may take some planning and practice (see box below). While it is preferable to be genuine in expressing your feelings (e.g. "I am very disappointed that this happened"), demonstrating anger through your tone or speech volume, though sometimes unavoidable, is generally less effective because it engenders defensiveness and raises the emotional "temperature" of the discussion. Communicating a measured attitude, an open mind, a willingness to listen, and a concern for all can go far and will establish a balanced and constructive tone for meetings with the difficult trainee. Conveying warmth, humor, forbearance, and an ability to maintain a view of the larger picture can be especially helpful to the group.

Opening the Conversation with the "Difficult" Trainee
Try to be empathic, tactful, clear, thoughtful, and even-tempered. For example, begin with a collaborative statement such as:
– *"Let's talk about why we're here"*
– *"How do you understand what has been happening?"*
– *"How can we together make sense of why we're here today?"*

Examples of opening statements that are likely to be counter-productive:

– *"Why are you always in trouble?"*
– *"What's wrong with you? Why don't you get it?"*
– *"I'm losing patience. You're days are numbered if you don't get your act together"*

17.2.11 Strategies for Management and Remediation: Document the Process

All institutions have policies regarding due process. Have copies of these on hand and be sure to review them with your trainees at least annually (referring them to the appropriate website is an easy way to do this). Be sure to review these with faculty as well, and stay in close contact with your UME or GME offices—they are invaluable resources. Be sure to document all "issues" with your problematic trainees, and keep documentation in a confidential folder in their portfolio. Include minutes from Education and Clinical Competence Committees, written evaluations from faculty, peers, nurses, and medical students. Verbal ("curbside") complaints or concerns raised by faculty about the trainee should be documented as well. The resident's folder should also contain notes written and dated by the program director documenting meetings with the at-risk resident. Make sure all entries include when and where, what the problem was, and who informed you or was spoken to about it (faculty, other trainees, etc.). Encourage faculty to put all their concerns on paper and to share this with the resident. This ensures there is no hearsay and that the trainee doesn't feel blindsided. If problematic behaviors continue after a couple of meetings with the trainee, it is best to proceed with a formal remediation plan. Continue to involve your colleagues in the UME or GME office and ensure the trainees that these plans are routine, nonpunitive, and non-reportable. Do all you can to have the

trainee understand that you want the plan to work and will do all you can to help. If remediation fails, despite your best efforts, proceed, with legal advice, to a more formal warning that could include suspension and ultimately termination [9] (see Chap. 20).

17.3 Conclusion and Research Agenda

Regardless of the setting, all of us involved in medical education and training find ourselves at some point struggling with challenging trainees deficient in professionalism and interpersonal and communication skills. Despite extensive experience with these trainees, there is much we don't know; there is a great need to collect systematic data about their presentation and course and to evaluate the effectiveness of our interventions. With this in mind, we are currently analyzing a data set of all remediation for professionalism at our institution over the past 10 years. Until we can learn more about who can be remediated and how best to proceed, we must rely on our communal experience and expertise. In this spirit, we have presented practical guidelines that we have found to be of help to all involved. We cannot necessarily change the outcome for all difficult residents, but we can change how we handle and feel about the process, and we can help and support involved faculty and other trainees. Dealing with "difficult" trainees, and managing their impact on our training programs and our profession, is a critical part of being a medical educator. Professionalism is a core value of the medical profession and an essential component of our contract with society. As educators in a self-regulating profession, it falls on our shoulders to address the challenges presented by the "difficult" trainee. Our ability to effectively do so has profound and long-term implications for individual programs, for medicine as a profession, and for society at large.

17.3.1 Faculty Development Objectives

1. Articulate a strategy for management of your own emotions while dealing with a frustrating, aggravating, or terrifying trainee.
2. Argue convincingly for the need to intervene early with problem residents.
3. Write a job description for members of your remediation team for problematic resident behaviors.
4. List the documentation needed in order to prepare to have a first discussion with a trainee who has had a serious lapse in professionalism.
5. Define a strategy to reduce the negative impact of unprofessional behavior on the whole training program.
6. Demonstrate the ability to have an effective initial conversation with a problem resident.
7. Write a memo, which adequately documents the remediation process.

17.3.2 Online Resources

In general, we found the greatest abundance of useful information on this topic in the recent print literature (see annotated references below). Readers interested in online resources might also find useful:

1. LIFE Curriculum (*L*earning to address *I*mpairment and *F*atigue to *E*nhance patient safety). The main link to this curriculum (http://www.lifecurriculum.info) is no longer active. However, the materials can be accessed through several universities' websites, ex: http://med.stanford.edu/gme/duke_life/index.html or http://www.partners.org/Graduate-Medical-Education/Curricular-Materials-And-Educational-Resources/Professionalism-Teaching-Materials.aspx
2. AAMC website (www.mededportal.org). This can be searched for online learning resources,

with keyword search "professionalism." This requires an AAMC log in.

References

1. Dupras DM, Edson RS, Halvorsen AJ, Hopkins Jr RH, McDonald FS. "Problem residents": prevalence, problems and remediation in the era of core competencies. Am J Med. 2012;125(4):421–5. doi:10.1016/j.amjmed.2011.12.008.
2. Tabby DS, Majeed MH, Schwartzman RJ. Problem neurology residents: a national survey. Neurology. 2011;76(24):2119–23. doi:10.1212/WNL.0b013e31821f4636.
3. Yao DC, Wright SM. National survey of internal medicine residency program directors regarding problem residents. JAMA. 2000;284(9):1099–104. PubMed PMID: 10974688.
4. Ratan RB, Pica AG, Berkowitz RL. A model for instituting a comprehensive program of remediation for at-risk residents. Obstet Gynecol. 2008;112(5):1155–9. doi:10.1097/AOG.0b013e31818a6d61.
5. American Board of Internal Medicine. IN: Materials from Association of Program Directors in Internal Medicine (APDIM)'s Chief Residents' Workshop on Problem Residents. New Orleans, LA; 19 April 1999.
6. American Medical Association, Council on Ethical and Judicial Affairs, Southern Illinois University at Carbondale, School of Medicine, Southern Illinois University at Carbondale, School of Law. AMA code of medical ethics: current opinions with annotations. 2006–2007 ed. Chicago, IL: AMA Press; 2006. Physicians with Disruptive Behavior 9.045.
7. Sullivan C, Murano T, Comes J, Smith JL, Katz ED. Emergency medicine directors' perceptions on professionalism: a council of emergency medicine residency directors survey. Acad Emerg Med. 2011;18(2):S97–103. doi:10.1111/j.1553-2712.2011.01186.x.
8. Katz ED, Dahms R, Sadosty AT, Stahmer SA, Goyal D; CORD-EM Remediation Task Force. Guiding principles for resident remediation: recommendations of the CORD remediation task force. Acad Emerg Med. 2010;17(Suppl 2):S95–103. doi:10.1111/j.1553-2712.2010.00881.x
9. Sanfey H, Darosa DA, Hickson GB, Williams B, Sudan R, Boehler ML, Klingensmith ME, Klamen D, Mellinger JD, Hebert JC, Richard KM, Roberts NK, Schwind CJ, Williams RG, Sachdeva AK, Dunnington GL. Pursuing professional accountability: an evidence-based approach to addressing residents with behavioral problems. Arch Surg. 2012;147(7):642–7. doi:10.1001/archsurg.2012.832.

The View from the Dean's Office

Lynn Buckvar-Keltz

Abstract

It is the role of a medical school student affairs dean to balance the responsibilities of advocating for students with upholding the integrity of the curricular program. This work is especially challenging when dealing with students who are struggling and require remediation. Given her diverse portfolio of responsibilities as dean for student affairs, which includes overseeing the academic progress of students, disciplinary process, mentoring and advising, student health and wellness programs, international health program, student life, and chairing of an executive committee for admissions, she is often the first one to identify and intervene with a struggling student. In addition to working with students and faculty to identify the underlying causes of a student's problem, the dean's office needs to be concerned about resource availability for and cost of remediation, legal and privacy issues, the implications of labeling students, the definition of the official written record, and final competency decisions. In this chapter, the author discusses the resources needed for remediation, their costs, and resources currently not available. This experienced student affairs dean shares her experience reviewing admission information, discusses preadmission factors that may portend the need for remedial assistance once in medical school, and offers NYU School of Medicine technical standards as an example. She discusses her approach to counseling students regarding how to communicate their remediation history to future training directors and employers. She thereby demonstrates how it is possible to balance the school's interests with obligations to students, faculty, and society.

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A Monday in the life of the dean for student affairs:

8:30 AM: Review the data on students to be discussed at the preclinical board meeting on Tuesday. I note that a student repeating the first academic year failed an exam last week, which will trigger a discussion regarding dismissal. I arrange to meet the student today to assess her recent difficulties.

9:00 AM: Email from second year student stating he has gastroenteritis and won't be able to sit for today's exam. This is the second time the student has asked to be excused from an exam due to illness.

10:00 AM: Phone call from an internal medicine clerkship teaching faculty member concerned that BD is "odd" and doesn't relate well to patients, nurses, and the clinical team. His peers seem to lose patience with him quickly, and the housestaff report he hasn't integrated into the clinical team after three weeks on the rotation. The attending observed BD interviewing a patient and found him to have difficulty developing rapport and eliciting the "narrative thread" of the patient's history. The attending does report that BD seems to be working hard and "has a good heart." I find out that nobody has given this feedback to BD verbally or in writing. I speculate that his performance may be in the failing range, and the attending immediately states, "Oh, I don't want to fail him. I just want you to be aware so you can do something for him." Then he asks, "Also, has he had problems like this in other clerkships?"

10:30 AM: Meet with a student requesting a letter of recommendation for a research fellowship.

11:30 AM: Email from a student requesting a housing change due to issues with her roommate.

1 PM: Meet with a student who just failed her second NBME shelf exam during her core clinical clerkships.

2:30 PM: Meet with a medical student who is concerned that her classmate "may be manic" but doesn't want me to let the friend know that she told me.

3 PM: Meet with student council president regarding current housing policies.

3:30 PM: I pull out the list of concerning students I wrote Sunday evening. I email two of the students to check in with them.

4 PM: Meet with a student applying in dermatology who is wondering if she "needs to do a research year."

4:15 PM: Finalize slides for town hall meeting on the residency application process.

4:30 PM: Faculty member stops by to express his concern that a student in his seminar group seems very anxious and worries about failing the upcoming exam.

5 PM: Review the neuropsychological report of a second year student sent by our consultant learning specialist (with the student's permission) that includes a new diagnosis of ADHD and recommendation for test accommodations.

5:15 PM: Run into a disciplinary committee faculty member, who asks, "what ever happened to the student that was accused of cheating and went before their committee but was not found guilty due to lack of evidence?" The faculty member implores me to announce at yearly orientation for new students that cheating is not allowed.

5:30 PM: Email from director of student health service informing me that two students have not complied with yearly PPD testing and asks me if I will be "pulling them off the wards" until they get it done.

5:45 PM: Email from student unhappy with his grade of high pass in the psychiatry clerkship because he feels his performance warrants an honors grade, especially because he stayed later than most of his classmates on the unit, volunteered to give an extra presen-

(continued)

(continued)

tation to his group, and was told that he did a great job by one of his attendings.

6:00 PM: *As I'm leaving the office, a student comes by and offers to walk with me because she "doesn't want to hold me up." During our discussion the student becomes tearful and expresses worry that she will fail another exam and doesn't belong in medical school. Upon questioning, she is isolated, withdrawn from classmates, has difficulty sleeping, and feels exhausted all the time.*

18.1   Introduction

It is the role of a medical school student affairs dean to balance the responsibilities of advocating for students with upholding the integrity of the curricular program. This work is especially challenging when working with students who are struggling and require remediation. Given my diverse portfolio of responsibilities as dean for student affairs, which includes overseeing academic progress of students, disciplinary processes, mentoring and advising, student health and wellness programs, international health program, student life, extracurricular activities, and chairing of an executive committee for admissions, I am often the first one to identify and intervene with a struggling student. In addition to working with students and faculty to identify the underlying causes of a student's problems, the dean's office needs to be concerned about resource availability for and cost of remediation, legal and privacy issues, and final competency decisions. In this chapter, I will discuss the issue of medical student remediation from preadmission until graduation through the lens of the school's interests and obligations to students, faculty, and society.

18.2   Admissions

Medical school admissions policy is the most important factor determining who becomes a physician. The first time faculty may question a

student's ability to succeed in medical school is when reviewing his or her application to medical school. Academic concerns arise when students have grade point averages and MCAT scores significantly below our mean for accepted students because studies have shown that these academic indicators correlate, albeit weakly, with learning foundational medical knowledge and USMLE Board scores [1]. Much attention is paid to an uneven academic record or fluctuating grades, as this may be a sign of lack of motivation, lack of interest, or emotional difficulties. Withdrawals from coursework, especially repeatedly, raise concerns. Additionally the record is scanned for certain patterns. Has the student been fully engaged in the extracurricular life at their undergraduate school? If not, why not? Is all of their nonclass time already devoted to studying, suggesting the student may not have "additional reserve" to handle medical school? A leave of absence may be another sign of some underlying difficulty. Indication of a disciplinary action is a concern. Unfortunately, the value of these application-based variables as predictors of success in medical school has not been well studied. However, studies have shown that unprofessional behavior of practicing physicians reported to state boards is correlated with a history of certain unprofessional behavior in medical school [2]. It is important for supporting materials such as a dean's letter (supplied by some undergraduate schools), the student's personal statement, or letters of recommendation explain any unevenness in performance without raising red flags. In order to assess nonacademic qualities of applicants such as ethical judgment, communication skills, and problem solving capabilities, some US schools have adopted McMaster University's model of multiple mini-interviews (MMI) with standard scenarios to be discussed by the applicant. The data thus far show that the MMI predicts success on national licensing examinations in Canada [3].

In the United States the competition for a spot in medical school is daunting—in 2011 the AAMC reported there were 43,919 applicants, 19,230 of whom matriculated to US medical schools. This is a 44 % acceptance rate for the

students "still standing" after grueling premedical coursework and the MCAT, both of which cull out lower performing students. This is intense competition even when compared with law school data: the law school admission council reported in 2011 there were 78,500 applicants with 45,600 matriculants, for a matriculation rate of 58 % [4].

The good news for these 19,230 students who matriculated to US medical schools is that they will most likely graduate with an M.D. degree. The AAMC followed three matriculating classes, 1987, 1992, and 1995, for 10 years and reports in their *Analysis in Brief* publication in 2007 that 96 % of students completed medical school within 10 years. This long time to completion was used to capture students enrolled in combined and dual degree programs. "Fewer than 2 % of all medical students across the three cohorts were reported as having left school for academic reasons" [5]. Thus, the admissions officers are more influential in determining who becomes a physician than those in the office of education. Given this, the question remains, are we giving our admissions officers the tools to make the most informed decisions?

18.3   Technical Standards

Occasionally an applicant will apply to medical school, but may not possess the functional ability to perform as a medical student. The Americans with Disabilities Act (ADA) protects citizens with disabilities from discrimination. The purpose of the ADA is to provide opportunities for persons with disabilities to compete with other applicants on the basis of their ability. The ADA requires medical schools to provide accommodations to disabled persons to enable them to access the benefits, services, and opportunities available to the nondisabled (see Chap. 9). Schools are expected to assess applicants on the basis of their ability to complete the educational program. This means that applicants must be able to perform the "essential functions" and meet the "essential eligibility requirements" of the program once provided with the appropriate accommodation. Each

school is free to determine the "essential functions" or "essential eligibility requirements" of its educational program. While schools cannot inquire about a disability prior to admission, they can seek information to ensure that an applicant can perform these essential functions [6]. In recent years many schools have developed *technical standards* to clarify and communicate those essential functions and eligibility requirements.

At NYUSOM we developed technical standards after reviewing the standards of approximately ten peer medical schools (see box) [7]. The technical standards at NYU reflect our mission of graduating students who can be practicing clinicians without the aid of intermediaries such as a person to conduct a physical exam for them.

NYU School of Medicine Technical Standards
Preamble:

All candidates for the Doctor of Medicine degree must possess the physical and mental skills and abilities necessary to successfully complete the NYU School of Medicine curriculum. To achieve the optimal educational experience, students are required to participate in all phases of our training program. The study of medicine is not a pure intellectual exercise; a specific set of minimum physical, mental, emotional and social abilities, as well as professionalism, are needed to be a successful student and physician.

To successfully complete our medical school curriculum students must possess all of the abilities listed in the following six categories. The use of an intermediary that would, in effect, require a student to rely on another individual's power of observation and/or communication skills will not be permitted.

The NYU School of Medicine will consider for admission any applicant who meets its academic and nonacademic criteria and who demonstrates the ability to

perform the skills listed in this document, with or without reasonable accommodations, consistent with the ADA and the Rehabilitation Act.

Behavioral and social attributes:
Candidates must
- Demonstrate the maturity and emotional stability required for full use of their intellectual abilities.
- Be capable of adapting to changing environments and possess flexibility in learning to function in the face of uncertainty.
- Be able to perform under physical, mental, and emotional stress.
- Exercise good judgment and have the ability to promptly complete patient care responsibilities.

Communication: *Candidates must*
- Be able to effectively, in both written and oral English, and efficiently speak, write, hear, read, and use technology to communicate with patients, families, and members of the healthcare team.
- Be able to identify nonverbal communication, such as changes in facial expression, posture, body language, mood, and activity.
- Be able to record information accurately and clearly.
- Communicate effectively in English with other healthcare professionals in a variety of patient settings.
- Be able to establish rapport with patients.

Ethics and professionalism: *Candidates must*
- Maintain ethical and moral behavior consistent with professional standards for interactions with students, faculty, staff, patients, and the public.
- Understand the legal and ethical aspects of the practice of medicine and function within both the law and ethical standards of the medical profession.

(continued)

Intellectual—conceptual, integrative, and quantitative abilities: *Candidates must*
- Have sufficient cognitive abilities to effectively learn, retrieve, assimilate, analyze, sequence, and organize complex details.
- Be able to adapt to multiple learning techniques and environments including, but not limited to, classroom instruction, small group instruction, team and collaborative activities, individual study, preparation and presentation of reports, self-assessment, peer review, and use of computer technology.

Motor: *Candidates must*
- Possess sufficient motor function to perform physical examinations and diagnostic maneuvers.
- Be able to respond to emergency situations in a timely manner and provide general and emergency care.
- Adhere to universal precaution measures and meet safety standards applicable to inpatient and outpatient settings and other clinical activities.

Observation: *Candidates must*
- Be able to observe required demonstrations and experiments including, but not limited to, anatomic dissection, microscopic studies, and patient demonstrations.
- Be able to use vision, hearing, and sensation to accurately observe a patient and assess findings.

18.4   Medical Student Privacy: The Family Educational Rights and Privacy Act

The Family Educational Rights and Privacy Act (FERPA) [8] (http://www.ed.gov/policy/gen/guid/fpco/ferpa/index.html) is a Federal law that

protects the privacy of student education records. The law applies to all schools that receive funds from the U.S. Department of Education. Under FERPA, schools must have written permission from the student in order to release any information from a student's education record and must remind students of their rights annually.

However, FERPA allows schools to disclose those records, without consent, in certain cases, including to school officials with legitimate educational interest. *These rules*, *as well as concern for students' privacy*, *discourage extensive discussion across certain boundaries regarding problematic students*. Interpretation of these rules varies widely from school to school.

18.5 Improve Admissions Policy and Practice: A Research Agenda

Medical schools vary in their approaches to "feed-back" information to admissions offices and committees regarding students' performance once in medical school. Schools run the gamut from having admissions deans on promotions committees to having no communication to the admissions office regarding student performance once a student matriculates. It is my opinion that the latter policy hampers the admissions committee's ability to continuously improve upon their evaluations of future applicants; on the other hand, it would be ideal if there were rigorous research data available to guide decisions. This would reduce the inevitable bias for or against certain student characteristics when making predictions based on the limited and unsystematic experience at one school.

I routinely review the medical school application file of each struggling student to look for evidence of previous academic or behavioral problems. This review may inform us as to the nature of the problem, whether it is a chronic or recurrent issue, and may guide selection of remediation strategies. In addition, I meet with the deans of admissions periodically to feed back relevant data including "red flags" in application materials. From time to time, the admissions

office will "take a chance" on an applicant with a subpar academic history because of a particular experience or talent that suggests promise to become an outstanding physician. In these cases, *it is not clear whether giving proactive support to the student is beneficial or not*. Labeling a student as at-risk for failure may seriously hamper their self-confidence and cause undue anxiety (see also Chap. 12). In addition, identifying students as at-risk may unconsciously bias the faculty. Some schools have elective academic support in advance of the start of medical school. For instance, the University of Texas Southwestern medical school offers the Summer Enrichment Program, a 6-week program for new first-year medical students to promote students' academic adjustment to their school.

18.6 Common Causes of Student Difficulties Across the Medical School Curriculum

There are many underlying reasons for a student to struggle while in medical school. The more common causes as viewed from my office, are discussed below.

18.6.1 Common Presenting Issues Arising in the Preclinical Curriculum

18.6.1.1 Weakness in Foundational Medical Knowledge

Apparent weakness in foundational knowledge is usually identified via poor performance on knowledge examinations and in small group discussions and comes to my attention within the first few months of school. Commonly, these struggling students were not undergraduate science majors and therefore relatively unprepared in this domain. Students may have difficulty acclimating to studying and taking medical school exams, as is sometimes seen with students who are accustomed to more conceptual testing, such as engineering majors or those who have taken time away from school between college

and medical school. Other students are less academically prepared in general (see Chap. 3). Students may also lack the appropriate knowledge base because they lack the motivation to study. These students often have difficulty articulating their reasons for wanting to become a physician and sometimes describe the pressure put upon them by parents and other family members. It is important to identify an unmotivated student, as the usual remediation resources will not help them. These students may appear to be sabotaging their own success (see also Chap. 12). Instead, serious reflection on the part of the student is necessary. Faculty and deans sometimes suggest clinical shadowing in an exciting area for the student as a way to remind them why they chose to attend medical school. Other times, a leave of absence to pursue other interests is helpful. Some of these students choose a different career path, which we view as a successful outcome for the student. Some students with weakness in foundational knowledge will benefit from a neuropsychological evaluation by a learning specialist to assess for an underlying undiagnosed learning disability (see also Chap. 9).

18.6.1.2 Psychological Distress
Some students become anxious regarding their academic performance in medical school, hindering their success. Because our medical students are exceedingly academically gifted, adjustment to being "average" in medical school is a challenge. Many of these students become disappointed and question their abilities. Support and encouragement is very helpful in this circumstance. Simply pointing out the obvious fact that 90 % of medical students cannot be in the top 10 % of their medical school class often helps students adjust their expectations. A pass/fail curriculum may lower the anxiety level for students.

Most medical schools preemptively encourage students to attend to their stress management and wellness and support this through formal and informal programing. Our student health psychiatrists have extensive experience with medical students and can be helpful with specific issues such as "test anxiety" (see Chap. 12). Our learning

specialist speaks to the class on neurocognitive profiles and study strategies. We sponsor a "student appreciation week" during which a range of workshops and other sessions are available to students including healthy eating, acupuncture, and other complementary and alternative health strategies. Of interest, we find attendance at these voluntary events is enhanced when we emphasize the value it has in preparing them to help their peers rather than focusing on "self-help." We encourage students to get regular exercise and remind them about the importance of good sleep habits (see also Chap. 11).

Academic stress can trigger an anxiety disorder, major depression, a bipolar episode, and other mental health issues. Faculty and deans need to be vigilant in identifying medical students at risk for developing mental health issues and have mechanisms for intervention. At NYU School of Medicine, we have psychiatrists at our student health service who care for our students at no charge to them. In addition, we regularly refer students to outside mental health professionals for ongoing treatment.

18.6.1.3 "Forward feeding" Information
The dean for student affairs needs to determine which faculty member will be informed of a student's struggles and what level of detail to disclose within the guidelines of FERPA. At NYUSOM, the preclinical board on academic standing, comprised of course directors and chaired by the dean for student affairs, reviews each student with failures and marginal grades on assessments in the areas of foundational knowledge and clinical skills. Unless a student gives explicit permission to share their information, the dean does not disclose details of the cause(s) of the students' difficulties.

There are different opinions regarding the "forward feeding" of data about struggling students to faculty who will be working with them (see also Chap. 20). On the one hand, this knowledge may prepare faculty to better support these students through early identification and intervention. In addition, students with a pattern of marginal performances are a concern and may

fly under the radar if there is no forward feeding [9]. The counterargument is that these faculty members may be biased by this information, which may lead to treating these students differently and possibly assessing them differently [10]. At our school, we have a preclinical board on academic standing that is separate from the clinical board on academic standing. In retrospect, we often observe students flourishing in the clinical curriculum after struggling in the preclinical curriculum and believe it is best not to "feed forward" information outside of a few select instances. One particular observation is worth noting—in my experience, students with a history of mental health issues often find the core clinical clerkship in psychiatry to be particularly challenging. I counsel students regarding this phenomenon and will occasionally ask permission to speak with the psychiatry clerkship director in advance of the student's rotation to alert them of the student's background.

18.7 Common Issues in the Clinical Curriculum

To be successful in the clinical setting requires students to rapidly gain a new set of skills. The transition from preclinical to clerkship curriculum is often the time that deficits in interpersonal skills and professional behavior are noted. Some of these students are identified earlier as a result of early clinical exercises in which communication and behavioral difficulties are identified. Below I address the most challenging patterns of behavior, which although often previously suspected tend to become major difficulties in the clinical clerkships.

18.7.1 Autism Spectrum Disorders

Students with previously identified or suspected autism spectrum disorders including those identified as having high functioning autism spectrum disorder (formerly known as "Asperger's syndrome") are often viewed as competent but quirky in the classroom setting. Interacting in clinical teams and with patients can be challenging, as they cannot accurately read the social and emotional cues of others. While it is common for these students to engender significant sympathy from classmates and faculty as they are well meaning and earnest, their communication behavior can be very "off putting" to patients. Although current treatment strategies for those with autism spectrum disorders are expensive, time-consuming, and often unsuccessful, we have found some can benefit in demonstrating the ability to function effectively as a medical student from intensive coaching and role-play practice focused on clinical interviewing (see also Chap. 10). The best predictor of success in these cases is the student's level of motivation and awareness of their own challenges.

18.7.2 Personality Disorders

Students with antisocial personality traits are of great concern in medical school because of their socially irresponsible and exploitative behavior. These students have disregard for school policies and expectations of professional behavior, do not show remorse, and don't usually learn from the consequences of their actions. In addition, a lack of empathy is common and disconcerting to patients and peers. These students need clear expectations outlined for them and close follow-up. The recent AAMC-facilitated national criminal background check service for applicants at the time of their acceptance to medical school, currently used by most schools, may reduce the number of medical students and physicians with antisocial personality disorder in the future.

Students with borderline personality traits are emotionally labile, have unstable relationships with others, and are impulsive. Many people with borderline personality disorder also have coexisting mood, anxiety, substance use, and eating disorders. Impulsivity and emotional distress often result in these students having difficulties. Faculty often experience working with these students as intense and emotionally exhausting. Support teams working with these students should be aware of the student's common tendency to "split"

the team members into extreme groups of "good" and "bad" and pit them against each other. This behavior makes remediation very challenging.

Students with schizotypal personality traits are often described as "odd" or "eccentric" and have difficulty interacting with others. The challenge with these students is ascertaining whether or not a thought disorder is present. In these situations it is essential to have an administrative psychiatrist at the school assess the student. These students struggle on clinical teams and in their interactions with patients.

In general, the persistence of personality traits or disorders and their relative lack of responsiveness to treatment make working with these students challenging and careful monitoring and follow-up throughout medical school is important (see also Chap. 17).

18.7.3 Unprofessional Behavior

What keeps student affairs deans up at night? The high-profile unprofessional act of a medical student. Though most students behave professionally all the time, unsavory behavior by a trainee is long remembered by faculty and classmates. At NYUSOM, a disciplinary committee comprised of faculty and medical students adjudicates cases that are not resolved by the dean for student affairs. This committee gives final recommendations to the dean of the medical school. Academic dishonesty, HIPAA violations, and failure to meet academic responsibilities in a timely manner are the most common instances of unprofessional behavior at our school. Schools vary in their policies regarding remediation versus immediate dismissal for unprofessional behavior.

More frequently, unprofessional behavior may be minor and investigated and remediated without the formal activation of the disciplinary committee. However, this becomes problematic when a pattern of relatively "low level" inappropriate behaviors develops. Since the student affairs dean may be the only one to appreciate the pattern early on, and because early intervention is

thought to be the most effective remedial strategy, I have found it is essential to keep a private record ("written memory") of these minor issues. I am also transparent in my communication with the involved student explaining that a pattern of behavior will trigger an official complaint to the disciplinary committee.

18.7.4 Substance Abuse

Students may be impaired due to use of legal or illegal substances. Peers are usually the most knowledgeable about a classmate's substance use and may come forward to a faculty member or the dean's office to share this information. Care should be taken to be supportive of classmates' concerns and privacy while also obtaining accurate, reliable, and complete information. The school should confront the impaired student with information (test scores, evaluative comments, informal comments) that supports the conclusion that the student is unfit to in their role as a student. The school may require an individual student undergo random blood and urine testing. Students found to be impaired are required to undergo treatment and monitoring. In New York State, medical students can be enrolled in the Committee on Physician Health (CPH) for ongoing monitoring and treatment.

The mission of the New York State Medical Society's Committee for Physician Health "is to promote quality medical care by offering non-disciplinary confidential assistance to physicians, residents, medical students and physician assistants suffering from substance use disorder and other psychiatric disorders. The Committee monitors the treatment and compliance of program participants and provides advocacy and support as well as outreach activities, including prevention and education." [11].

Students should be required to allow communication between CPH and the medical school for the duration of their time as a student. CPH requires continued random drug testing and therapy as conditions of their program and reports periodically to the medical school regarding ongoing compliance with their requirements.

18.8 Fitness for Duty Evaluation

On occasion a student's psychiatric illness or suspicion of impairment will call into question their fitness to continue in medical school. We have an administrative psychiatrist who conducts fitness evaluations using primary, and sometime ancillary, data to make a determination. Students found to be "unfit" are placed on a leave of absence by the school and are required to address their issue in order to be allowed to return to the school. The same administrative psychiatrist will evaluate any student on a leave of absence for mental health or substance use issues who requests re-matriculation at our school.

Fitness for duty issues may be more common at the GME level and in practice. It is required that we report physician impairment to New York State, and we strongly encourage physicians to participate in CPH.

18.9 Dean's Office Resources for Remediation

Schools develop their own resources to remediate students and vary widely on what is available and on who pays for the remediation. Philosophically, schools need to determine whether their supports (i.e., offering and paying for remediation) are helpful to the student or enabling a lack of responsibility and ownership on the student's part. The box shows a list of the resources we commonly use for medical student remediation, a list of "dream resources," those we currently don't have but would be of great help and an estimate of the cost of remediation per student at this point in time.

At NYU, we have used the following resources for remediation:
1. Learning specialist
2. Academic tutoring
3. Student health psychiatrist
4. Administrative psychiatrist
5. Course faculty
6. Expert faculty on remediation
7. New York State Committee on Physician Health
8. Outside professionalism programs
9. Simulation experiences with expert faculty at a simulation center

"*Dream resources*" *that I would like to have*:
1. Fund to cover mental health expenses not covered by student health service and health insurance (co-pays for medication, support for intensive psychotherapy).
2. Remediation program developed by expert faculty to be delivered at our simulation center.
3. Fund to develop extensive assessments of professionalism to test students who have failed on professional grounds.
4. Social skills therapist to work one on one with students on the autism spectrum to observe them in clinical settings and then treat them.

Examples of the costs associated with remediation per student:
1. Complete learning specialist evaluation ~$3,500/student
2. Tutoring $25/hour
3. Student health psychiatrist—included in support of our student health service
4. Administrative psychiatrist—included as part of physician's responsibilities to the school
5. Course faculty—no additional cost
6. Expert faculty on remediation—no additional cost

7. Comprehensive clinical skills exam (CCSE) remediation—~$400/student excluding faculty time
8. New York State Committee on Physician Health—sponsored by the medical society of the state of New York, at no cost to the impaired student/physician or to the school
9. Outside professionalism programs $2,500–4,500

At our school, out of about 650 students enrolled at any one time, approximately 10–20 students receive tutoring for failure on knowledge assessments per year. We only offer tutoring to failing or marginal students. Approximately 5 students undergo a detailed learning evaluation each year. Approximately 20 students undergo remediation for skills exams each year, which includes students remediating within preclinical modules (such as after failing an OSCE) and students remediating a failure in our CCSE (see Chap. 2).

Each school has its own method of remediation of medical students. While often the remediation occurs within a course or clerkship structure, at NYU we have found it helpful to also have faculty with expertise in remediation of clinical skills and professionalism lapses. In addition, there are outside resources available for remediation of professionalism issues including the Vanderbilt Comprehensive Assessment Program for Professionals at Vanderbilt University Medical Center and Acumen Assessments in Kansas.

18.10   Official Academic Record

The contents of the official academic record are specific to each school. At many schools the official academic record consists of a student's transcript, student's duplicate record (in addition to the transcript it includes biographical information and USMLE scores), narrative evaluative comments from faculty, the medical student performance evaluation ("MSPE," aka "Dean's letter")

and, for a small number of students, a disciplinary report. The entire official academic record can be obtained by subpoena in a court of law. The AAMC has official guidelines for the MSPE.

The AAMC guidelines for the MSPE include such issues as:
- Inclusion of students' academic history including any gaps in education such as a leave of absence
- Information, based upon school-specific policies, of coursework that the student was required to repeat or otherwise remediate
- Information, based on school-specific policies, of any adverse action(s) imposed on the student by the medical school or its parent institution
- Narrative evaluation of students in the core clinical clerkships and electives that focuses on summative, instead of formative, feedback
- Assessment of professional behavior
- Appendices which include a graphic representation of a student's performance as compared to his/her peers

Each state medical licensing board has its own requirements for documentation and some states, such as California and Massachusetts, are quite extensive. For instance, California currently asks if a student has been on probation during medical school. Some schools have policies in which students are placed on probation for academic or professionalism reasons during medical school, with the agreement that the record will be "sealed" if the student does not have any repeat issues. This becomes an issue if a student is applying for licensure in select states that ask this question. The definition of probation is evolving and becoming more formalized and specific in response to this changing landscape. Some institutions are now preserving the term "probation" for use after the effectiveness of early stages of remediation can be

assessed. In these cases the terms "focused review" or "academic warning" are used to denote the early states of remediation (see also Chap. 20). Credentialing services contact medical schools on behalf of graduates and institutions to verify completion of medical education. Typically they request information about interruptions in medical education, academic or disciplinary probation, unprofessional conduct or reports of negative behaviors, or questions of academic incompetence. Such reports should be completed based on the official academic record. Student data that is outside of the official academic record *cannot* be shared with outside parties including residency programs and licensing boards. This includes oral or written "off the record" comments by faculty, peers, or others in the administration. Many student affairs deans keep records of discussions with students. These records, as long as their only purpose is to serve as the written "memory" of the dean, are private and not available at the time of subpoena.

18.11 What to Recommend to a Graduating Medical Student

Students who have undergone remediation in medical school may or may not be at risk for difficulties during postgraduate training. All students should be counseled to seek out training programs that best fit their goals, strengths, work styles, and personal requirements. Divulging remedial work that is not part of the student's record is the personal choice of the student and should be made carefully. I counsel students to always be honest and professional while understanding their own right to privacy. It has been our experience that students who engage with enthusiasm and successfully complete remediation programs are prepared for residency training and practice. The student may perform as well, or better, than their colleagues who did not struggle during school. We encourage graduates to optimize their success by asking for feedback frequently from peers and supervisors and acting on the information gained. Graduates with disability accommodations in place should be

encouraged to bring documentation to their program director well in advance of needing the actual accommodations to ensure appropriate supports are instituted. Students need to be aware that accommodations within hospital systems can be particularly difficult to enact as patient care and patient privacy policies supersede their rights in some cases.

18.12 Dismissal of Medical Students

The percentage of medical students dismissed from school is strikingly small when compared to other professional schools such as law or business. I have found medical school faculty are naturally interested in "diagnosing and treating" the problem student and are more comfortable with their role in remediation than in determining when a student cannot meet milestones and must be dismissed.

If dismissal from medical school is being seriously considered, the student must be informed. In my experience, this discussion is often enough to motivate a learner to be an active participant in successful remediation. It is also important to clearly outline the school's requirements, including exact deadlines, for the student to complete their remediation activities. This should be done both verbally and in writing and reflect the school's policies on student promotion and professional behavior. Legal counsel can be helpful with reviewing these documents as policies may be subject to interpretation. At NYU, I notify a student when the school is considering dismissal and encourage the student to advocate for themselves in writing to the appropriate committee. Typically, students in this situation have already been told multiple times they are at risk for dismissal and have undergone remediation unsuccessfully. Many schools have the appropriate committee (preclinical board on academic standing, clinical board on academic standing, or disciplinary committee) deliberate and vote on recommending a student's dismissal to the dean, who makes the final decision. Students should have the right to appeal the decision within a defined time frame (see also Chap. 20).

The dismissal of a student is the most high-profile example of when the dean for student affairs and the involved faculty have to balance their advocacy for the student with their obligation to the medical school and society at large. In addition to following the institution's policies and procedures, I also consider the immediate needs and issues facing the dismissed student. Given the gravity of the situation, I recommend the student talk with a trusted friend or relative, and I also refer him or her to a mental health professional for support in addition to notifying the student health service in case the student contacts them for care. Students need time to move out of on-campus housing. Once a student is officially dismissed, they need to leave school in a timely fashion. If the school's policy allows it, refunding all or part of the semester's tuition is appreciated. A dismissed student may also appreciate if the dean for student affairs helps explain the dismissal to a parent or spouse with them.

References

1. Julian ER. Validity of the Medical College Admission Test for predicting medical school performance. Acad Med. 2005;80(10):910–7. PubMed PMID: 16186610.

2. Papadakis MA, Teherani A, Banach MA, Knettler TR, Rattner SL, Stern DT, Veloski JJ, Hodgson CS. Disciplinary action by medical boards and prior behavior in medical school. N Engl J Med. 2005;353(25):2673–82. PubMed PMID: 16371633.

3. Eva KW, Reiter HI, Rosenfeld J, Trinh K, Wood TJ, Norman GR. Association between a medical school admission process using the multiple mini-interview and national licensing examination scores. JAMA. 2012;308(21):2233–40. doi:10.1001/jama.2012.36914.

4. Law School Admissions Council. Law school admissions council volume summary. LSAC data; 2013. http://www.lsac.org/lsacresources/data/lsac-volume-summary.asp. Accessed 17 July 2013.

5. Garrison G, Mikesell C, Matthew D. Medical school graduation and attrition rates. Anal Brief. 2007;7(2): 1–2.

6. American Association of Medical Colleges (AAMC). Executive summary: medical students with disabilities—Group on Student Affairs (GSA)—member center [Internet]. Washington, DC: Association of American Medical Colleges; 1995–2013. Available from https://www.aamc.org/members/gsa/64660/gsa_ada.html

7. NYU School of Medicine. NYU School of Medicine Technical Standards [Internet]. New York: NYU Langone Medical Center; n.d. Available from http://school.med.nyu.edu/nyusom-technical-standards

8. Family Educational Rights and Privacy Act (FERPA), 20 U.S.C. § 1232g; 34 CFR Part 9 [Internet]. Available from http://www.ed.gov/policy/gen/guid/fpco/ferpa/index.html

9. Cleary L. "Forward feeding" about students' progress: the case for longitudinal, progressive, and shared assessment of medical students. Acad Med. 2008; 83(9):800. doi:10.1097/ACM.0b013e318181cfbc.

10. Cox SM. "Forward feeding" about students' progress: information on struggling medical students should not be shared among clerkship directors or with students' current teachers. Acad Med. 2008;83(9):801. doi:10.1097/ACM.0b013e318181cfe6.

11. Medical Society of the State of New York. MSSNY-CPH Mission [Internet]. New York: Medical Society of the State of New York; 2011. Available from http://www.mssny.org/mssnyip.cfm?c=i&nm=Mission_Statement

Preparing to Conduct Remediation

19

Adina Kalet and Sondra Zabar

Abstract

In this chapter, the authors assert that effective faculty development for remediation is a capacity-building process, which requires both individually and institutionally focused approaches. They propose a set of specific competence areas for individual faculty development and briefly discuss attributes of teachers and theories of learning and teaching strategies that impact on the ability to remediate effectively. In particular, they focus on the importance and specifics of developing judgment, facilitation skills, emotional intelligence and courage, and attitudes consistent with effective remediation work. They conclude by proposing the need to organize these activities so that they are aimed at creating a community of practice in remediation, which is integrated with other important communities of practice (e.g., education and workplace) to inform and be informed by these related activities to ensure the most "competent" healthcare systems possible.

19.1 Introduction

Ideally, conducting remediation would be included in every medical educator's job description. After all, we rely almost entirely on the judgment and skills of frontline educators to identify and remediate our trainees. Yet, usually only a few individuals take up this challenge with the enthusiasm, knowledge, skills, and compassion required to be effective. Moreover, institutional support is highly variable and in some

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instances may hinder remediation by casting it as fundamentally regulatory and punitive, rather than educational.

As clinical educators, we are unique among other faculty members in higher education in that we routinely "live" with our students and graduates. We engage in patient care with students at our sides. As trainees gain our trust, we gradually allow them more independent practice until they can conduct patient assessments and make high-stakes decisions. Therefore, compared to our basic science faculty colleagues, we are exceptionally motivated to ensure our trainees are trustworthy. We are also uniquely qualified to conduct remediation, because the clinical reasoning model corresponds to clinical skills remediation practices: both use evidence to determine

diagnosis and prognosis, implement therapies, and monitor outcomes. Clinicians are trained to manage complex high-stakes problems and to combine rigorous critical thinking with skillful communication. We have a culture of maintaining confidentiality and working within a clear code of ethics. All this being true, the most important reason healthcare professionals should vigorously take on the responsibility of conducting remediation is that in doing so, we fulfill a professional obligation to society.

While some find working with struggling physicians satisfying and meaningful, many do not. Difficult colleagues or trainees who do not meet professional standards are intellectually and emotionally challenging (Chap. 17). Anticipating conflict, we often prefer to avoid confrontation, or we may identify and empathize with the trainee and therefore "cut them some slack." Some teachers blame the trainee or the system for allowing this problem to go unaddressed. Others remain dubious that effective, practical remediation strategies exist. For these reasons and more, we frequently abdicate our responsibility and do not identify struggling learners early enough to intervene effectively.

In contrast, many academic medical centers have a few dedicated educators who have developed the needed expertise because they have worked extensively with competency committees or similar bodies and deeply enjoy the work of remediation. Increasingly, institutions are moving from *ad hoc* remediation interventions—rooting out "bad apples"—toward systematic programmatic approaches, which at their best are continuous quality improvement efforts that engage all learners and teachers (see Chaps. 2, 3, 11, 12). Those involved in this emerging field agree that most trainees, whether identified as struggling or not, deeply appreciate the opportunity to address a vexing weakness in a supportive and confidential manner. Even when the outcome is not ideal for the student, the remediation process can clarify and satisfy, and long-term outcomes are likely to be optimistic. But without faculty development in this domain, our institutions will lack adequate capacity to address

the need to get colleagues and trainees back "on course" when required.

In this chapter, we assert that effective faculty development for remediation is an organizational capacity-building process that requires both individually and institutionally focused approaches. We will propose a set of specific competence areas for individual faculty development and briefly discuss attributes of teachers, theories of learning, and teaching strategies that impact on the ability to remediate effectively. In particular, we will discuss the importance and specifics of developing judgment, facilitation skills, emotional intelligence, courage, and attitudes consistent with effective remediation work. We will conclude by proposing the need to organize these activities so that they are aimed at creating a community of practice in remediation, integrated with other important communities of practice (e.g., education and workplace), to inform and be informed by these related activities to ensure the most "competent" healthcare systems possible.

19.2 Who Should Conduct Remediation?

As discussed above, the most effective facilitators of clinical competence remediation are likely to be clinician educators deputized by educational program leaders who are responsible for making promotion and graduation decisions. In particular, clinical educators should be in charge during two critical stages of remediation: when diagnoses are made and when summative recommendations or judgments are needed. Once specific issues are identified, a variety of specialists can add value. These experts most often include communication coaches, experienced standardized patient trainers (who often have additional training, e.g., in feedback or drama therapy), learning specialists, study skills and executive function coaches, mental health professionals (such as psychiatrists and psychologists), and respected clinical faculty members who function as professionalism role models and/or clinical skills coaches.

19.3 Faculty Development for Remediation

19.3.1 Specific Competencies for Faculty

The institutional capacity to remediate struggling trainees is dependent on the number, commitment, and expertise of the faculty members available to participate. While not every member of the teaching faculty needs to lead remediation efforts, the more competence there is in the faculty as a whole, the better the community can manage struggling learners. Faculty members who enjoy working with trainees one-on-one and are interested in the evolving notion of clinical competence are ideally suited for this work (see Chap. 1). Table 19.1 lists learning objectives for faculty development in clinical skills remediation based on our experience conducting remediation. Appropriately, many of these attributes align closely with those identified for good clinician educators [1].

19.3.2 What Is Learning? Theories 101

Learning Theory
A well-substantiated, coherent group of tested general propositions commonly regarded as correct, defining and explaining learning, that serve as a framework to guide educational practice and explain and predict outcomes.

Learning is a fundamental aspect of human life. Anyone who has lived with an infant can attest to the unstoppable drive humans have to explore, discover, and master their world. However, this drive toward competence can also be dangerous unless we have guidance in learning and protection from harm. While a working knowledge of learning theory is foundational for trained general educators, most health professions educators do not formally prepare for their teaching role and therefore cannot connect what they do with learning theory. And yet, we each have our own theory of learning or beliefs

Table 19.1 Specific competencies and objectives and suggested reading in this book

Clinical educators conducing remediation should be able to:
1. Explore personal perspectives, attitudes, and beliefs that inhibit identification of learners who struggle (see above and Chap. 21)
2. Articulate how current learning theories apply to routine medical teaching and assessment practice as well as remediation (see Chap. 1 and below)
3. List common and uncommon areas of difficulty for struggling trainees (see Chap. 2)
4. Discuss the role of adult development in assessing clinical competence (see Chaps. 11, 12)
5. Construct useful individualized remediation plans with proper accountability, based on critical review of objective and subjective assessment data for an individual learner (Chaps. 2–6, 16)
6. Discuss the underlying assumptions of various assessment strategies and common misunderstandings (e.g., psychometric and sociopsychological frameworks, the place of reliability and validity of measures, the impact of context on performance) (see below)
7. Participate enthusiastically in setting standards for trainees and other performance assessment experiences including performance dimension, frame of reference, and behavioral observation training in order to improve skills and understand relevant aspects of "rater cognition" (see below)
8. Define clinical competence in a behaviorally specific and measurable manner (Chaps. 3–7)
9. Identify and design authentic complex tasks in which trainees can demonstrate competence (Chaps. 3–7)
10. Articulate expectations for professional behavior, appropriate attitudes, needed attributes, and character traits of excellent physicians (Chap. 7)
11. Discuss the impact of bias and prejudice on achievement (see Chap. 8)
12. Demonstrate taking an educational history from a trainee, including addressing clues suggesting the presence of a verbal or nonverbal learning disability or attention deficit disorder (see Chaps. 9, 10, 12)
13. Demonstrate the ability to screen for common psychiatric issues that may manifest as coexist with clinical incompetence (see Chaps. 11, 12)
14. Demonstrate exceptional metacognitive skill and awareness (see Chap. 13)
15. Give effective reinforcing feedback as well as direct and difficult-to-receive constructive feedback (see Chap. 15)
16. Demonstrate the courage, intellectual rigor, and compassion to make defensible judgments of clinical competence in borderline cases (see below)
17. Document a concise, useful remediation process that addresses legal and regulatory requirements (see Chaps. 18, 20)

about what it means to teach [2] (see http://teachingperspectives.com/drupal/ to take the Teaching Perspectives Inventory). These beliefs, combined with the desired outcomes for learning, available resources, and the practical conditions of learning (e.g., bedside rounds), guide how we organize or structure learning experiences (e.g., organ-, systems-, problem-, team-, or case-based learning) and the tactics we use to facilitate learning (e.g., observation, guided problem solving, lectures, seminars).

Clinical educators must examine and critique our own beliefs about learning and teaching, since we often base these beliefs on our own unique experiences in formal and informal learning settings and only sometimes compare these with well-accepted theories. What follows is a brief and selective discussion of the intertwining threads of learning theory that have had significant influence on medical education (more extensive reviews of this subject are available elsewhere [3–6]). Many other important learning, psychological, and sociological theories are relevant to learning and remediation in medical education. For instance, theories that help us understand motivation to learn, such as self-determination and self-efficacy theory, are very useful in remediation work [7]. We will review learning through three of the main coevolving and influential points of view: behaviorism, cognitivism, and constructivism.

Classical *behaviorism*, the predominant learning theory in the late nineteenth century, held that all learning could be described as a response to a stimulus. In the first decades of the twentieth century, with the advent of experimental psychology, *Gestalt theory* proposed that learning occurs as a "flash of insight" produced by taking in a holistic experience of something and, based on what the learner already knew, actively reorganizing and reconstructing it until the underlying patterns and generalizable principles take hold. The teacher's task, therefore, was to support this active process of discovery, a radical departure from the view that learning was passive and received from teachers. A resurgence of neo-behaviorists working in the 1920s saw learning as operant conditioning of observable behaviors, proposing that

reinforcement by reward or punishment was the most important factor in learning. Probably the most iconic example of this *programmed learning* technique in medical education is the best-selling book *Rapid Interpretation of EKG's* by Dale Dubin [8], continuously published since 1972 and well known to healthcare professionals around the world as a very effective introduction to EKG reading. This view is also apparent in much of the work to define competence and learning objectives as observable behaviors [9].

In the 1930s, the work of Jean Piaget, who studied child development, suggested that the most important factor influencing learning is the individual's stage of cognitive development. This *stage theory* had far-reaching impact on education in general. It also stimulated similar work in adults, which influenced higher and professional education through the work of others; for example, Lawrence Kohlberg proposed a staged theory of moral development in adults that helps understand ethical decision making (see Chap. 7).

Through the lens of *social cultural theory*, underlying problem-based learning and other activity-based instructional models, learning occurs when a learner internalizes his or her interaction with others in the world. Teachers construct learning experiences partially by identifying and manipulating the "zone of proximal development" [10]—the knowledge and skills that learners cannot yet understand or perform on their own, but are capable of learning with guidance from teachers or with peers.

From the 1950s through the mid-1970s, as a consequence of breakthroughs in the neurosciences, the information processing capacities of the human mind began to be described in terms such as encoding, storing, retrieving, and transferring. Deep learning, that which can be retrieved and applied as needed to solve novel problems, requires active information processing. The rich and dynamic field of cognitive psychology, which has dominated learning science since then, provides innumerable relevant insights and tools. Among the most important for health sciences education and practice has been the idea that learning consists of laying down and then building symbolic cognitive representations in what

are called scripts or schemas. Therefore, most adult learning is seen as the process of adding new information to existing networks or schemas. Experts have rich schemas arranged in semantic networks, which include many variations built through experience. In this paradigm, the most important factor influencing learning is what someone already knows. This *cognitivist theory* greatly influences the work done to understand how novices learn clinical reasoning (by constructing and improving on illness scripts) and how to best measure it [11–13]. This paradigm also provides a rich foundation for the decision sciences and further refines our understanding of clinical reasoning and its impact on patient outcomes and safety [14], and connections with systems of learning and practice supported by technology.

Social constructivism is a current dominant learning theory; proponents propose that meaningful learning is actively constructed by an individual or group of individuals through social interaction. A social construct is a concept or practice that is created by a particular group. For example, competency frameworks define individual competence because we say they do, not because there is an inherent truth about medical competence. In fact, sociological (as contrasted with psychological theories) tend to situate the focus of learning in a social interpersonal environment (e.g., team, unit, department, institution, profession) rather than as a capacity of a single individual. The impact of this view on education practice is reflected in the emerging focus in health sciences education on quality and safety, workplace learning, learning communities, and interprofessional education.

19.4 Faculty Skills for Remediation Work

19.4.1 The Teacher as Facilitator of Learning

Facilitation of learning is a simple idea: in this "learner-centered learning" stance, the teacher sincerely and fundamentally values that individual students focus on their own learning rather than on the teacher's teaching. This approach is often especially challenging in the context of remediation, where trainees have underperformed or behaved badly, and requires a mindset that learning can occur through growth in competence rather than being dependent on fixed characteristics such as inherent talent [15]. Importantly, learner-centered learning should not be confused with teacher passivity or indulgence of the learner. An effective facilitator can be fierce, active, and demanding. A facilitative teacher tends to have an exceptional ability to ask frank questions and actively and accurately listen to the answers. This type of teacher tends to be highly emotionally intelligent and has the capacity to actively maintain what the humanist psychologist Carl Rogers termed *unconditional positive regard* for learners [16]: regardless of what learners say or do, or how well or poorly they perform, they deserve basic acceptance and support as individual people. Rogers believed that unconditional positive regard is essential to healthy psychological development and to individuals accepting and taking responsibility for themselves.

For remediation to be effective and meaningful, there must be trust in the relationship between teacher and learner. This trust is dynamic and is threatened whenever someone "makes trouble" by, for instance, giving critical feedback or refusing to engage in remediation. The trust can be repaired when it becomes clear that the trouble does not destroy the positive regard or the relationship. This manifests as being "nonjudgmental" in an educational relationship, that is, the teacher is able to express fundamental respect for and acceptance of the learner even when needing to confront and criticize their performance [17] (see Chaps. 15 and 16). Facilitation is a skill that can be learned and refined. There are a number of facilitator training programs in medical education. One of the longest running and most successful is the Facilitator Training Program of the American Academy on Communication in Healthcare (http://www.aachonline.org/?page=FITProgram).

19.4.1.1 Cognitive Apprenticeship Approach

Apprenticeship is an ancient and well-worn instructional method, still highly valued in health sciences education, in which the novice learns by

doing real-world work alongside an expert. The critique of this model in practice has been that the master teacher often fails to share all the tacit processes involved in carrying out complex skills, making what they do seem mysterious or magical to novice learners. *Cognitive apprenticeship* is an instructional model that explicitly and deliberately brings tacit processes into the open, where students can observe, enact, and practice them with help from the teacher [18]. This framework for instruction is based on several learning theories, including *situated learning*, in which the context of the learning is inextricable from the learning (e.g., people who can't do simple arithmetic on a math quiz may still have skills to make change expertly in the supermarket). Theories of modeling and coaching, which propose that learners must be attentive, motivated, engaged, and able to practice for modeling to be successful, also support this cognitive apprenticeship process. Below is a sample of specific teaching strategies suggested by this framework that are especially useful in remediation work.

Cognitive Apprenticeship: Teaching Strategies

Modeling: Demonstrate the task so that learners can build their own internalized schema or script. Narrate the underlying thinking and decision making behind key steps in the task.

Coaching: Observe the learner's performance and offer feedback along the way to guide the development of the learner's ability. Adjust the task so that it is just beyond the learner's current abilities.

Scaffolding: Support learning by analyzing the learner's current ability and providing just enough support to allow the learner to practice the task. Initially this may include doing part of the process. Scaffolding should fade away as student expertise grows.

Articulation: Ask questions that enable the learner to state what they know, think,

(continued)

or can do already. Then follow this by asking the student to "think aloud" or narrate the process. Guiding learners in groups to help each other articulate the underlying factual knowledge and concepts needed to conduct the skill.

Reflection: Have the learner analyze their performances to develop awareness of the similarities and differences between their own thought processes and that of an expert. The goal is to have the student develop an internalized model of expertise. Ask students to list "take home points" verbally or in writing.

Exploration: Create opportunities for students to defining an interesting problem within the domain for themselves and take the initiative to solve these problems.

19.4.2 Judgment

In medical education, it is not acceptable to pass someone just because they don't fail a knowledge exam or upset someone enough to instigate a complaint. When working with a struggling trainee, one must take responsibility to make the difficult judgments about competence and promotion.

Judgment
The ability to make considered decisions or come to sensible conclusions

As Holmboe argued in 2004, as the United States Medical Licensing Examination (USMLE) was about to institute a standardized patient exam as part of the licensing process, "the main responsibility for teaching and evaluating these skills should remain with physician–educators. Medical educators must not abdicate this responsibility to standardized patients and simulation." However, he has proven in his own research that without training in making specific observations, calibrating judgments to a "frame of reference," and having a working knowledge of dimensions of performance and competence frameworks, even experienced clinician educators do not distinguish

among trainees with enough specificity to make quality competence judgments [19, 20].

It is important for educators to understand that within a psychometric framework, faculty competence judgments are rarely of high quality. This is because the goal in psychometrically sound assessment is to pursue consistency or reliability of the measures and assume that any disagreements among raters are due to a technical flaw in the measurement. Yet halo effects, leniency in grading, and range restriction are commonly reported errors that are treated as a cause of inaccuracy of performance ratings. Achieving an acceptable level of reliability when using faculty as raters, if possible at all, requires significant investment of resources and such efforts are frequently frustrating and unsuccessful. The consequence is often that we blame faculty for this inconsistency.

19.4.3 The Best Use of Faculty Raters: In-Training Assessment

"*real-life performance assessment is less about measurement and more about reasoning, problem solving and decision making in a dynamic environment, akin to clinical reasoning and decision making in medical practice*" [21]

While standardized assessments of aspects of clinical competence (e.g., knowledge, procedures, basic communication) provide valuable feedback to trainees, educators understand that the performance that matters most cannot be defined independently of a real clinical context. For this reason, there needs to be a growing emphasis on in-training assessment (ITA), defined as multiple observations and assessment of performance in the setting of day-to-day practice using direct observation and simplified tools [22]. ITA has become an invaluable tool in comprehensive and valid assessment of clinical competence, because it approximates measuring the most relevant clinical performance when training healthcare professionals. Although this approach also suffers from considerable limitations in accuracy and reliability, it has the distinct advantage of explicitly valuing the expert judgment of the faculty raters, who are viewed as active processors of information in a complex environment, continuously challenged to assess a trainee's performance for different contexts (i.e., performance rating, formative feedback).

At its best, ITA is an active give-and-take between trainee and assessor. In this relational context, goals and performance criteria are negotiated and responsive to the particulars of the situation. Therefore, in clinical settings, assessment is embedded in the larger context of teaching, shaped by the demands of patient care and often with the direct involvement of the patient. In contrast to standardized assessments, in which inconsistent ratings between teachers can become problematic, disagreements between trainee and assessor may be the most valuable aspects of ITAs [23]. The experience, expertise, unique opinions, biases, and idiosyncrasies of the teacher provide rich and relevant information about performance, especially when compared and contrasted with those of other individual teachers.

19.4.4 Measurement vs. Judgment

Faculty involved in assessment of competence and remediation must understand the underlying assumptions of various assessment approaches (e.g., psychometric, objective, constructivist). It is also important to distinguish between a measurement (an objective and incontrovertible rating) and a judgment, a more flexible decision-making process in which the faculty rater takes into account the individuals involved and the social context in which assessment occurs. Emerging research in "rater cognition" has identified that experts form instantaneous impressions of a trainee's performance and categorize the trainee, often in very idiosyncratic ways [24]. Using a constructivist framework, a member of the faculty may appropriately assess the same trainee performance differently based on the purpose of that judgment. In our assessment and remediation practice, we have stopped using faculty raters when highly consistent measurements

are needed (e.g., assessment of foundational communication and physical exam skill in OSCEs) but save these valuable teachers to make judgments where needed (e.g., assessment of clinical reasoning).

19.4.5 The Courage to Judge

Understanding how an expert faculty member judges the competence of a trainee helps deepen our capacity to make considered decisions and draw sensible conclusions. However, no matter how sophisticated or high quality we make assessments and the judgments based on them, it will always require courage and conviction to act definitively once a trainee or colleague is judged to be incompetent (see Chap. 20).

19.5 Effective Models of Faculty Development for Remediation

There have been calls for a unified set of expectations and effective faculty development approaches [25]. As practiced, the term "faculty development" applies to a broad range of activities that institutions use to assist faculty members in their multiple roles and include a variety of structures (e.g., single session, episodic, longitudinal, train-the-trainer, fellowships). Ideally, these models of faculty development can challenge assumptions about learning, provide experience with new instructional techniques, and offer other skills needed to succeed as an educator. Although evaluation methodology is flawed, faculty development activities generally are satisfying to participants; have positive impact on attitudes, knowledge, and teaching behaviors as reported by learners; and lead to the establishment of networks among colleagues. Yet, other evidence suggests that faculty only reluctantly change educational practice. Features of effective faculty development include the use of experiential learning, provision of feedback, effective peer and colleague relationships, well-designed

interventions following principles of teaching and learning, and the use of a diversity of educational methods within single interventions [26]. What is clear from the literature is that while faculty development programs have focused on providing participants with strategies, approaches, and best teaching practices, they have succeeded less well at supporting participants in implementing these practices in their institutional context.

These faculty development curriculum models tend to be compartmentalized (e.g., a lecture or workshop on remediating professionalism) and de-emphasize critical relationships among objectives that are essential to mastering complex skills (e.g., remediating lapses in professionalism). Consequently, participants have difficulty transferring their learning to new complicated situations. This "transfer problem" is of great interest to education researchers and practitioners and has emerged at the forefront as mainstream medical education embraces formal and expensive simulation laboratories [27]. As a result, medical education is moving toward holistic models of curriculum and instructional design, intended to support complex learning and avoid fragmentation of learning [28]. Such curriculum models do not require breaking down learning tasks into knowledge, skills, and attitudes [29]; instead, they depend more on performing tasks as meaningful wholes (e.g., conduct an effective, data-driven professionalism remediation process with a resident) and introducing variation that challenges learners to compare and contrast different "presentations," building richer and more accurate schemas in the process. These approaches emphasize coherence, relationships, and coordination of learning in authentic real-life tasks. In this model, a coach defines and prioritizes the tasks in all its meaningful variations, developing supportive and just-in-time material and judging competence. The process of this training in fact parallels the process of remediation that learners undergo. Research has shown that this approach to curriculum design, while potentially slowing short-term learning, produces better retrieval and transfer. Evidence using this model in medical education is still emerging.

> **Case Example of a Holistic Faculty Development Curriculum**
>
> A surgeon, Susan, must address the consistently unprofessional behavior of one of her residents, Tina. Susan has never before performed this task, and her learning goal is to address unprofessional behavior in a resident.
>
> *Step One*. Susan would undergo a step-by-step breakdown of this complex task:
>
> A. Brief, clear summary of the scope of the problem and underlying theory to frame the process
> B. Demonstration of key components, e.g., a web-based module showing the important steps of assessing unprofessional behavior and coaching by a remediation expert
> C. Availability of just-in-time information, e.g., a pocket card with the text of the Medical Professionalism Charter [30]
> D. Part-task practice experience arranged by a coach, e.g., interpreting and discussing a series of Defining Issues Test (DIT-2) results and Professional Identity Essays reflecting typical and atypical variation in these measures (see Chap. 7)
>
> *Step Two*. Susan would then demonstrate increasing competence by performing the whole complex task repeatedly, applying the task to different situations (an ob-gyn resident who walked out of a difficult delivery, a hematology fellow who falsified research results), until she demonstrates the ability to assess and address unprofessional behavior at a consistently competent level as judged by her coach.

19.6 A Proposal to Support Effective Faculty Development for Remediation in "Communities of Practice"

O'Sullivan and Irby critique the current state of faculty development in medical education and propose that we move toward considering it as a "social enterprise" embedded in and tightly linked to the larger educational and clinical environments—rather than emphasizing individual events which take participants out of their daily experience. They argue that using more complex frameworks and moving away from episodic models of workshops and events, which tend to attract those least likely to benefit, will more likely lead to better patient outcomes [31].

A "community of practice" ("CoP") is a group of people deeply engaged in a joint enterprise to develop a shared social structure, common values, and shared resources and emerges from constructivist theory [32]. As proposed by O'Sullivan and Irby, effective faculty development ideally is embedded in important CoPs. We agree with this embedded strategy and incorporate the views of Holmboe et al., who call for developing a team of faculty development experts to raise the bar on faculty training in assessment [19] to propose that remediation practice should situate across two highly linked CoPs (Fig. 19.1). First, it overlaps the "education space," including leadership and administrative structures for educational programs across the continuum of medical training communities (undergraduate, graduate, and continuing education). Second, it overlaps the clinical workplace where training occurs. Remediation faculty development programs are situated in both communities and highly linked with the organizational cultures, available content expertise, and available learning resources. Relationships around this shared CoP must be strong to ensure the work is effective in ensuring clinical competence.

In conclusion, to expand our profession's capacity to engage in effective remediation in clinical skills and professionalism, we propose that:

1. A multidisciplinary interprofessional team of remediation experts is created through longitudinal fellowship or train-the-trainer models. Members of this team will coach others in their remediation work and lead remediation and faculty development efforts.
2. Institutions continue to conduct episodic small and large group events in the relevant communities of practice sparingly to define domains
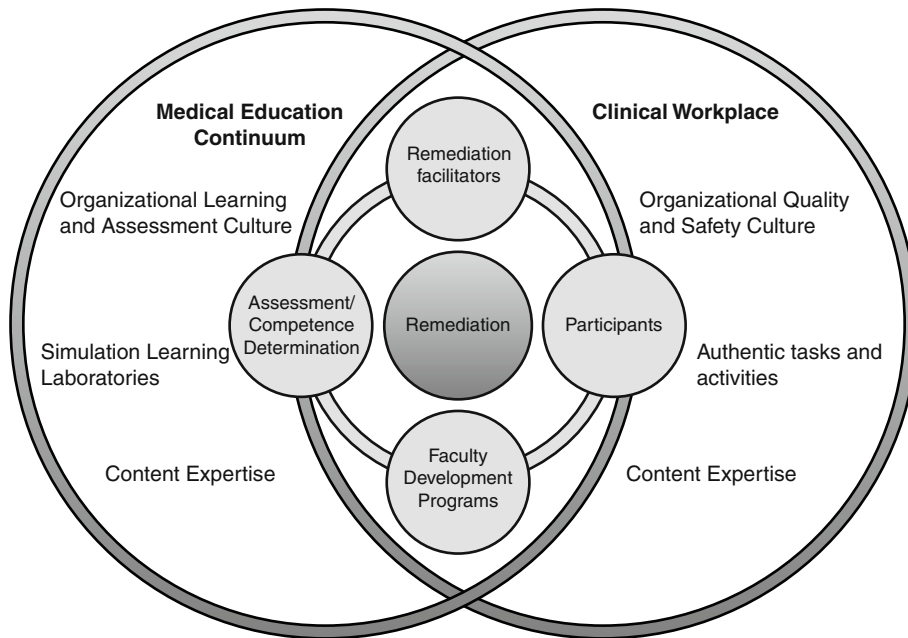
Fig. 19.1 This model for faculty development to support remediation suggests that remediation practice is embedded within two communities of practice: the clinical workplace and the educational space. The work of remediation requires interaction among facilitators, faculty development programs, assessment programs, and participants in remediation. The critical aspects of these communities of practice include organizational culture, the availability of practice opportunities, and content expertise. Strong relationships and alignments among these elements are needed to support effective remediation to maximize healthcare and educational outcomes. Adapted from O'Sullivan and Irby

of remediation practice and identify medical educators with a special interest in these domain (grand rounds, brief workshops).
3. Leaders garner institutional support for remediation including championing efforts and financial resources (see also Chap. 18).
4. Workplace learning strategies infuse remediation practice competence into authentic work environments.
5. Ongoing study of these efforts informs policy and best practices and makes faculty development relevant, efficient, and effective.

We agree with O'Sullivan and Irby's proposal that research in the domain of faculty development be conducted as "high-quality, thematic, sustained, and cumulative research programs using various methods, models and paradigms." We also support the call for approaches that are "incremental and cyclical" (see also Chap. 21).

19.7 Conclusion

Faculty development programs are outward signs of the inner faith that institutions have in their workforce.

—Bligh [33]

In a perfect learning environment, perhaps remediation activities would rarely be needed. The environment would be organized to support high-quality, excellent healthcare practice, centered on the needs of patients and communities served. Individual practitioners would be highly valued and held to clearly articulated high standards, agreed upon by all members of the CoP. We would all be expected to engage in continual and effortful expertise development (see also Chap. 1). From time to time each of us would be required to make a "course correction" and would do so without shame

and with the support of members of the relevant CoPs.

Until then, we must make certain that there are committed team members who identify and work effectively with those of us who do not meet professional standards. We must also develop the capacity in the systems of education and clinical practice to support remediation efforts. Faculty development programs would interact in overlapping CoPs to ensure awareness of learning and assessment theories, develop skills to work effectively with colleagues and trainees who are struggling, and to support courageous acts of judgment that ensure the excellence and safety of the healthcare enterprise.

References

1. Hatem CJ, Searle NS, Gunderman R, Krane NK, Perkowski L, Schutze GE, Steinert Y. The educational attributes and responsibilities of effective medical educators. Acad Med. 2011;86(4):474–80. doi:10.1097/ACM.0b013e31820cb28a.

2. Pratt DD, Arseneau R, Collins JB. Reconsidering "good teaching" across the continuum of medical education. J Contin Educ Health Prof. 2001;21(2):70–81. PMID: 11420868.

3. Kaufman D. Applying educational theory in practice. BMJ. 2003;326(7382):213–6. PMID: 12543841.

4. Kaufman D, Mann K. Chapter 2: teaching and learning in medical education: how theory can inform practice. In: Swanwick T, editor. Understanding medical education: evidence, theory and practice. 1st ed. Hoboken, NJ: Wiley; 2010. p. 446.

5. Coles CR. Evaluating the effects curricula have on student learning: toward a more competent theory for medical education. In: Nooman ZM, Schmidt HG, Ezzat ES, editors. Innovation in medical education: an evaluation of its present status. 1st ed. New York, NY: Springer; 1990. p. 452.

6. ten Cate O, Snell L, Mann K, Vermunt J. Orienting teaching toward the learning process. Acad Med. 2004;79(3):219–28. PMID: 14985194.

7. Bandura A. Social cognitive theory. In: Van Lange PAM, Kruglanski AW, Higgins ET, editors. Handbook of theories of social psychology, vol. 1. 1st ed. Thousand Oaks, CA: Sage; 2012. p. 556.

8. Dubin D. Rapid interpretation of EKG's: an interactive course. 6th ed. Tampa, FL: Cover Publishing Company; 2000. p. 368.

9. Mager R. Preparing instructional objectives. 3rd ed. Atlanta, GA: CEP Press; 1997. p. 197.

10. Vygotsky LS. Mind and society: the development of higher psychological processes. Cambridge, MA: Harvard University Press; 1978. p. 159.

11. Charlin B, Tardif J, Boshuizen HP. Scripts and medical diagnostic knowledge: theory and applications for clinical reasoning instruction and research. Acad Med. 2000;75(2):182–90. PMID: 10693854.

12. Eva KW. What every teacher needs to know about clinical reasoning. Med Educ. 2005;39(1):98–106. PMID: 15612906.

13. Bordage G. Elaborated knowledge: a key to successful diagnostic thinking. Acad Med. 1994;69(11):883–5. PMID: 7945684.

14. Croskerry P. A universal model of diagnostic reasoning. Acad Med. 2009;84(8):1022–8. doi:10.1097/ACM.0b013e3181ace703.

15. Yeager DS, Dweck CS. Mindsets that promote resilience: when students believe that personal characteristics can be developed. Educ Psychol. 2012;47(4):302–14.

16. Rogers C. On becoming a person: a therapist's view of psychotherapy. 3rd ed. New York, NY: Houghton Mifflin Harcourt; 1989. p. 420.

17. Rogers C, Freiberg HJ. Freedom to learn. 3rd ed. Upper Saddle River, NJ: Pearson; 1994. p. 352.

18. Collins A, Brown JS, Newman SE. Technical report no. 403: cognitive apprenticeship: teaching the craft of reading, writing and mathematics. Cambridge, MA: BBN Laboratories, Centre for the Study of Reading, University of Illinois; 1987. http://ocw.metu.edu.tr/pluginfile.php/9107/mod_resource/content/1/Collins%20report.pdf

19. Holmboe ES, Ward DS, Reznick RK, Katsufrakis PJ, Leslie KM, Patel VL, Ray DD, Nelson EA. Faculty development in assessment: the missing link in competency-based medical education. Acad Med. 2011;86(4):460–7. doi:10.1097/ACM.0b013e31820cb2a7.

20. Kalet A, Earp J, Kowlowitz V. How well do faculty evaluate the interviewing skills of medical students? J Gen Intern Med. 1992;7(5):499–505. PMID: 1403205.

21. Norman G. Research in clinical reasoning: past history and current trends. Med Educ. 2005;39(4):418–27. PMID: 15813765.

22. Norcini JJ, Blank LL, Duffy FD, Fortna GS. The mini-CEX: a method for assessing clinical skills. Ann Intern Med. 2003;138(6):476–81. PMID: 12639081.

23. Govaerts MJ, van der Vleuten CP, Schuwirth LW, Muijtjens AM. Broadening perspectives on clinical performance assessment: rethinking the nature of in-training assessment. Adv Health Sci Educ Theory Pract. 2007;12(2):239–60. PMID: 17096207.

24. Gingerich A, Regehr G, Eva KW. Rater-based assessments as social judgments: rethinking the etiology of rater errors. Acad Med. 2011;86(10):S1–7. doi:10.1097/ACM.0b013e31822a6cf8.

25. Searle NS, Thibault GE, Greenberg SB. Faculty development for medical educators: current barriers and future directions. Acad Med. 2001;86(4):405–6. doi:10.1097/ACM.0b013e31820dc1b3.

26. Steinert Y, Mann K, Centeno A, Dolmans D, Spencer J, Gelula M, Prideaux D. A systematic review of faculty development initiatives designed to improve teaching effectiveness in medical education: BEME guide no. 8. Med Teach. 2006;28(6):497–526.

27. Norman G, Dore K, Grierson L. The minimal relationship between simulation fidelity and transfer of learning. Med Educ. 2012;46(7):636–47. doi:10.1111/j.1365-2923.2012.04243.x.

28. Janssen-Noordman AM, Merriënboer JJ, van der Vleuten CP, Scherpbier AJ. Design of integrated practice for learning professional competences. Med Teach. 2006;28(5):447–52. PMID: 16973459.

29. van Merriënboer JJG, Kirschner P. Ten steps to complex learning: a systematic approach to four-component instructional design. 2nd ed. London: Lawrence Erlbaum Associates; 2013. p. 306.

30. Blank L, Kimball H, McDonald W, Merino J. ABIM foundation; ACP foundation; European federation of internal medicine. Medical professionalism in the new millennium: a physician charter 15 months later. Ann Intern Med. 2003;138(10):839–41.

31. O'Sullivan PS, Irby DM. Reframing research on faculty development. Acad Med. 2011;86(4):421–8. doi:10.1097/ACM.0b013e31820dc058.

32. Wenger E. Communities of practice: learning, meaning, and identity. Cambridge: Cambridge University Press; 1998. p. 336.

33. Bligh J. Faculty development. Med Educ. 2005;39(2):120–1. PMID: 15679676.

"The Prognosis Is Poor": When to Give Up

20

Jeannette Guerrasio

Defeat is not the worst of failures. Not to have tried is the true failure.

—George Edward Woodberry

Abstract

This chapter begins by defining the success and failure of remediation efforts through three case examples. The author proposes defining a successful remediation as both achieving minimum competency when compared to peers *and* demonstrating sustained improvement over a period of time. Because not all learners who enter remediation will meet these expectations, the author reviews practical and ethical limitations to remediation and a list of signs that remediation will not be successful and that it is time to stop. Documentation is crucial to convey learner's deficiencies, justify grades, remedial actions and dismissal, and to protect individuals and institutions from legal action. Comprehensive documentation guidelines and examples are provided. The meaning of the terms academic warning, focused review, and probation are compared and contrasted. Lastly, legal education is provided about due process for medical students and residents. When due process has been served and the institution's policies are applied without discrimination, the courts have repeatedly upheld academic and disciplinary decisions made by medical school faculty.

20.1 Defining Success

It is unlikely that all students who start medical school *should* graduate. While some might argue that success means that 100 % of students who require remediation eventually graduate from medical school, we assert that graduating incompetent medical students betrays our social contract with society, our colleagues, and our profession.

Currently, in the United States, only 4 % of medical students fail to graduate from medical school by 10 years after admission. In contrast, for students in doctorate, masters, or first-professional degree programs, after 10 years, only 62 % of the students had graduated, 15 % were still enrolled, and 23 % had left without a degree [1]. The medical school failure rate is 17 % in the Netherlands [2], 18 % in India [3], 21 % in Italy [4], and 60 % in Iran [5].

We propose that the success of remediation should be measured by achieving outcomes that

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ensure high quality and safe care for patients and best "fit" for the student. This means providing reasonable remediation to all underperforming students and graduating only those who can achieve and sustain competent and professional practice. Those who fail remediation should be redirected to appropriate careers better suited to their competence and skills. Instead of granting failing students a Doctor of Medicine (M.D.) degree, some medical schools reward the student for their time and investment with a Master's degree, if they successfully passed the preclinical courses. While an endless challenge to measure, it is essential to ensure that our graduates have earned their respective degrees. Research is needed to determine the educational predictors of quality patient care and student career satisfaction [6]. In the end, even with measures that have predictive validity, determination of competence is a judgment call, which requires experience and courage to make fairly (see Chap. 19). Consider the following three cases.

Cases
1. *At the completion of the first 2 years of medical school, which are primarily classroom based and nonclinical, **Jose** has passed all of his classes and USMLE Step 1 by 1 or 2 percentage points and is ranked at the bottom of his class. Halfway through his first clerkship, he is identified as struggling with clinical reasoning and referred for remediation.*
2. ***Abby** is a second year medical student who recurrently arrives late to required didactics and small group sessions, is rarely prepared for participation in her problem-based learning course and while she always completes her assignments on time, they reflect minimal effort. She consistently performs at the mean on all exams. She is placed on probation for poor professionalism and referred for remediation.*

3. ***Michael** aced his first 2 years of medical school, receiving honors in every course. This success fuels his arrogant and confrontational personality. Despite repeated feedback from faculty and peers, his behavior does not change. While his reputation for challenging interpersonal interactions worsened throughout the clerkship years, these concerns never appeared on his written evaluations. He continued to do well academically, graduated, and matched into a residency program. Early in internship, while on his way home from an "end-of-rotation" celebration, he is in a bike accident during which he sustains a closed head injury. After one week in the hospital, he recovered from the acute injuries and starts his second rotation. His unprofessional behavior and poor interpersonal skills continue on his return, and he is referred for remediation. During the remediation process, the team also notices that he is having difficulty processing information. It is unclear if this is new from his head injury or if this deficit was present during his medical school years.*

How would we determine success of remediation for each of these cases? Is it success if we ensure all three are competent to graduate and practice medicine regardless of the amount of time and resources it takes?

20.2 Determining Success

Upon completion of the remediation, it needs to be determined if remediation was a success and the student is back "on course" to becoming a competent physician. The criteria should be twofold:
1. Achieving minimum competency when compared to their peers
2. Demonstrating sustained improvement over a period of time.

Whenever possible, reassessment strategies should be recommended by the remediation team but performed by an unbiased group of evaluators who are not aware that the learner had deficits and underwent remediation.

Faculty members who participate in the remediation process find it difficult to remain unbiased. Engagement in remediation work is difficult, and most faculty members become the learner's advocate in the process. Occasionally, frustrations with the learner lead faculty to harbor very negative feelings about the student. Some learners, who may receive non-anonymous evaluations from faculty who did not know that the learner had deficits requiring remediation, may possess a false sense that they have received more accurate assessments, with decreased bias based on prejudged expectations of performance, friendship, gender, race, interpersonal relationships, and/or personal preferences [7–9]. Therefore, it is most fair when critical promotion decisions are based on data and discussed by a committee.

Cases

1. ***Jose*** *agrees to stop his inpatient internal medicine clerkship at the halfway point, to undergo 4 weeks of intensive clinical reasoning remediation, and then to return to the second half of the medicine rotation at a different hospital with a different team who is unaware of his prior struggles. He participates with enthusiasm in the remediation, and the new team gives him an average grade and positive comments on his clinical reasoning. He passes the end of clerkship OSCE, simulation lab exams, and the NBME subject exam. He then successfully passes all components of his pediatric and obstetric and gynecology clerkships. The evaluators of these rotations were also unaware of his prior struggles. His remediation is determined to be complete.*

2. *Based on previous experiences with similar students, the Promotions Committee*

*is not optimistic about **Abby**, and they decide to place her on probation. When Abby meets with the remediation team to discuss her tardiness, lack of preparation, and perceived minimal effort on written assignments, she admits for the first time that she is living at home with her mother, 17-year-old sister and her sister's 2-year-old twins. She shares responsibility for caring for the twins. With the assistance of the remediation team, Abby comes to understand that if she is going to complete medical school, she will need to focus on her education. The Student Affairs Dean helps her find an apartment and additional financial aid, and her fellow classmates pitch in to help her move. Relatives step in to assist the family. She works with the school's counselor to discuss her guilt over this change in her life. Once in her own apartment, she is never again late to school, attends all of her required and non-required classes, and always completes her assignments to the best of her ability. Overall, she is less exhausted, less stressed, and has honored an exam. Her remediation is determined to be complete after she has sustained her performance and professional behavior for one year, and the Promotions Committee returns her to good academic standing.*

3. ***Michael*** *undergoes 4 weeks of remediation of his unprofessional behavior and poor interpersonal skills, without improvement. Attempts to remediate his clinical reasoning also fail. Neuropsychiatric and drug and alcohol testing is recommended, but he refuses both and insists that he has made progress. In committee, the remediation team, the program director, and dean of graduate medical education decide together that it is time to reassess his skills to document whether he has made*

progress. On his next rotation, he received evaluations from faculty, residents, nurses, and patients, an observed structured clinical examination in the simulation lab, and two mini-clinical examinations conducted by his clinical attending. All evaluation methods identify impulsive, unprofessional behavior, poor interpersonal skills, and poor clinical reasoning. He receives a failing grade for this rotation.

20.3   Limits to Remediation

Societal costs of educating one medical student, without extra needs, may be as high as $1 million. Finding additional resources to ensure a competent graduate may be an uphill battle in many training settings. Therefore, limits to remediation vary, based on institutional culture, available resources, and patient safety risks as well as the student's efforts and abilities [10]. An institution with a mission that includes assisting all students to reach their maximal potential may be more willing to invest in remediation and make allowances. For example, they may provide the underperforming learner with needed schedule changes, extend resident contracts beyond the expected length of training, spend time training faculty members to mentor and teaching underperforming learners, provide salary support for such mentoring and teaching, afford access to remedial tools (such as books, review courses, and time to practice with standardized patients), grant additional supervision to prevent patient harm, and provide support to the healthcare team working with the underperforming student. Based on size, limited resources, or prior costly experiences with poor remediation outcomes, other institutions may be less willing or able to support remediation (see also Sect. 18.9 for discussion of resources needed).

The task of the excellent teacher is to stimulate "apparently ordinary" people to unusual effort. The tough problem is not in identifying winners: it is in making winners out of ordinary people.

—K. Patricia Cross

While there are no specific legal requirements to provide remediation to a struggling medical trainee, it is the opinion of the author that all students and residents who have made the financial and personal investment to enter medical school deserve early identification of deficits and remedial teaching when one is identified. It is unclear if this is the approach of all medical schools and graduate medical education programs. Additional research is needed to define the diversity of institutional perspectives. It appears that in the US context, dismissal is considered only after a valiant attempt at remediation fails (see box), patient safety is at eminent risk, or a crime has been committed.

Example of Failed Remediation

- Recurrent unprofessional behavior—when a cause cannot be elucidated and remediated [11]
- Egregious unprofessional behavior (first strike, you're out)
- Poor insight into deficits (e.g., inability to acknowledge failure to progress despite multiple warnings, direct feedback and attempts to help illuminate the situation)
- A learner that appears "not teachable," fails to progress at a pace that will allow the student to graduate is a reasonable length of time—either because of mental health disorders, physical health diseases, disability despite access to treatment or accommodations, or insufficient ability [12–14]
- Refusal to participate in remediation

20.4   When a Trainee Commits a Crime

While it is rare, physicians do commit crimes. In any large academic medical center, it is a predictable occurrence. Common crimes includes vandalism, theft, assault, rape, selling, buying or using illegal substances, "drunk and disorderly" behavior, and carrying or using unlicensed

firearms. Criminal activity does not fall under the jurisdiction of the educational remediation team and should be referred to law enforcement. Occasionally, especially when program directors are inexperienced, there are delays in making the distinction between an unprofessional and a criminal act.

Case

***Priya Gupta** was in the MD/PhD track throughout medical school. Between her preclinical and clinical years, she spent 8 years earning her PhD in immunology. When she rotated on the clinical services as a third year medical student, she routinely called nurses, introduced herself as Doctor Gupta, and gave verbal patient care or medication orders for patients. When confronted, she admitted to intentionally standing behind counters to obscure her short white coat (indicating she was a student) and portraying herself as a licensed physician to patients, nurses, and some consultants. She felt justified in doing these things because, "After all I am Dr. Gupta."*

Priya not only threatened patient safety and behaved frankly unethically by lying and deceiving, she committed a crime by impersonating a physician and practicing medicine without a license [15].

In this case, after further investigation of her behavior, the university and hospital lawyers met with the school of medicine deans and hospital risk management professionals. A decision was made to immediately terminate the student, and she was subsequently charged with a crime.

The cases of Michael and Priya each illustrated several risk factors for poor remedial effectiveness. Such cases are significant and warrant discussion; however they make up less than 2 % of all learners referred for remediation [16].

20.5 Documentation

Documentation of remediation efforts is essential. It is needed to convince a student or resident that they have a deficiency [17], it gives the remediation team information to build a remediation strategy, and it can be used to justify grades, remedial actions, and dismissal. It also protects individuals and institutions from legal action. Even if the learner has only a minor deficit to remediate, documentation must be thorough since it is impossible to predict who will not succeed, choose to appeal an academic decision, or file a lawsuit.

From a legal perspective, institutional policies must be followed. Each institution maintains policies and procedures regarding struggling students and residents. There are no official recommendations from medical societies regarding documentation (see Sect. 18.10). In order for institutions to defend decisions to change a learner's status (e.g., probation or dismissal), institutions should have very clear guidelines that set the expectations for competent performance against which a student's performance can be judged (see also Chap. 1).

20.5.1 Expected Performance

Documentation of expectations for competent performance for all students and residents should include written goals and objectives, defined performance targets, grading policies, and consequences for failure to meet expectations, which may also include an outline of the procedures for remediation, probation, and dismissal [12, 18]. Expectations should be created for individual courses and clerkships as well as for each academic year. Increasingly useful, consensus competency frameworks have evolved over the past decades. Educators have been assisted in defining objectives for remediation in increasingly sophisticated ways, by the work of the ACGME core competencies and Milestones project. More recently, ten Cate and Scheele [19] introduced the concept of "entrustable professional

activities" (EPAs) to bridge the gap between theoretical competencies and actual clinical practice, by assessing residents on the routine professional activities of physicians based on their specialty and subspecialty. As we "flesh out" EPA frameworks, they will be increasingly useful as a guide to define course and academic year end-objectives (see also Chap. 1).

20.5.2 Identification of Deficits

In order to document that a learner is underperforming, the course director should compile verbal comments, e-mail communications, and written evaluations, as well as assessments from multiple sources and place them into the student's or resident's academic record. (See also Chaps. 17, 18.) *Documentation of comments regarding a learner's performance is as valid for making academic decisions as written evaluation forms.* Each document should include the date of observation or identification of deficit(s), who made the observation, and specific examples of objective behaviors or actions that highlight the deficiency or deficiencies. The documentation should also address whether or not feedback was given to the learner. If there is concern that the learner is performing poorly and a change in status is considered (e.g., letter of warning, focused review or probation) proof that feedback was given to the learner is important. This can be accomplished with a follow-up e-mail after verbal feedback, written feedback, or by having a witness present during verbal feedback. Chief residents often serve this function well.

Subjective impressions of the learner's behaviors and actions may be included in the documentation. Care should be taken to ensure that any subjective impressions be written with respect toward the learner and separated from the objective observations [20].

The program or course directors are allowed to use informal networks to collect information [21]. The director should keep a summary of each meeting held to discuss the learner's academic progress, with date and list of attendees [20],

documented decisions to share performance difficulties with upcoming faculty and the reasoning behind the decisions, and notes if the learner was notified [20, 21].

> **Case**
>
> ***Michael's academic record includes the following information:***
>
> - *Documentation that all residents (including Michael) received directions on how to access expectations for competent performance for each rotation and residency level.*
> - *A dated e-mail from a faculty member reporting that Michael's interpersonal skills and professionalism are poor, which included, "Michael often brags about his grades in front of other residents. Whenever residents in conference are discussing a case, he interrupts the conversation to shout out the answer and follows with a comment about how easy the cases are… this behavior continues despite two separate conversations with me, during which I gave him respectful but direct feedback and clearly told him he needed to stop."*
> - *A dated e-mail from another faculty member reporting that Michael doesn't let his simulation lab partner participate, because he states "he can do a better job."*
> - *Notes documenting unsolicited feedback by the resident's clinic preceptor. In the conversation, the preceptor expressed that "Michael continues to interrupt her while she is speaking with patients, to provide advice that is often incorrect… confronts her about patient care decisions in front of patients… uses inappropriate jargon, and is arrogant with patients, often talking to them as if they are children, e.g., 'you are supposed to exercise. Do you know what that means?'"*

- *There were four meetings with the resident and his advisor, dated and documented by the advisor with follow-up e-mails summarizing the conversations and consequences of ongoing difficulties. The e-mails also contained a list of recommended resources to assist with these skills. Michael acknowledged having received each summary e-mail.*
- *A letter from Michael requesting an excused absence to recover from his bicycle accident.*
- *A letter granting his request.*
- *A current grade transcript.*
- *A documented conversation between a peer and the Dean of Graduate Medical Education, in which the peer reported that Michael had been drinking alcohol excessively outside of work.*
- *Two additional e-mails from his rotation attending describing Michael's inability to work with the other residents and students on his team. "Michael often interrupts the other intern's presentation with additional information... He is not respectful of the other residents' time with his frequent interruptions, and when he volunteers to help the team, he says he wants to help because he can get the work done faster."*
- *A dated e-mail referring him to the remediation team, letting Michael know that they will be given access to his entire academic record.*

As with the reassessment, documentation is best if it comes from multiple sources and is as objective as possible.

20.5.3 The Remediation Plan

When developing a remediation plan, it is recommended that the following elements are documented: the deficit or competency being addressed, a specific description of the behaviors or actions of concern, the time frame for remediation, the specific plan, and the objective measures that will be used to assess the deficit post remediation. Be sure to document the date that the plan was communicated to the learner, and provide either written evidence or a witness to a verbal conversation who can attest that the plan was communicated to the learner (Figs. 20.1 and 20.2) [12].

20.6 Focused Review and Academic Probation

Focused Reviews are not considered disciplinary and therefore not reported to outside reviewers.

Due to requests from some licensing boards, insurers and credentialing agencies that medical schools and residency programs notify them if an applicant had received prior warnings, disciplinary actions or academic probation, there has been a shift toward more careful labeling of early remediation efforts. For instance, training programs have started using the term *focused review* rather than *academic warnings* for initial remediation efforts. However, there is little standardization. Programs vary widely on when they place students and residents on focused review or probation—after a single failed exam or competency, egregious event, or after failed remediation. Probation has traditionally been reserved for unprofessional behavior, but it should probably used for other types of incompetence [16]. When a learner is placed on either focused review or probation, no longer considered to be in good academic standing. At the point of this status change, they should receive a letter containing the information listed in the box on page 332. This letter should be copied to the learner's file. Such decisions should always be made by a committee rather than an individual to ensure appropriate treatment of the learner. Focused reviews are internal to the

University School of Medicine
Remediation Program

Sent by certified mail:

Dear Michael Miller,   Date: 7/17/2022

Based on review of your entire academic record, you were referred for remediation of interpersonal skills and professionalism, which were determined to be below expectations. Specifically, your deficits included interrupting the learning of others, demeaning comments to peers about assignments, confronting supervisors about decisions regarding patient care, providing patients with incorrect information, using jargon with patients, and not respecting others' roles.

Per the program director, you will have 4 weeks to complete the remediation plan. As per our discussion, the remediation plan will include:

- Assigned reading on clinical and team based communication skills.
- 2 written assignments, no less than 500 words with 5 literature references, describing how interpersonal communication skills and collaboration can facilitate or hinder patient care.
- Weekly, 1-hour sessions with the coach assigned to you to discuss and analyze past and present examples of your behavior on clinical teams, comparing perspectives and perceptions of each party involved and listing alternative methods of handling the situation.
- 2, 2-hour sessions in the simulation lab practicing communication tasks with actors playing other team members or patients, reviewing video recordings and feedback from actor and nurse trainer, and repeated exercises incorporating feedback.
- Submit the videotapes from those sessions.
- Discuss, with program director the short term and long term consequences of confrontational and disrespectful behaviors on clinical teams.

At the conclusion of the 4-week period, you will be placed on a 2-week rotation with a team that is unaware of your prior deficits and need for remediation. At the end of the rotation, you must meet the expectation for competent performance on multisource evaluations from faculty, residents, nurses, and patients, pass an observed structured clinical examination in the simulation lab, and pass two mini-clinical examinations conducted by your clinical attending.

If you meet this benchmark, you will pass the rotation and be allowed to proceed with your remaining intern year. At anytime during the remediation process or reassessment, this plan may be altered, your remediation and reassessment interrupted, or you may be referred to the promotions committee. If you do not meet these benchmarks, you may be required to repeat the rotation or be dismissed from the residency program.

It is our hope that you will make the necessary changes to be successful in our course.

Sincerely,
Jon Jones, MD
Program Director
Adam Addisons, MD
Assistant Program Director
Remediation Team

Fig. 20.1 The letter sent to Michael by certified mail outlining the remediation plan. Three weeks later, this letter was sent to Michael from the remediation team

University School of Medicine
Remediation Program

Dear Michael Miller;   Date 8/7/2022

The remediation team is now concerned that you are struggling with clinical reasoning. This was identified during direct observation of your interpersonal skills and participation on rounds and confirmed on chart review. This was discussed with you and your course director.

As per the remediation team, the plan addresses your interpersonal skills and professionalism deficits and incorporates some introductory remediation steps to help with your clinical reasoning, such as teaching you a framework for building a differential diagnosis. The team reports that you have not been making progress in any of these areas.

The remediation team would strongly recommend that you undergo neuropsychiatric testing to help you and us, determine if your recent head injury is impacting your ability to learn new skills. We are also recommending to the institution that you undergo alcohol and drug monitoring as this can also impair performance.

Our recommendations have been cc'd to the Dean of Graduate Medical Education.

Sincerely,
Sarah Smith, MD
James Jackson, MD
Lynn Lyons, MD
Carol Crabtree, PsyD
Remediation Team

cc. Steven Stone MD, Program Director, Linus Li, MD, Chair of the Residency Review and Education and members of the Residency Review and Education Committee

Fig. 20.2 The letter sent to Michael by certified mail informing him that there were new concerns about his competence and new expectations for the remediation plan

institution and are not reported to future residency programs, employers, credentialing agencies, insurers, etc. (see also Chap. 18). Academic probation is reported when specifically requested (Fig. 20.3).

Letter Informing Learner of Change in Academic Status

- Promotions committee meeting date(s) when the decision was made to change the academic status from good to focused review

- Date that the status change will take effect
- Deficit(s) or competencies to be remedied
- Summary of the information that led to the decision, including source of information, assessment technique, and format such as written, or verbal
- Date when the learner's status will be reassessed, typically 90 days after change in status
- Performance or actions required to reverse the change in academic status, and how that will be measured
- Consequences for achieving or failing the reassessment

(continued)

University School of Medicine
Remediation Program

Dear Michael Miller;,   Date: 9/17/2022

On 9/1/2022, you were reported to the Residency Review and Education Committee. After reviewing your entire academic record, you were invited to appear before the committee. You were given an opportunity to contest the results of the outcome of the remediation and comment on why you have refused neuropsychiatric testing and alcohol and drug monitoring.

This letter serves as an official notification that your academic status has changed from good standing to probation, effective 9/17/2022. You are being placed on probation because of serious concerns related to interpersonal skills, professionalism and clinical reasoning. This action is based on interrupting the learning of others, obstructing patient care, providing patients with incorrect information, in appropriately confronting residents and attending about patient care judgments, continuing to use jargon with patients, demonstrating poor clinical reasoning on rounds and in your notes. This information was collected from your evaluations, chart review, direct observation, e-mails and verbal conversations with supervising faculty.

The following conditions must be met for your status to return to "good academic standing"

- Continue working with the remediation team to remedy these deficits in interpersonal skills, professionalism, and clinical reasoning. Their recommendations may include changes in your schedule, repeating courses, additional reading, additional assignments, practice time in the simulation lab, direct observation, increased supervision, and frequent feedback.
- Be evaluated by the Physician's Health Program, which will include alcohol and drug monitoring, AND sign a release of information for them to communicate their findings to the Residency Review and Education Committee.
- Repeat the rotation you failed, and achieve a passing score on all components.
- Maintain passing grades in all subsequent assignments.
- Return a signed copy of this letter to your program director and the Chair of the Residency Review and Education Committee

In 90 days from your change in status, the Residency Review and Education Committee will re-evaluate your performance and determine whether to return you to good academic standing, continue your probationary status or dismiss you from medical school. Failure to meet all of the above requirements by the time of re-evaluation by the Promotions Committee may result in dismissal. The Promotions Committee reserves the right to re-evaluation your progress and/or change your status prior to 90 days. Please see the medical school policies manual for additional details about the process.

It is also my duty to inform you that in the future you must inform licensing boards, credentialing agencies and malpractice insurance organizations of your probationary status. This is part of your official academic record.

- You are not permitted to attend away electives or to moonlight while on probation.
- It is our genuine hope that you complete the actions required of you as stated above and return to good standing and a positive learning environment.

Sincerely,
Steven Stone MD
Program Director
Linus Li, MD
Chair of the Residency Review and Education
Alejandra Garcia, MD
Vlad Levin, PhD
Mario Martelli PhD
Residency Review and Education Committee

Alejandra Garcia, MD
Vlad Levin, PhD
Mario Martelli PhD
Residency Review and Education
Committee Members

I have received a copy of this document. I understand the actions required of me.

Signature _____   Date: _____

Fig. 20.3 The letter sent to Michael informing him of a change in his academic status and the requirements of probation

Case

Following 4 weeks of remediation, Michael failed his reassessment. The Residency Review and Education Committee of the medical center reviewed his entire academic record. He was then invited to appear before the committee to present his grievances. The promotions committee decided to forego a warning or focus review and instead placed him directly on probation because of his rotation failure, failure to progress, and his refusal of neuropsychiatric testing and alcohol and drug monitoring.

Focused review and probation letters serve as comprehensive documentation that the student was notified of their deficiencies. Even if the learner refuses to sign the letter, as long as there is proof of receipt or a witness to attest that the information was given, it serves as legal proof of notification. In addition, minutes should be taken and kept for all promotions committee meetings discussing the student or resident of concern.

20.7 Legal Concerns

Medical students and residents are more likely to resort to grievance committees and the judicial system today than in the past [22–24]. Of those who sued their medical school, 96 % did so because of dismissal, admission, cheating, and retaking work [23, 24]. Faculty and institutions should be prepared to defend their professional judgment [12, 25, 26]. Although legal threats can be chilling, proper education about the legal system and understanding of legal precedent helps faculty members respond effectively and participate in remediation with integrity.

20.7.1 Due Process

Every institution has detailed policies on the rights of students and residents to request a hearing and appeal decisions. Be sure to adhere to your institution's policies and use the following information for additional understanding of the legal system as is applies to failing students and residents [20]. There are no official recommendations available from medical societies regarding due process for dealing with underperforming students. Most of the information below is based on legal precedent.

There are two forms of action taken against students: academic and disciplinary. Academic actions involve the student's academic and clinical performance. Disciplinary dismissals involve violations of institutional rules and policies [21]. This section will address academic actions only.

To begin, it is important to know that the laws vary slightly between public and private institutions. In order for an institution to be considered private according to the laws regarding student evaluation, they may not receive any federal subsidies or act under the state's support or influence. Medical schools must have no federal or state connection to be considered private.

If the medical school is public, then students are protected under the 14th Amendment, which protects property and liberty interests and requires the right of procedural due process. This means that the learner must be notified of the deficiencies, a warning of potential consequences, and given adequate time to prepare prior to an opportunity for a hearing to air grievances and share his or her own perspective. The date and time of the hearing is usually provided at the time of the notification of failure. While learners should be allowed to have a witness present for the hearing, attorneys may be denied access to these proceedings.

Private institutions, according to the definition above, are only required to provide adequate notice of charges and an opportunity for the student to respond. Private institutions are not required to hold a hearing, and the learner's response can be in writing [27]. Your institutional policies should reflect these requirements. Regardless of private or public institutional status, an appeals process is not required for due process, though it is recommended [21].

In a 1982 case, Heisler v New York Medical College, a student was permitted to repeat the

first year of medical school after three other freshmen with equally poor academic records were permitted by the college to repeat the year [28]. Faculty members and institutions may however dismiss a student even if students in past years have not been dismissed for similar deficits [29]. The courts do not mandate that all students be treated exactly alike [22]. Of note, faculty members are allowed to evaluate underperforming students in greater depth than other students, can modify their training as needed, *and can alert future faculty that the student is struggling so as to enhance remediation efforts* [30].

20.7.2 Forward Feeding of Information

While sharing information about learners who have required remediation with subsequent course of clerkship faculty—"forward feeding"—is legal, this practice remains controversial. While approximately 64 % of clerkship directors feel that they should share information with other clerkship directors regarding struggling students, only about half do so. As of 2008, only 14 % of institutions had written policies on this issue [31]. Future research is needed to determine whether forward feeding information about underperforming learners aids in the implementation of remediation plans and improves the learners overall success, or if the learner is subjected to the "Rosenthal Effect" and then becomes more likely to fail [32]. The Rosenthal Effect was described in the Oak School experiment, where teachers were told that certain elementary school students were more likely to demonstrate higher rates of intellectual growth and development than others. These students, in fact, had no such advantage as they had been randomly selected. The students with the higher expectations showed significantly greater gains in intellectual growth than did those in the control group.

20.7.3 The Legal Principles

As described by Irby and Milam, if the courts deem that the institutional rules follow the appropriate due process requirements, that the institution followed its own rules, and that the procedures were equally applied to all students in a similar situation, then the courts follow three legal principles that preferentially support academic institutions: 1) judicial deference to the professional academic judgment in reviewing the entire medical record of the student's performance, 2) judicial support of reasoned academic decision-making, and 3) judicial non-intervention [21, 22].

20.7.3.1 Principle One

Judicial deference to the professional judgment in reviewing the entire medical record of the student's performance.

Courts will not reverse a decision if the decision is based on faculty members' professional judgment as long as the faculty reviewed the student's entire academic record. "Entire academic record" is not clearly defined. However, it would be reasonable to review records from matriculation to the current academic action.

> *When judges are asked to review the substances of a genuinely academic decision… they should show great respect for the faculty's professional judgment* [33].

20.7.3.2 Principle Two

Judicial support of reasoned academic decision-making.

This means that the faculty decision cannot be arbitrary or capricious. It would be the student's responsibility to demonstrate that the decision makers disregarded the facts in their academic record and that the decision was irrational and unreasonable [21, 22].

> *Where there is room for two opinions, action is not arbitrary nor capricious when exercised honestly and upon due consideration even though it may be believed that an erroneous conclusion has been reached* [34]

Regardless of the correctness of the decision, as long as it is reasoned, then courts will uphold the decision.

Commonly, an underachieving student or resident will receive a combination of pass and low

pass scores on their written evaluations, and recurrent marginal passing performances on exams. Of note, they may receive a failing grade for the course and even be dismissed by the chair of the department, grading committee or promotions committee. As long as the decision is based on the entire record, courts in the past have upheld that the decision was not arbitrary or capricious, given that evaluators are rare to assign failing grades to students with unsatisfactory performance [35].

20.7.3.3 Principle Three
Judicial nonintervention.

Courts will not overturn faculty decisions unless there is clear evidence of arbitrary and capricious action.

> *University faculties must have the widest range of discretion in making judgment as to the academic performance of students and their entitlement to promotion or graduation* [36]

> *A medical school must be the judge of the qualification of its students to be granted a degree. Courts are not supposed to be learned in medicine and are not qualified to pass opinions as to the attainments of a student in medicine* [37]

20.7.4 Other Legal Concerns

Students and residents have also sued faculty members for libel; however, the court has found that negative evaluations are not defamatory, if documentation is shown only to those who need to know and the statements made are relevant to the evaluation. Also the courts have noted that students and residents give implied consent for evaluations to be used by the school or program when they enter an academic institution [38].

Medical schools are in charge of monitoring their students and can be held liable for their behavior [15]. If a student is a threat to self or others, the school may act immediately by suspending the student pending a fair determination of competency and fitness for duty [27]. Fitness for duty evaluations are usually conducted by a

psychiatrist and/or medicine doctor and are usually offered by individual state's Physician Health Program. A student or resident may be determined fit for duty and safe for returning to the academic environment or unfit for duty for any of the following reasons:

- The learner cannot continue caring for patients safely
- The learner is not capable of learning given the circumstances
- The learner is a danger to him or herself or others
- The learner is greatly impeding the learning environment for other residents and students
- The learner cannot continue to teach his or her peers and students, if that is part of the learner's role

Residents can also be removed from the clinical environment pending a formal assessment, but they will likely need to use their sick and vacation time, while still being paid.

At the residency level, a leave of absence can be strongly suggested to the struggling resident, or it can be a condition of contract renewal.

20.7.5 Residents: Students or Employees?

The Supreme Court addressed dismissal procedures for medical students in the case of University of Missouri v. Horowitz. Since then, resident dismissals have been treated the same as students, and the same academic procedures and information apply. Despite the fact that residents are also employees, the courts have classified them as students. Of note, contract law applies to the resident's employment contract. Depending on the wording of the contract, some institutions have had to buy out the resident's contract when dismissing them [24]. Many residency programs have moved to yearly contracts, allowing them to deny a resident's contract renewal prior to completion of the program to avoid these conflicts. It is always easier to deny residents their contract renewal than to dismiss them mid-contract. While waiting for a contract to expire, the resident may

have their rotations changed to non-clinical or customized rotations.

20.7.6 What If You Get Sued?

If a resident or student does sue you or your institution, first acknowledge, reflect on and manage your own emotions and second, seek institutional or personal counsel and accept that legal actions will require time and energy to address. Medical schools and residency programs have lawyers to assist faculty and committees to ensure that they are following the school's policies. Consult them early in the process.

Advice for Educators Called to Testify in a Hearing, Trial or to Give a Deposition

- Arrive prepared, having read all of the evidence
- Do not discard or alter any documentation or evidence, including e-mails, file, letters, recordings, etc.
- Always tell the truth directly and do not alter your responses based on the desired outcome.
- Do not guess or speculate.
- Be sure that you understand the question being asked. If you do not, ask for a clarification.
- Answer only the question that is asked and do so concisely.
- "I don't know" and "I don't remember" are acceptable responses
- Speak to your audience (lawyers and judges) as you would speak to your patients, as they are not medically trained and likely not familiar with medical education and terminology.
- Discuss one issue at a time.
- Maintain your credibility as a professional in your dress, responses and actions at all times, as attempts may be made to discredit you.

Case

Michael was evaluated by the Physicians Health Program. While he completed the alcohol and drug-monitoring program without incident, he refused their recommendations for psychotherapy. He never acknowledged that he had interpersonal skills problems, struggles with professionalism, and poor clinical reasoning. Overall, he failed to progress. He continued to maintain that he was a leader among his peers. After much debate, the Residency Review and Education Committee decided not to renew his yearly contract. Despite an initial fear of litigation, Michael never sought legal action. Two years later, he requested a letter of recommendation from the residency program director, so that he could apply for another residency position. With the support of the Committee, the program director wrote a very honest and frank letter about his strengths and weaknesses, including why his contract had not been renewed.

20.8 Summary

In summary, trainees are dismissed from medical school or residency training programs. This is usually preceded by a carefully documented and rigorous attempt at remediation. When due process has been served and the institution's policies are applied without discrimination, the courts have repeatedly upheld academic and disciplinary decisions made by medical school faculty. *Students and residents rarely win lawsuits*. The US Supreme Court has ruled on multiple occasions that it will defer to academic decisions made by institutions of higher education. Of note, the same deference is not provided for disciplinary decisions. With regards to academic decisions, public institutions must provide constitutional due process, and private institutions may create and follow their own rules and policies. Universities and hospitals have historically

not been harmed by detailed evaluations of learner's deficiencies. Our job is to hold the learner accountable for their responsibilities and to point out the need for improvement as it arises.

20.9 Resources for Remediators

- Katz ED, Dahms R, Sadosty AT, Stahmer SA, Goyal D; CORD-EM Remediation Task Force. Guiding principles for resident remediation: recommendations of the CORD remediation task force. Acad Emerg Med. 2010 Oct;17 Suppl 2:S95–103. DOI:10.1111/j.1553-2712.2010.00881.x.
  The Council of Emergency Medicine Residency Directors created a task force to compile best practices in remediation. This paper is a summary of their research, discussions and it provides guidelines for all programs regardless of specialty.

- Irby DM. Milam S. The legal context for evaluating and dismissing medical students and residents. Acad Med. 1989; 64(11):639–43.
  This paper addresses the legal concerns of many faculty educators by describing in more detail the legal decisions of prior medical student lawsuits. It provides reassuring information regarding the legal process and its support of academic institutions.

References

1. Garrison G, Mikesell C, Matthew D. Medical school graduation and attrition rates. Anal Brief AAMC. 2007;7(2):1–2.
2. Schmidt HG, Cohen-Schotanus J, Arends LR. Impact of problem-based, active learning on graduation rates for 10 generations of Dutch medical students. Med Educ. 2009;43:211–8. doi:10.1111/j.1365-2923.2008.03287.x.
3. Abraham RR, Ramnarayan K, George BM, Adiga I, Kumari GR, Suvarna N, Devi V, Lakshminarayana SK, Mamot MB, Jamil WNBW, Haripin NBA. Effects of problem-based learning along with other active learning strategies on short-term learning outcomes of students in an Indian medical school. Med Educ. 2012;1(2):98–103. doi:10.4103/2278-344X.101703.
4. Curtoni S, Cavallo F. International perspective. Basic Sci Educ. 1998;9(3):22.
5. Mohammadi A, Mojtahedzadeh R, Karimj A. National educational stratification of medical schools in Iran. J Med Educ. 2006;9(1):55–61.
6. Kalet al, Gillespie CC, Schwartz MD, Holmboe ES, Ark TK, Jay M, Paik S, Truncali A, Hyland Bruno J, Zabar SR, Gourevitch MN. New measures to establish the evidence base for medical education: identifying educationally sensitive patient outcomes. Acad Med. 2010;85(5):844–51. doi:10.1097/ACM.0b013e3181d734a5.
7. Whitelegg D. Breaking the feedback loop: problems with anonymous assessment. Planet. 2002;5(3):7–8. doi:10.11120/plan.2002.00050007.
8. Jae H, Cowling J. Objectivity in grading. Coll Teach. 2009;57(1):51–5.
9. Wachtel HK. Student evaluation of college teaching effectiveness: a brief review. Assess Eval High Educ. 1998;23(2):191–212.
10. Roberts NK, Williams RG. The hidden costs of failing to fail residents. J Grad Med Educ. 2011;3(2):127–9. doi:10.4300/JGME-D-11-00084.1.
11. Papadakis MA, Teherani A, Banach MA, Knettler TR, Rattner SL, Stern DT, Veloski JJ, Hodgson CS. Disciplinary action by medical boards and prior behavior in medical school. N Engl J Med. 2005;353(25):2673–82. PMID: 16371633.
12. Katz ED, Dahms R, Sadosty AT, Stahmer SA, Goyal D, CORD-EM Remediation Task Force. Guiding principles for resident remediation: recommendations of the CORD remediation task force. Acad Emerg Med. 2010;17 Suppl 2:S95–103. doi:10.1111/j.1553-2712.2010.00881.x.
13. Lupien SJ. Stress-functions-morphology correlations in the brain. In: McGraw-Hill Editorial Staff. Yearbook of science and technology. New York: McGraw-Hill Professional Publishing; 2003.
14. Lupien SJ, McEwen BS. The acute effects of corticosteroids on cognition: integration of animal and human model studies. Brain Res Brain Res Rev. 1997;24(1):1–27. PMID: 9233540.
15. Capozzi JD, Rhodes R. Decisions regarding resident advancement and dismissal. J Bone Joint Surg Am. 2005;87(10):2353–5. PMID: 16203903.
16. Guerrasio J, Aagaard E. Medical students and physicians referred for remediation. Poster session presented at Society of General Internal Medicine (SGIM). 36th Annual conference of the society of general internal medicine, Denver, CO; 2013.
17. Yao DC, Wright SM. A national survey of internal medicine residency program directors regarding problem residents. JAMA. 2000;284(9):1099–104. PMID: 10974688.
18. Tulgan H, Cohen SN, Kinne KM. How a teaching hospital implemented its termination policies for disruptive residents. Acad Med. 2001;76(11):1107–12. PMID: 11704510.

19. ten Cate O, Scheele F. Competency-based postgraduate training: can we bridge the gap between theory and clinical practice. Acad Med. 2007;82(6):542–7. PMID: 17525536.

20. Cox SM, Goepfert A, Hicks P, Clinchot DM, Lynn DJ. Working with students with difficulties: academic and nonacademic, chapter 10. In: Fincher RME, Cox SM, DaRosa DA, Lynn J, Margo K, Morgenstern BZ, Pangaro LN, Sierles FS, editors. Guidebook for clerkship Directors. 3rd ed. Omaha, NB: Alliance for Clinical Education; 2005. p. 343–64. http://familymed.uthscsa.edu/ace/pdf_chapters/Guidebook_Chp10.pdf. Accessed 3 July 2013.

21. Irby DM, Milam S. The legal context for evaluating and dismissing medical students and residents. Acad Med. 1989;64(11):639–43. PMID: 2803418.

22. Wren KR, Wren TL. Legal implications of evaluation procedures for students in healthcare professions. AANA J. 1999;67(1):73–8. PMID: 10488280.

23. Minicucci RF, Lewis BF. Trouble in academia: ten years of litigation in medical education. Acad Med. 2003;78(10 Suppl):S13–5. PMID: 14557083.

24. Helms LB, Helms CM. Forty years of litigation involving medical students and their education: I. General educational issues. Acad Med. 1991;66(1):1–7. PMID: 1985667.

25. Short JP. The importance of strong evaluation standards and procedures in training residents. Acad Med. 1993;68(7):522–5. PMID: 8323637.

26. Bellocq JA. Student dismissal: part I—how much documentation is enough? J Prof Nurs. 1988;4(3):147, 230. PMID: 3417941.

27. Grieger CH, Shemonsky NK, Driscoll 3rd RE. Graduate medical education and the law. J Med Educ. 1984;59(8):643–8. PMID: 6748031.

28. Levinson H, Rosenthal S. CEO: corporate leadership in action. New York: Basic Books; 1984. p. 308.

29. Regents of the University of Michigan v. Ewing, 474 U.S. 214, 227–28, 106 S.Ct. 507, 514–15, 88 L.Ed.2d 523 (1985).

30. Shuffer v. Board of Trustees, 67 Cal. App. 3d 208,220, 136 Cal. Rptr. 527,534. 1977.

31. Frellsen SL, Baker EA, Papp KK, Durning SJ. Medical school policies regarding struggling medical students during the internal medicine clerkships: results of a national survey. Acad Med. 2008;83(9):876–81. doi:10.1097/ACM.0b013e318181da98.

32. Rosenthal R, Rubin DR. Interpersonal expectancy effects: the first 345 studies. Behav Brain Sci. 1978;1(3):377–86. doi:10.1017/S0140525X00075506.

33. Regents of the University of Michigan v. Ewing, 474 U.S. 214, 225, 106 S.Ct. 507–509, 88 L.Ed.2d 523 (1985).

34. McDonald v. Hogness, 92 Wn. 2d 431, 447, 598 P 2d 717, 797. 1979.

35. Stoller v. College of Medicine, Hershey Medical Center, 562 F. Supp. 403, 413 (M.D. Pa. 1983).

36. Board of Curators of the University of Missouri v. Horowitz, 435 U.S. 78, 98 S. Ct. 948,958 35.n.6. 1978.

37. Regents of the University of Michigan v. Ewing, 474 U.S. 214, 225, 106 S.Ct. 507, 513, 88 L.Ed.2d 523 (1985).

38. Kraft v. William Alanson White Psychiatric Foundation, 498 A.2d 1145–1149 D.C. App. 1985.

A Research Agenda for Remediation in Medical Education

21

Calvin L. Chou, Adina Kalet, and Karen E. Hauer

Abstract

The evidence base underlying remediation in medical education is limited but growing rapidly as better competency-based assessments allow us to identify increasing numbers of struggling learners. In this chapter the authors frame a research agenda for remediation in four major areas: *diagnosis of learner deficits*, *strategies for remediation*, *outcomes of remediation*, and *faculty development*. They briefly review the key issues within each area and identify questions that need to be addressed through further research. Finally, they frame a research agenda, call for a coordinated multi-institutional approach to address this pressing educational need, and identify emerging domains where research questions and opportunities are likely to arise.

21.1 Introduction

This book describes the current state of affairs in the field of remediation in medical education. The existing literature and extensive experience of this diverse group of authors reinforce that the topic is of great interest to clinical teachers, education leaders across the continuum of health professions training, and learners who struggle to stay on course. A recent review of the literature highlights the growing urgency for useful evidence to guide remediation practice and improve outcomes. Cleland et al. identified 24 high quality studies of remediation interventions in medical education; strikingly, half of these were published since 2009 [1]. There are two major critiques of the overall remediation literature. First, reported remediation interventions are often misguided, focusing on workload reductions without concomitant increases in coaching, rather than specifically diagnosing the learner's challenges and designing remediation strategies accordingly [2]. Secondly, although guided by the best of intentions, this emergent literature, like so much of medical education research, lacks a firm theoretical

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base, without which findings may not be generalizable. By coordinating efforts to build a research agenda, we have the potential to improve the quality of health care. In this chapter, we propose future directions for research in the field of remediation of trainees and practitioners in the health professions in several interrelated domains.

21.2 Diagnosis of Learner Deficits

As discussed in Chap. 1, a growing international consensus emphasizes core competencies as outcomes of medical education. This movement signals that educators will increasingly be held accountable for the quality of trainees that they graduate. Competency frameworks have forced us to become highly innovative in the assessment of a widening range of competence domains expected of individual physicians. Once we have assessed these areas, we must act on the results. No longer will it be acceptable for a clinician to compensate for poor communication skills or consistently unprofessional interpersonal interactions by being a brilliant diagnostician or technician. These new expectations are becoming part of professional licensing requirements and will likely continue to undergo further expansions and revisions as our capacity to assess new competence areas grows.

When a learner fails to meet expectations, a need for developing a remediation plan for that individual may ensue. Ideally, confirmation of deficits would occur through multimodal assessment by someone familiar with the many contextual factors and contingencies that led to performance deficits. At this point, the process of diagnosing the underlying causes of the performance deficit begins. Competencies are critical as an initial framework for categorizing performance deficits, but as pointed out in Part I of the book, these categories are very broad, and any issue identified can be considered as a symptom of a wide range of underlying problems. As described in Part II, a variety of contextual issues, learning differences, interactional styles, and mental health diagnoses may explain observed performance deficits. When a trainee comes to

our attention for remediation, complex and multiple etiologies are the norm. Chapters in this book report predominantly on the experiences of those immersed in this work in individual educational programs. Multi-institutional descriptive educational epidemiology studies are desperately needed [3]. Like that done by Dupras for internal medicine residents, we need to standardize definitions and describe frequency of learner diagnoses [4]; furthermore, like Brenner et al., we need to study factors that predict serious difficulty in training [5].

While progress in standardized assessment of basic domains of competence (medical knowledge, communication skills, physical examination skills) has facilitated the identification and diagnosis of learner deficits, other realms, such as professionalism and clinical "reasoning," are still a challenge. For professionalism, one study in surgical residents suggests that explicitly articulating clear expectations and consequences could help trainees understand fundamental behavioral norms and assist programmatic leadership to identify problematic behaviors for earlier intervention [6]. There is much more to be learned about methods of assessment in these domains. In addition, effective strategies are needed to overcome persistent challenges in assessment, including discontinuity, grade inflation, underreporting of concerns, inconsistency in ratings, lack of standards setting and benchmarking, and inadequate narrative descriptions.

21.2.1 Learner Diversity and Assessment

Diversity among trainees and between trainees and supervisors may also affect learning, competency assessment, and remediation. Some of the most vexing of these issues are detailed in Part II of the book. Brondolo and Jean-Pierre remind us of the overwhelming evidence showing how racism affects academic achievement and the quality of the relationships between students and teachers for some members of racial minority groups. Meaningful differences among us with respect to race, gender, ethnicity, educational pedigree,

socioeconomic status, and sexual orientation, among others, are important factors in learning, competency assessment, and career choices. Therefore, diversity poses major implications for the success of health care reform, access to medical care for underserved populations, and social justice issues related to access to the professions by underrepresented minorities of all categories. We must always be vigilant, thoughtful, aware, flexible, and creative to ensure that we maximize numerous factors: the advantages to society and the profession incurred through "diversity," and fairness and justice toward our trainees. But we lack the detailed strategies needed to do this.

Part II of the book also makes clear that we need to understand more about the meaning of medical competence in the context of diversity among individuals with respect to learning differences, nonverbal learning disabilities (e.g., autism spectrum disorder), and mental and physical health issues which are common among those otherwise committed to and capable of competent practice. Since medical competency is a rapidly evolving social construct (see Chaps. 1 and 19), we must work to stay in the conversation as informed citizens, leaders, and scholars to ensure that our professional responsibility is served when new competency frameworks emerge, as they undoubtedly will. New methods of assessing new and current competency areas, established benchmarks, and remediation strategies must be meaningful, effective, and feasible. Evidence of validity of these methods of assessing learners, and assessing the outcomes of remediation, should include the consequences for learners' future patients [7].

21.2.2 Trainee Perspectives

Most of the literature on remediation, this book included, has focused on *educators*' perspectives on the recognized needs and deficits of struggling learners. But what are the learners' perspectives? Because low-performing learners tend to overestimate their performance [8–10], we cannot rely on trainees to self-identify for remediation. However, we still must do a better job understanding their experiences and perspectives. One study explored students' views of a remediation program after the first semester of medical school. These students needed ego preservation, emotional and cognitive support in stable groups, and guidance by skilled teachers to develop learning strategies that enhance motivation, attitude, and reflection [11]. Another compared high performers with struggling students and found differences in metacognitive awareness [12] (see Chaps. 13 and 14). Fuller comprehension of students' needs, desires, abilities, experiences, and differences will inform development of programs and help us set reasonable expectations.

21.3 Strategies for Remediation

The literature on remediation interventions reflects both the significant effort invested and the uncertainty that plagues the field. Individual studies describe remediation efforts that focus on a narrow range of deficits and interventions that are evaluated only in the short term. As mentioned above, literature reviews demonstrate a lack of theoretical frameworks employed to guide remediation strategies [1, 2, 13]. Perhaps not surprisingly, the interventions offered often fall short of providing the deliberate practice that is essential for expertise development, a theme described in Chap. 1 and reinforced frequently throughout the book.

21.3.1 Early Detection and Intervention

In medical schools, alternative approaches to selecting incoming students such as the multiple mini-interview assess a range of competencies, including communication and professionalism, that may not be well-represented using traditional admissions criteria despite their relevance for clinical practice [14]. US medical schools have adopted this admissions strategy briskly. Early evidence suggest that this approach improves the ability to predict success in medical school [15]. It will be very exciting to unpack the specific factors

that aid in making admissions decisions and that may predict positive outcomes in communication and professionalism.

It is almost always simpler and more manageable for educators to support learners and correct deficits early in a training program than to intervene later when deficits have compounded, when the stakes have become higher, and when gaps between struggling learners' performance and that of their peers has widened. Total MCAT scores and undergraduate GPAs augur uninterrupted progress through medical school [16], but the predictive value of preadmission test scores and success in medical school varies by school, suggesting that some schools may be better at supporting students at risk. A required early intervention program for students who failed the first semester of medical school led to success in subsequent training [17]. An exploration of how institutional differences in technical standards, remediation programs, and admissions processes (see Chap. 18) impact the need for remediation would provide essential guidance for educational policy and practice.

21.3.2 Emotion, Motivation, and Behavior Change

Trainees identified as needing remediation almost invariably feel a wide range of negative emotions; those previously accustomed to being top performers may present further unique challenges. Therefore, faculty facilitators of remediation must be skillful in communicating and counseling in this domain, and this skill may represent a very important predictor of the success of remediation. This situation parallels the way in which patient–clinician communication affects a patient's adjustment to illness, willingness to adhere to medical advice, and plans to change unhealthy behaviors.

To motivate the remediating learner, educators must carefully facilitate a permissive learning environment with emotional support. This learning environment can be created individually or in a group setting. Working in stable groups of remediating learners can provide emotional and cognitive support that facilitates the development of a learning climate to optimize learner reflections. Groups have been used for medical knowledge and interpersonal communication deficits [11, 18]. Determining the essential factors in establishing a learning climate that maximizes motivation for struggling learners, perhaps in part by comparing individual versus group-based remediation, will illuminate further understanding about factors in successful remediation of these and other domains of clinical competence.

Curriculum and remediation must also address aspects of self-regulated learning [19–21]. White and Barnett integrate these concepts of learning environment, emotional support, and self-regulation while using the appreciative inquiry method to their remediation coaching model, which poses many similarities to motivational interviewing (Chap. 16). Validity evidence of this model will be a crucial step to future remediation research for two reasons: it may clarify the role of self-regulation and self-determination theory as an important force behind remediation learners' efforts to improve [22], and it would provide objective evidence of the efficacy of the model.

21.3.3 Professionalism

Deficits in professionalism and clinical reasoning are highly challenging areas for remediation [23]. For trainees who demonstrate a pattern of unprofessional behavior, remediation may become more difficult in part because labeling these learners as "struggling" or "needing remediation" may initially worsen underlying attitudinal or motivational issues. As Caligor *et al.* point out, unprofessional behavior patterns are associated with personality characteristics that portend poorly for trainee engagement in remediation; we should adjust our expectations accordingly. There has been a call for a toolbox of proven professionalism remediation strategies [24, 25], and methods to remediate practicing physicians have been described [26]. In this book, Chaps. 7, 8, 11, 14, 17, and 20 propose various frameworks for addressing lapses in professionalism for trainees. Particularly innovative is the professionalism

program informed by rich developmental theory described in Chap. 8. Bebeau and Faber-Langendoen used validated measures of moral reasoning and professional identity development to tailor educational interventions and monitor progress. Their work needs to be replicated, refined, and studied across educational settings. These measures can also be adapted for formative assessment of professionalism for all health professions trainees.

21.3.4 Clinical Reasoning

In Chap. 6, Mutnick and Barone share a toolbox of theory-informed strategies to work with trainees who struggle with clinical reasoning. Multi-institutional collaborations are needed to systematically study these and other potentially effective approaches. Though clinical reasoning is at once very complex and content-specific, future work should facilitate information-rich assessment, teaching, and remediation of underlying basic critical thinking skills. As the evidence base in this domain is very deep and informative (see Chap. 6), and since progress testing across institutions has been proven feasible and likely valid [27], combinations of many types of clinical reasoning assessments are likely to establish competence. It is time for well-designed intervention studies to identify and address poor clinical reasoning on a large scale.

21.3.5 Well-Being

Medical training and practice are stressful. Trainees who come to our attention for poor performance often struggle in many domains at once, including learning and mental health challenges, burnout, social and economic struggles. Williams discusses the relevant psychological challenges facing practicing physician trainees and the notions of burnout and resilience (Chap. 11). She proposes structural and programmatic solutions to maximize trainee well-being in order to prevent and address stress-related poor performance. Raymond further introduces three forces

potentially active among medical students: possible academic self-sabotage in those who are ambivalent about becoming physicians, anxiety and depression as responses to struggles arising from undiagnosed learning disabilities, and the concept of the "successful compensator" (Chap. 12). Learner and practitioner wellness, as it influences and is influenced by clinical competence, is fertile ground for research.

21.3.6 Metacognition

Learning scientists are unequivocal that metacognitive competency, including reflection, establishing learning plans, and addressing self-efficacy, is critical to academic success and an important positive prognostic factor in remediation. Quirk provides clear definitions and the theoretical background for building metacognitive competence (Chap. 13). Aronson has developed a rubric that provides specific domains and benchmarks for higher-quality learner reflections [28]; increased skill and accuracy in self-reflection can then lead to higher quality self-regulated learning. In addition, individualized learning plans, utilizing SMART (specific, measurable, attainable, realistic, timely) objectives represent highly useful methods of encouraging learners to regulate their own learning [29]. Tools to improve metacognition in professional school learners are available or can be adapted based on proven strategies in early childhood education. Further interventions could focus on experimental models measuring durable effects of supporting and improving self-regulation, goal-setting, perspective-taking, and reflective capacity, as well as related concepts such as resilience and moral reasoning, in struggling trainees and practicing clinicians.

21.3.7 Longitudinal Assessment

Kalet and Pusic describe the use of electronic portfolios in an assessment program developed with need for standardizing outcomes [30] and with the knowledge that optimal learning occurs with regular, critical reflection on

multiple information-rich assessments [31, 32]. Structuring student assessment longitudinally moves us toward true competency-based education, enables tailoring of curriculum, and allows for earlier and more accurate predictions about the need for remediation [33]. The availability of better baseline and progress mastery data opens many avenues for study.

21.3.8 "Feeding Forward" Information

In the absence of longitudinal learning, the challenge remains to develop a method of continuous relationship building between faculty and trainees to ensure individualized coaching that facilitates lifelong learning for every trainee, not just learners needing remediation (see Chap. 19 for specifics). Where continuity is impossible, development and validation of reliable methods of "feeding forward" information about struggling learners, deftly juggling the benefits with the attendant potential disadvantages of negative bias or favoritism, is necessary [34, 35]. Sharing information longitudinally in a respectful and constructive way can help learners develop essential skills and behaviors [36]. Use of multisource feedback, including staff and peers [37, 38], could provide additional performance details that individual supervisors cannot provide or see.

21.4   Outcomes of Remediation

21.4.1 Flexibility in Training Programs

Audetat *et al.* point out that the major focus of residency programs on service may shortchange education for struggling learners [2]. New structures for residency training that address the uneasy balance between these two sometimes competing needs will be essential to facilitate the success of at-risk learners. Individualizing curriculum in response to competency-based assessments may well be the answer, but the devil is in the details.

21.4.2 When Things Don't Work Out

Given the tremendous commitment required on the part of institutions, faculty, and learners to enact remediation, clarifying return on investment is critical. Currently, the evidence base supporting particular remediation interventions is growing but thus far provides limited guidance for policy and practice. To accelerate scholarship, outcome measures that transcend satisfaction scores or perceived benefits must be identified. For example, in one recent report studying residents who were identified as having deficits and underwent remediation, 78 % completed residency and fewer than 20 % withdrew or were dismissed [39]. This first step of measuring program completion, while important, leads to the next frontier, following learners across the training continuum and beyond. Of great interest is what happens to those who are dismissed from medical training. Are they practicing medicine? This type of long-term follow-up data allows us to prognosticate and judge whether we can justify the commitment of resources to aid learners in need. Ideally, we would seek to affect outcomes relevant to patient care, such as behavior in simulations, measures of patient experience or patient activation [40], incidence of medical board referrals [41], or measures of processes of patient care (hospital readmission rates or length of stay).

Guerrasio (Chap. 20) asserts the obvious, that despite valiant effort, not all medical trainees will be remediable. In the USA, most medical trainees graduate and practice. What if they don't? Some argue that we are our own worst enemy, because as a helping profession, we problematize remediation of trainees using the medical model, using terms of diagnosis, treatment, prognosis, and cure. We thereby run the risk of assuming that we should simply treat our trainees as we would our patients with all the related ethical commitments. We need to examine these assumptions much more carefully through an ethical lens. The current approach often leads to expending significant resources for trainees with multiple and/or severe challenges, potentially increasing student indebtedness, and potentially jeopardizing patient care. Research that guides

the complex, difficult decision-making process to dismiss learners from further training, along with the potential for developing innovative solutions to this challenging problem, is urgently needed [42]. We may become creative about providing alternate career pathways such as Master's degrees for students completing preclinical curricula, or paths to higher degrees other than an M.D. for students with poor clinical skills or other barriers to an M.D. degree despite a talent for science. A cost-benefit analysis of remediation might provide impetus to consider full-tuition reimbursement or debt forgiveness when dismissing a student under certain circumstances. These discussions will significantly impact whether or not we screen and seek to identify struggling students early in training. In summary, further studies must consider a broad range of outcomes including impact on the individual trainee, the relevant institutional stakeholders such as the medical school, clinical settings and the profession, and ultimately, the effect on individual patients and on the public's health.

21.5   Faculty Development

Tolerance of borderline clinical competence and unprofessional behavior does not go unnoticed by the student body and is toxic to educational and patient care environments. We believe that educators generally find it difficult to address these issues because effective low-stakes, formative frameworks, and strategies are lacking, and institutional support lags behind the necessity to address the problems. These barriers contribute to a cultural problem, a negative "hidden curriculum," which tolerates a range of unprofessional behavior, from poor basic skills, lack of accountability or integrity, or dishonesty to outright arrogance and disrespect. Medical educators must face and work to understand these issues if we are to ensure basic standards of professionalism and humanism among our trainees [43]. We assert that well-run, effective remediation programs are reassuring to both students who need them as well as to those who don't.

A common scenario plays out repeatedly in medical education settings: supervisors and peers identify a struggling trainee or colleague, but no one is willing to provide critical feedback. As a consequence, they essentially "kick the can down the road," hoping others will address the problem. There are numerous reasons for this phenomenon, including lack of skills and/or courage to give effective feedback. Faculty may fear reprisal on teaching evaluations from learners identified with performance deficits. While we would be justified in arguing that we should have the courage to act despite such reprisals, we must also protect those willing to engage with struggling learners. Faculty development in delivering effective feedback (Chap. 15) will almost assuredly help, as will developing methods of teacher evaluation that demand learner accountability while preserving learners' autonomy to report their perspectives authentically in a hierarchical system.

In contrast to intervening solely on individuals to change individual behavior and improve individual competence, organizational and structural interventions for faculty development could focus on changing institutional culture and developing communities of practice to improve systemic competence (see Fig. 19.1). Viewed from this sociocultural perspective, thematic incremental, multi-method programs of research would be needed to identify best remediation practices. Linking this effort to related health service programs of research would enable study of the impact of educational interventions on patient outcomes [7]. A set of research questions that reflect the four areas we have been exploring is presented in the box on the following page.

21.6   New Challenges

Much work remains to be done in the areas of *identifying and diagnosing learner deficits*, *optimal strategies and timing for remediation*, *enhancing longer-term outcomes of remediation*, and *providing for faculty development*. In addition, as inter-health professions education becomes increasingly sophisticated, two additional areas

A Research Agenda for Remediation in Medical Education: Example Research Questions

Diagnosis of learner deficits

- *What frameworks for diagnosing student deficits have the most utility in practice?*
- *What is the descriptive epidemiology of learner deficits?*
- *What improvements in assessment strategies can be made to enhance diagnosis?*
- *How do individual differences (e.g., metacognitive awareness, motivation) and characteristics other than academic performance (e.g., race, gender, ethnicity) affect identification and remediation of struggling trainees?*
- *What are learners' views about their own deficits and the need for remediation?*

Strategies for remediation

- *What remediation strategies are most effective and efficient?*
- *What are the ethical and legal implications of remediation?*
- *What preadmission variables predict irremediable difficulties in medical training?*

Outcomes of remediation

- *What are the most relevant short-term and long-term outcomes?*
- *Why do some students leave medical school? Should there be an expectation that some remediating learners will fail?*
- *What are the professional and financial implications of ongoing remediation?*
- *Who are the stakeholders? How do relevant outcomes differ by stakeholder perspectives?*

Faculty development

- *What strategies most effectively increase institutional capacity to conduct remediation?*
- *What effective strategies can balance learner needs with faculty support?*
- *In the absence of continuity of supervision, what structures can ensure effective identification and remediation?*

(continued)

- *What are the best faculty development practices, and what educational theories support these practices?*
- *How can faculty remediators most effectively support development of learner motivation?*

of study emerge. First, as all health professions trainees and practitioners develop common areas of individual competence (e.g., basic clinical skills, communication, systems-based practice) across health professions, our understanding of experiences and resources for remediation will expand. Second, new interprofessional practice competencies assessed from a system's and sociocultural perspective (in other words, as a group competency) will develop and require assessment and potential remediation.

Finally, the fields of simulation and educational technology may allow for adaptive individualized curriculum and assessment on a scale never before possible. The field of remediation will need to evolve to keep pace with these changes in curriculum and medical practice.

21.7 Conclusion

Because remediation draws upon a diverse set of intellectual disciplines, it is a fascinating lens through which to view evidence, theory building, and theory application. For instance, remediation has a clear and important role in ensuring quality and outcomes of care and patient safety. This role encompasses the competence of individuals (therefore encompassing psychological constructs such as expertise development, metacognition, and emotional intelligence), the competence of groups (the team, the microsystem, and communities of practice, thereby including sociologic perspectives), and the material world of health care delivery (e.g., systems, technology, resource allocation, and politics) [44]. All of these levels must be considered when conducting research in this domain. At the

moment, the field, as reflected in the content of this book, is largely focused on individual competence, incompetence, and remediation. The trainee or physician is viewed as the one with the problem and therefore the one who needs to be fixed or dismissed. It is clearly not that simple, and this field of scholarship is clearly in its infancy. What is also clear is that future studies of remediation practices should employ rigorous designs with long-term outcomes, particularly those that matter most—the care we provide to patients. There is so much more to do.

References

1. Cleland J, Leggett H, Sandars J, Costa MJ, Patel R, Moffat M. The remediation challenge: theoretical and methodological insights from a systematic review. Med Educ. 2013;47:242–51.

2. Audetat M, Laurin S, Dory V. Remediation of struggling learners: putting an end to "more of the same". Med Educ. 2013;47:224–31.

3. Carney PA, et al. Educational epidemiology. JAMA. 2004;292:1044–50.

4. Dupras DM, Edson RS, Halvorsen AJ, Hopkins Jr RH, McDonald FS. "Problem residents": prevalence problems, and remediation in the era of core competencies. Am J Med. 2012;125:421–5.

5. Brenner AM, Mathai S, Jain S, Mohl PC. Can we predict "problem residents"? Acad Med. 2010;85:1147–51. doi:10.1097/ACM.0b013e3181e1a85d.

6. Sanfey H, DaRosa DA, Hickson GB, et al. Pursuing professional accountability: an evidence-based approach to addressing residents with behavioral problems. Arch Surg. 2012;147:642–7.

7. Kalet AL, Gillespie CC, Schwartz MD, Holmboe ES, Ark TK, Jay M, Paik S, et al. New measures to establish the evidence base for medical education: identifying educationally sensitive patient outcomes. Acad Med. 2010;85:844–51. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/20520038

8. Eva K, Regehr G. Self-assessment in the health professions: a reformulation and research agenda. Acad Med. 2005;80:S46–54.

9. Srinivasan M, Hauer KE, Der-Martirosian C, Wilkes M, Gesundheit N. Does feedback matter? Practice-based learning for medical students after a multi-institutional clinical performance examination. Med Educ. 2007;41:857–65.

10. Langendyk V. Not knowing that they do not know: self-assessment accuracy of third-year medical students. Med Educ. 2006;40:173–9.

11. Winston KA, van der Vleuten CPM, Scherpbier AJJA. At-risk medical students: implications of students'

12. Todres M, Tsimtsiou Z, Sidhu K, Stephenson A, Jones R. Medical students' perceptions of the factors influencing their academic performance: an exploratory interview study with high-achieving and re-sitting medical students. Med Teach. 2012;34:e325–31.

13. Hauer KE, Ciccone A, Henzel TR, Katsufrakis P, Miller SH, Norcross WA, Papadakis MA, Irby DM. Remediation of the deficiencies of physicians across the continuum from medical school to practice: a thematic review of the literature. Acad Med. 2009;84:1822–32.

14. Eva KW, Rosenfeld J, Reiter HI, Norman GR. An admissions OSCE: the multiple mini-interview. Med Educ. 2004;38:314–26.

15. Eva KW, Reiter HI, Rosenfeld J, Trinh K, Wood TJ, Norman GR. Association between a medical school admission process using the multiple mini-interview and national licensing examination scores. JAMA. 2012;308:2233–40.

16. Dunleavy DM, Kroopnick MH, Dowd KW, Searcy CA, Zhao X. The predictive validity of the MCAT exam in relation to academic performance through medical school: a national cohort study of 2001–2004 matriculants. Acad Med. 2013;88:666–71.

17. Winston KA, van der Vleuten CPM, Scherpbier AJJA. The role of the teacher in remediating at-risk medical students. Med Teach. 2012;34(11):e732–42.

18. Chou CL, Chang A, Hauer KE. Remediation workshop for medical students in patient–doctor interaction skills. Med Educ. 2008;42:537.

19. Durning SJ, Cleary TJ, Sandars J, Hemmer P, Kokotailo P, Artino AR. Viewing "strugglers" through a different lens: how a self-regulated learning perspective can help medical educators with assessment and remediation. Acad Med. 2011;86:488–95.

20. Brydges R, Butler D. A reflective analysis of medical education research on self-regulation in learning and practice. Med Educ. 2012;46:71–9.

21. Winston KA, Van der Vleuten CPM, Scherpbier AJJA. An investigation into the design and effectiveness of a mandatory cognitive skills programme for at-risk medical students. Med Teach. 2010;32:236–43.

22. Ten Cate OTJ, Kusurkar RA, Williams GC. How self-determination theory can assist our understanding of teaching and learning processes in medical education. Med Teach. 2011;33:961–73.

23. Saxena V, O'Sullivan PS, Teherani A, Irby DM, Hauer KE. Remediation techniques for student performance problems after a comprehensive clinical skills assessment. Acad Med. 2009;84:669–76.

24. Papadakis MA, Paauw DS, Hafferty FW, Shapiro J, Byyny RL. The education community must develop best practices informed by evidence-based research to remediate lapses of professionalism. Acad Med. 2012;87:1694–8.

25. Buchanan AO, Stallworth J, Christy C, Garfunkel LC, Hanson JL. Professionalism in practice: strategies for assessment, remediation, and promotion. Pediatrics. 2012;129:407–9.

26. Swiggart WH, Dewey CM, Hickson GB, Finlayson AJR, Spickard Jr WA. A plan for identification, treatment, and remediation of disruptive behaviors in physicians. Front Health Sci Manage. 2009;25:3–11.

27. Williams RG, Klamen DL, White CB, Petrusa E, Fincher RE, Whitfield CF, Shatzer JH, et al. Tracking development of clinical reasoning ability across five medical schools using a progress test. Acad Med. 2011; 86:1148–54. doi:10.1097/ACM.0b013e31822631b3.

28. Aronson L. Twelve tips for teaching reflection at all levels of medical education. Med Teach. 2011;33: 200–5.

29. Chang A, Chou CL, Teherani A, Hauer KE. Senior medical students' clinical skills learning goals after performance feedback. Med Educ. 2011;45:878–85.

30. Cooke M, Irby DM, O'Brien BC. Educating physicians: a call for reform of medical school and residency. San Francisco: Jossey-Bass; 2010.

31. Schuwirth LW, van der Vleuten CP. Programmatic assessment: from assessment of learning to assessment for learning. Med Teach. 2011;33:478–85.

32. Driessen E, van Tartwijk J, Vermunt JD, van der Vleuten C. Use of portfolios in early undergraduate medical training. Med Teach. 2003;25:14–9. Retrieved from http://informahealthcare.com/doi/pdf/10.1080/0142159021000061378

33. Chang A, Boscardin C, Chou CL, Loeser H, Hauer KE. Predicting failing performance on a standardized patient clinical performance examination: the importance of communication and professionalism skills deficits. Acad Med. 2009;84:S101–4.

34. Cleary L. "Forward feeding" about students' progress: the case for longitudinal, progressive, and shared assessment of medical students. Acad Med. 2008;83:800. doi:10.1097/ACM.0b013e318181cfbc. PubMed PMID: 18728429.

35. Cox SM. "Forward feeding" about students' progress: information on struggling medical students should not be shared among clerkship directors or with students'

current teachers. Acad Med. 2008;83:801. PubMed PMID: 18728430.

36. Hauer KE, O'Brien BC, Hansen LA, Hirsh D, Ma IH, Ogur B, Poncelet AN, Alexander EK, Teherani A. More is better: students describe successful and unsuccessful experiences with teachers differently in brief and longitudinal relationships. Acad Med. 2012; 87:1389–96.

37. Sargeant J, Mann K, Sinclair D, van der Vleuten C, Metsemakers J. Challenges in multisource feedback: intended and unintended outcomes. Med Educ. 2007; 41:583–91.

38. Chou CL, Masters DE, Chang A, Kruidering-Hall M, Hauer KE. Effect of longitudinal small group learning on delivery of clinical skills feedback. Med Educ., in press.

39. Zbieranowski I, Takahashi SG, Verma S, Spadafora SM. Remediation of residents in difficulty: a retrospective 10-year review of the experience of a postgraduate board of examiners. Acad Med. 2013;88: 111–6.

40. Hibbard JH, Stockard J, Mahoney ER, Tusler M. Development of the patient activation measure (PAM): conceptualizing and measuring activation in patients and consumers. Health Serv Res. 2004;39:1005–26.

41. Papadakis MA, Teherani A, Banach MA, Knettler TR, Rattner SL, Stern DT, Veloski JJ, Hodgson CS. Disciplinary action by medical boards and prior behavior in medical school. N Engl J Med. 2005;353:2673–82. PubMed PMID: 16371633.

42. Dudek NL, Marks MB, Regehr G. Failure to fail: the perspectives of clinical supervisors. Acad Med. 2005; 80:S84–7.

43. Hafferty FW. Beyond curriculum reform: confronting medicine's hidden curriculum. Acad Med. 1998;73: 403–7.

44. Fenwick T. Re-thinking the "thing": sociomaterial approaches to understanding and researching learning in work. J Workplace Learn. 2010;22:104–16.

Epilogue: A Student's Perspective on Remediation

David Tawfik

As I write this, I am days away from starting medicine internship. But I nearly didn't graduate from medical school. I could never have predicted that I would come so close to failing.

Throughout high school and college, academically I had always easily been on the winning side of the bell curve. My work and what I perceived as my "worth" revolved entirely around how close to perfectly I could do things. It really didn't matter what the subject was or whether I liked it, as long as I could take that challenge and make it into a trophy.

The engine that fueled my perfection was anxiety. If there was any lingering doubt that my work wasn't pristine, my anxiety would skyrocket unpleasantly, reminding me that I needed to improve. On chemistry tests, I studied for hours until I got the reactions right. Before I turned in humanities papers, I would read and re-read papers until I had minimized errors. While uncomfortable, for the most part, this strategy worked and paved my way into medical school.

For the first 2 years at least, this algorithm of "success" continued to work. However, when school became less of a series of written exams and more of a test of my composure, my reliable team of perfection and anxiety began to cause

problems, a bit during our pre-clerkship clinical skills course, but most of all during my third year clerkships. Rather than motivating me, anxiety became a hindrance to my composure, stunting my speech and ability to communicate with both my team and with patients. Answering a question on rounds was a gargantuan effort; even though I may have known the right answer, I could never quite get through the maze of distraction going through my mind. I still wanted to be perfect but the more I tried, the worse I did.

Anxiety was not only affecting my grades but my spirit as well. I came into medicine inspired to alleviate pain and help people heal, but by the end of my medicine rotation, I felt like the burden of pain fell mostly upon me. I dreaded coming to work every day, fearing the necessity of having to perform. I lost 20 pounds. I was tired all of the time, stopped exercising, and stopped participating in activities that I enjoyed. I found it increasingly difficult to pay attention to lectures and on rounds. I became increasingly isolated, ashamed of reactions from other medical students. My anxiety was transforming into depression. By my fourth and fifth rotations, psychiatry and medicine, my performance was so poor that I was asked to repeat portions of these clerkships and had to meet with the deans of the medical school. Never in a million years did I imagine I would need to address academic deficiencies.

The first question they asked me was, "are you sure you want to keep on doing this?" I promptly replied, "yes, of course!" But in my mind I wasn't

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sure. If this process was going to continue to be so painful to me, then I didn't want any part of it. They suggested that I take a year off to deal with my struggles. When I heard this, I was crushed.

Like a substance abuser who revives only after hitting bottom, this series of events allowed me the opportunity to gain some insight into my problems and heal. I needed a safe place for self-evaluation, and so I retreated home to the comfort of my family. I realized that the biggest and most blatant problem was anxiety, but I suspected that I also had some difficulties concentrating, and I resolved to get to the bottom of it.

Fortunately, I am a resourceful perfectionist, not scared to embrace help and support when I need it. I saw that I needed to assemble a committed team to help me. For my anxiety, I went to my school's well-being program. A psychiatrist suggested that I both undergo psychotherapy and take antidepressant medication. I knew about this approach—I had passed that exam handily, and even had prescribed medications to patients on psychiatry clerkship—but when applied to me, I wasn't sure about medication—didn't I have more control over my life than to resort to a drug I thought was for "weak" people?

Then again, would I be in this position if I did?

Over time, this combination was extremely helpful to me, and my anxiety started to thaw. Things that had seemed like "life or death" in the past, both academically and personally, were no longer that way. I found myself reacting less to minor criticisms, I obsessed less about minutiae, and I began to feel happier and more at ease in all realms of life.

My year off was much more than psychiatric treatment. I realized I needed practice with presentation skills. I joined a local Toastmasters group to help with public-speaking skills. I worked in a basic science lab, where I informed the principal investigator and postdoctoral fellow of my struggles; they gave me opportunities to work on presentations and time to address my needs. To maintain my clinical skills, I worked in a local homeless urgent care clinic every Monday morning. Our medical school set up an educational assessment that showed that while I was

quite intelligent, my reading speed was very slow, and I had some signs of ADD. Over the years, with ample study time, I was able to overcome these deficits, but with increased pressure on clerkships, along with anxiety, I could no longer cope. I then went to an educational specialist who taught me some strategies to manage.

I also had a very committed mentor who worked with me on interpersonal skills regularly, graciously offering to help me overcome my fears. One day in the middle of my year off, he offered me a very meaningful piece of advice. He said, "David, the 'perfect doctor' and the 'perfect medical student' do not exist. Interacting with patients involves some learned skills, but the great majority of it is just being who you are. In being authentically human, people will appreciate you." With these words, I finally got it: instead of burdening myself with having to be perfect, I could be myself and do a better job.

After the year off, all these team members agreed with me that I should resume clerkships. Initially it was somewhat scary, but in retrospect, I was afraid of leaping off a diving board backwards in time, only to reexperience my previous failures. Now, though, I had more skills and support. As it turned out, being on clerkships was far easier than in the past. My anxiety hadn't disappeared, but it was far more manageable now. Interactions with medical teams and patients felt more like normal conversations than an act. The best part about this is that I liked what I was doing rather than dreading it. Without the burden of perfection, I could relish learning the art and power of healing, my original goal.

The rest of medical school turned out to be extremely successful. I don't mean that I got honors grades in all of my clerkships from that point on, but it was enjoyable and empowering. When it came time to apply to residency, I was quite candid about my experiences and often received praise for my tale rather than doubt.

Although my struggles with anxiety in medical school were painful, I am hopeful that the lessons that I learned by facing my problems will persist. I think that my patients, fellow students, and supervising residents and attendings

are much happier working with the real *me* than David the perfect medical student actor. I realize now that there is a balance between average and perfect—sometimes it's important to be as close to an external standard of perfection as possible, but for me it is inhuman to sustain that all of the time. It was humbling to realize that my shortcomings nearly got in the way of my ultimate goal. Finally, I am beginning to see that doctoring is not impossible, but it reveals aspects of ourselves, sometimes very uncomfortable, that are important to heed, continuously improve, and maintain. I need to be perfectly imperfect.

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