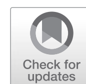

How to Teach in Busy Clinical Settings

James T. Hardee and Frederic W. Platt

Teaching: The sharing of knowledge, of curiosity, of discovery, of understanding, and of connecting with another person.

The opportunity to teach medical students and resident physicians is one of our highest callings as doctors and a source of immense career satisfaction. Although the increasingly complex medical landscape threatens to diminish the opportunity and effectiveness of clinical education, focused preparation and flexibility are key strategies. Recognizing institutional "protected time" for educational activities and seizing the proverbial "teachable moment" serve to enhance learners' experience. Prudent use of case-based learning, team-based learning, and available technologies is also effective. Perhaps even more critical to the student's educational experience than the assimilation of facts is the observation of the attending physician's professionalism and bedside manner. It is important to be ever mindful that we serve as role models for trainees, who are apt to pick up on our habits. Attending physicians' demonstration of enthusiasm, compassion, and integrity is known to positively influence medical students' educational experience. Excellence in clinical communication, in all its applications (physician–patient, physician–family, physician–staff, and physician–physician), demonstrates the highest degree of our professionalism.

Teaching medical students and house staff is a primary reason for seeking a position in academic medicine. The opportunity to offer knowledge and positively affect future generations of physicians is exciting and gratifying [1, 2]. Certainly, challenges emerge that can adversely affect teaching opportunities. These include time constraints, increasing attending physician workload and care responsibilities [3], HIPAA and privacy regulations, and house staff work hour restrictions [4] to name a few. Even residents have noticed a "decrease in quality of faculty teaching and decrease in educational satisfaction" [5] since ACGME work hour restrictions have gone into effect. The complexity and amount of ever-evolving information to be delivered during this time of training are unprecedented. Beyond the scientific and humanistic information to be assimilated, students and residents face issues of life and death, family struggles, grueling call schedules, and board examinations. The role of the attending physician in the education, support, and development of future generations of doctors cannot be overstated and as such is a career satisfaction point for almost all academic physicians [6].

Increased regulations, time constraints, and the ever-present "tyranny of the urgent" need not overshadow critical teaching opportunities. Rather, successful institutions have set aside

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© Springer Nature Switzerland AG 2020
L. W. Roberts (ed.), *Roberts Academic Medicine Handbook*,
https://doi.org/10.1007/978-3-030-31957-1_12

protected time for education, and attending physicians have needed to become more focused and intentional in these efforts. Depending on whether the teaching is occurring on the hospital wards (inpatient) or in the ambulatory clinic setting (outpatient), recognizing and seizing the opportunity is key.

Inpatient

Attending on the hospital ward typically affords some luxury for blocking out time to teach. Not that the wards cannot be extremely busy and chaotic, but the pace of the day often presents some flexibility. Consider these protected time opportunities:

Morning Report (Daily)

- One-hour case-based presentation typically involving a recently admitted patient
- Presented by the intern, resident, or student
- Brief history and physical, pertinent lab/imaging findings, hospital course
- Can be presented in Question and Answer format seeking input from others
- Diagnosis given with summary of the pathophysiology and article/references

Noon Conference (Daily)

- One-hour topic-based presentation from Fellow or Attending in the area of expertise
- Case-based, lecture format, or include "Board-style" multiple-choice questions
- Includes lecture slides, relevant article/references, handouts
- Sometimes known as "Lunch and Learn"

Morbidity and Mortality (M & M) Conference (Weekly)

- Instructive case often involving an adverse or unexpected outcome
- Details a case involving a relentless or atypical disease process
- Includes pathology or other experts with insight or instruction
- Outlines opportunities for improved diagnosis and treatment

Grand Rounds (Monthly)

- Topic chosen by department chief or education committee
- May include an invited guest speaker or regional/national expert
- 90–120 minutes with time for department socialization
- Invitation extended to clinics, pharmacists, nurses, administrators, etc.
- Due to size of audience, may take place in a large auditorium setting

Typically, the more "case-based" a lecture or presentation is, the better. Presenting a litany of esoteric facts via the proverbial "death by power point" is generally unhelpful to students and residents (see chapter "How to Give a Lecture"). In any of the aforementioned conferences, allow time for interaction and conversation. It is valuable for students to participate with more senior physicians in generating a differential diagnosis and discussing various treatment options.

Inpatient hospital ward rounds (attending rounds) have been a staple of medical education for generations of doctors, although the percentage of clinical teaching at the bedside has been steadily declining for decades [7]. Virtually all physicians have some memory and fondness of making rounds with the "ward team" … gathering outside each hospital room while the student or intern presents a thumbnail sketch of the patient's course of care. The "team" then makes its way to the bedside where the attending would recant a few items of the history and clarify needed data. The members of the team would take turns briefly examining the patient and reviewing the pertinent findings (laboratory, radiologic, specialty consultations, etc.). Bedside teaching rounds are most "at risk" for being shortchanged or omitted alto-

gether when the busyness of the day takes over. However, even mini-lectures or brief demonstration of physical exam findings (e.g., murmur auscultation, thyroid palpation, or shoulder exam) can be extremely valuable [8].

To help pick up the slack and involve the entire team, trainees should be encouraged to read about a particular topic and present that to the group (this lessens the burden on the attending and allows for self-study and peer-to-peer teaching). In addition, encourage students and house staff to return to the patient's bedside as appropriate to reexamine findings noted on "attending rounds" to solidify the learning in a slightly less rushed fashion. An emerging concept in medical education which extends the concept of "team learning" involves a shifting focus to "team-based care" which not only includes medical students and residents but nursing, pharmacy, and health administration students as well [9]. These efforts also foster collaboration and collegiality, which are important long-term career skills.

Bedside learning can also be augmented by utilizing available technology (see chapter "How to Use Technology in Educational Innovation"). Students may benefit from educational materials available in many hospital libraries and media centers or even credible Web sites. An example of this would be using the Internet to view an example of the Dix–Hallpike maneuver to evaluate benign positional vertigo on YouTube (which even demonstrates the associated nystagmus).

Inpatient teaching need not be imperfect nor inefficient on a busy service. With focused effort, awareness of opportunities, use of team learning, and judicious use of advanced technology, the hospital wards present some of the most fertile grounds for learning the science and practice of medicine.

Outpatient

The ambulatory clinic setting provides a great variety of teaching opportunities, typically at a much faster pace than the inpatient setting. As more and more patients are being treated as outpatients for conditions that warrant extended hospitalizations (e.g., community-acquired pneumonia, uncomplicated deep venous thrombosis), the variety and complexity of ambulatory care present unique opportunities and challenges for teaching. The outpatient clinic setting allows for both the recognition of a new disease presentation and the follow-up of established disease processes. Patients are now being seen in 15–20-minute visits, and as such, the time for clinical instruction can be quite compressed. What the clinic setting lacks in terms of being able to evaluate a patient or a disease slowly over days or weeks, it makes up for by offering a great number and variety of cases in rapid succession. Identifying the proverbial "teachable moment" is key in these situations.

An effective teaching strategy involves helping a trainee identify a focused learning objective and then create connections between facts learned in the classroom and actual physical findings. Depending on the institution, the first 2 years of medical school are heavy on lecture-based education. Students may learn about a particular cardiac murmur but not actually auscultate a real patient for years. Rather than simply "waiting to see what walks in" to the clinic, spend a few moments with the student to clarify what he or she desires to focus on. If the student is immersed in a pulmonary class at the time, then suggest "let's be sure to listen to all the patients' lungs today and see what we can pick up on." If, in this example, chest X-rays or pulmonary function tests are available to review, incorporate those studies to the lung exam findings. The more interconnections that are made, the more likely it is that the information will "stick."

An effective strategy for ambulatory education built on brief teacher–learner interactions is SNAPPS [10], a collaborative model for case presentations, specifically designed for the outpatient setting, which links learner initiation and preceptor facilitation in an active learning conversation. The six SNAPPS steps are as follows:

1. *S*ummarize briefly the history and clinical findings.
2. *N*arrow the differential diagnosis to two or three relevant possibilities.

3. *A*nalyze the differential by comparing and contrasting the possibilities.
4. *P*robe by asking questions about uncertainties and alternate approaches.
5. *P*lan management for the patient's medical issues.
6. *S*elect a case-related issue for self-directed learning.

Virtually all medical schools and training programs have institutional guidelines published and available to serve as road maps for competencies trainees should be achieving. The University of Colorado Foundations of Doctoring program, for example, distributes its curriculum to students and faculty and details specific knowledge, skills, and behaviors in which students are expected to acquire and demonstrate proficiency. The checklist is exhaustive and includes topics ranging from deductive reasoning, practicing compassionate treatment of patients, and data gathering to palpating lymph nodes, assessing for abdominal rebound tenderness, and the ophthalmoscopic exam. The curriculum also contains information for faculty and students on history and physical templates, oral presentations, and patient write-ups to standardize the educational experience as much as possible.

It is well established that active learning is preferable to passive learning. Supportive, learner-focused education is generally more effective than "fear-based" learning. Intimidation, humiliation, and ridicule are not effective tools for teaching future professionals. Rather, encouragement, support, and motivation are far more effective and, it is hoped, more enjoyable for the attending as well!

Professionalism and Patient Care

Although much of what an attending physician imparts to students and house staff is in the "academic" realm, the modeling of medical professionalism may be ultimately just as important [11]. Students learn much about interpersonal communication and professionalism from those whom they observe. For many, the early training years may be the first time actually witnessing an attending physician supervising a care team or managing a stressful clinical situation. Did the attending curse or throw things? Did the attending "bad mouth" a colleague, staff member, or patient? Did the attending gripe and complain about the administration? Even a brief glimpse of an attending yelling or grousing can suggest to the student that such behavior is acceptable. Just as parents must be mindful that their children often pick up on their language, habits, and mannerisms, students are often "blank canvasses" where attending physicians must be careful to exhibit helpful behaviors. The joy and professional satisfaction of watching fledgling first-year students and interns transform into confident, competent, empathetic doctors is something to behold. We must continue to role model what it means to be an exemplary physician, leader, and healer in an ever-changing healthcare landscape [12]. An effective strategy for conceptualizing student and resident development involves the evolution from *supervisor* to *coach* and, finally, to *mentor*.

Supervising (All Students)

- Adheres to legal and institutional guidelines
- Attending ultimately responsible for patient care, charting, and billing
- Ensures educational objectives and competencies being met
- Sets expectations for trainee conduct, assignments, and responsibilities
- Involves giving a grade or formal evaluation at conclusion

Coaching (Some Students)

- Less formalized instruction … more collaborative
- Increased autonomy given to a trainee. Opportunity to "try and fail"
- Teaching by example. A process of development
- Feedback given to build confidence and competence

Mentoring (Few Students)

- More formalized than coaching
- Process typically initiated by mentee
- Takes a "big picture" approach, including career skills and goals
- Only occurs with a select few students, perhaps no more than 1–3 at a time

Throughout the course of educating students and house staff, the demonstration of the many facets of professionalism by appropriate role modeling is critical. A role model teaches primarily by example and helps shape the trainees' professional identity and commitment. There is a noted correlation between clinical excellence and effective role modeling in inspiring trainees [13]. Students identify enthusiasm, compassion, integrity, and good relationships as attributes they seek in their role models [14]. Conversely, faculty with poor attitudes or unethical behavior can cause distress and confusion in students. Excellent clinical skills and teaching ability are important attributes for an effective attending physician. Ultimately, the value of a good role model is based on the students' reflective assessment of their preceptors' "worthy" behaviors [15].

"I used to torment my students," a retired physician colleague once said. All of those students have long since completed their training and are respected doctors in the community …" and one of them now torments *me* about tormenting *him*!" Although we can share a chuckle about attending physicians in our past who either terrified or inspired us, there is no denying the influence we have over impressionable student doctors. And although "supervision" is an important legal, ethical, and institutional requirement, at the heart of what we do is to instruct, coach, mentor, support, and role model.

Imagine that we create doctors, not just biological scientists, but real doctors, healers, and caregivers for people. Perhaps one of the great things we can help facilitate is the teaching relationship between patient and student. Here is how it can happen: I send in my first-year student, John Smith, to talk with a patient. The student has already told me that he "does not know enough." Students often misunderstand their task, thinking that their job is TO KNOW, when really the task is TO FIND OUT. I give the student an easy task … Find out who this patient is as a person. Ask him or her to tell you about himself as a real person. Tell him you are a student doctor and want to start *not* with his illness, but with him. Then settle in and listen. When you have learned something, ask permission to tell it back to the patient to be sure you have heard it right. Then you will find yourself saying things like "So, if I am hearing you right, you are 48 years old and teach music at a high school. And you are married to another teacher and you have two dogs and a cat, but no kids so far, right?"

Meanwhile something magic is about to happen. I recognize it because after 10 minutes of the two being together as medical student and patient, I knock on the door and enter. "How are you two getting along?" I ask. The medical student is getting ready to tell me he does not know enough again. But the patient hops into the conversation and says "This student-doctor Smith here says I am doing pretty well with my work and my pets at home." The student straightens up. He is at that moment, for the first time, hearing a patient refer to him in his professional training role: the student-doctor. It has just happened that instant. The *patient* did it. The student sees that he will someday be "Dr. Smith" and carry the responsibilities that go with this title.

The "supervision" of medical students can and should be more than simply reviewing orders, signing off on chart notes, and rendering evaluations. A true and effective academic attending physician coaches and mentors student-doctors. We facilitate experiences and opportunities using patients and disease processes to allow students to learn what it is to be a physician. We must never forget that we teach THE CARE OF PATIENTS.

So what tools do we have at our disposal to deftly wield with the students with whom we are in charge? Several come to mind.

Kindness

We should treat our students as we would have them treat our/their patients. Above all … kindness. And courtesy: addressing the patient by his

or her preferred name. Apologizing for our many little and occasionally larger faults (being late, not having listened carefully, needing to repeat procedures such as blood draws, etc.). We can forgive our students for their lapses as we would hope they forgive us and their patients.

Knowledge

Yes, we are tremendous knowledge banks, retaining many useless and some needed facts about biochemistry, anatomy, physiology, pharmacology, and mechanical procedures. But we are unlikely to understand the biochemistry of genetics as well as our students' geneticist professors (and probably not as well as the students themselves), and we are unlikely to understand cardiac physiology as well as the dedicated cardiac physiologist. But, we can demonstrate over and over that knowledge matters, that finding out what one does not know is the right track, and that we are working in science, not superstition.

Inquiry

Our students are convinced that they must KNOW everything. More importantly, they should INQUIRE. It is not *knowing*, but *finding out* that constitutes the clinical task. We can demonstrate inquiry with curiosity and openness to our patients' stories.

Patients

Patients are what we have that other (classroom and research) teachers likely lack. It is by talking with patients, examining patients, explaining what matters to patients, asking permission of patients, and letting patients know that they matter that we will create doctors rather than pathologists for live bodies. We attending physicians have patients. We must demonstrate that we can be effective clinicians and efficient at the same time.

Communication

The use of competent, confident, and considerate communication with peers and staff is critical for students to observe and begin to master. How we address colleagues is important. The words we use and the attitudes we display matter. Respectful dialogue between attending physicians is essential for early-career doctors to see, even when there is disagreement about a diagnosis, the need for additional testing, or the treatment plan. Courteous communication with nurses, ancillary staff, and administration is also a must. Long gone are the days when physicians could rule the hospitals and clinics as tyrants. Although attending physicians are still ultimately responsible for medical care and decision-making, more and more we also serve as leaders of a larger care team. And as such, our communication skills (both good and bad) are magnified. It would be tragic for our students to witness tantrums, cursing, or belittlement of others, assume that it is perfectly acceptable behavior, and carry that forward in their own careers.

Conclusion

The preparation and education of future generations of physicians is undoubtedly one of our highest callings. Although increasing stressors and constraints threaten to limit our availability and the opportunity for teaching, focused preparation, flexibility, and being ever-mindful for even the briefest teachable moment help us in our goal. Protected teaching time, team-based learning, and appropriate leveraging of technology can assist in our efforts, but we must be cognizant that some of the greatest and longest-lasting lessons we can impart on our students are compassion and professionalism.

Words to the Wise

- Use case-based and team-based learning.
- Avoid unhelpful tactics of fear, intimidation, and humiliation when teaching.

- Identify the student's learning objectives to focus the efforts and experience.
- Recognize and seize the "teachable moment."
- Consider the SNAPPS model of teacher–learner interaction.
- Be cognizant that attending physicians are always being observed by students.
- Consistently model exemplary professional, communication, and leadership habits.

Ask Your Mentor or Colleagues

- Who affected you the most during your clinical training and why?
- How did you develop your professional identity? Who or what events were most instrumental?
- How did you develop your clinical communication skills, and what are you still learning?
- Were there things in your medical training that you would change if you could?
- What experiences in your medical training had the most deleterious effect on you and how did you overcome them?

References

1. Whitcomb ME. The general professional education of the physician. Acad Med. 2006;81(12):1015–6.
2. Cifu AS. Advice for a student starting medical school. JAMA. 2018;320(8):759–60.
3. Steinmann AF. Threats to graduate medical education funding and the need for a rational approach: a statement from the alliance for academic internal medicine. Ann Intern Med. 2011;155(7): 461–4.
4. Nucklos TK, Bhattacharya J, Wolman DM, Ulmer C, Escarce JJ. Cost implications of reduced work hours and workloads for resident physicians. N Engl J Med. 2009;360(21):2202–15.
5. Jagsi R, Shapiro J, Weissman JS, Dorer DJ, Weinstein DF. The educational impact of ACGME limits on resident and fellow duty hours: a pre-post survey study. Acad Med. 2006;81(12):1059–68.
6. Meli DN, Ng A, Singer S, Frey P, Schaufelberger M. General practitioner teacher's job satisfaction and their medical students' wish to join the field: a correlational study. BMC Fam Pract. 2014;1 5:50.
7. Qureshi Z. Back to the bedside: the role of bedside teaching in the modern era. Perspect Med Educ. 2014;3(2):69–72.
8. Chi J, Artandi M, Kugler J, Ozdalga E, Hosamani P, Koehler E, et al. The five-minute moment. Am J Med. 2016;129(8):792–5.
9. Krupa C. Med schools shift focus to team-based care. Am Med News. 2012;55(6):1–4.
10. Wolpaw TM, Wolpaw DR, Papp KK. SNAPPS: a learner-centered model for outpatient education. Acad Med. 2003;78:893–8.
11. Altirkawi K. Teaching professionalism in medicine: what, why, and how? Sudan J Paediatr. 2014;14(1):31–8.
12. Riley S, Kumar N. Teaching medical professionalism. Clin Med. 2012;12(1):9–11.
13. Kravet SJ, Christmas C, Durso S, Parson G, Burkhart K, Wright S. The intersection between clinical excellence and role modeling in medicine. J Grad Med Educ. 2011;3:465–8.
14. Paice E, Heard S, Moss F. How important are role models in making good doctors? BMJ. 2002;325:707.
15. Benbassat J. Role modeling in medical education: the importance of reflective imitation. Acad Med. 2014;89(4):550–4.