Introduction

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How to Use this Book

Creating objective structured clinical exams (OSCEs) or other standardized patient (SP) exercises can feel overwhelming, but the benefits of this kind of practice-based learning and assessment—for future health care practitioners and their future patients!—make them work definitely worth doing. This is why we wrote this book. It is our hope that the systematic approach offered here will make it easier for more people to get involved in the process of creating OSCEs or similar SP exercises. Using a road map like the one contained in Chap. 2 (our "Ten Steps"), the process is really quite doable as well as rewarding.

SPs and OSCEs play an increasing role within contemporary health professions education across all disciplines and across the continuum of training. They are important educational tools for high-quality teaching (formative assessments) as well as for the evaluation of basic and advanced clinical skills (summative assessments). Program evaluations increasingly include OSCEs to measure the impact of curricular interventions.

Licensing and accrediting organizations around the world have embraced OSCEs and SPs. For example, the Accreditation Council for Graduate Medical Education (ACGME) in the United States has recommended them as key components of their assessment Toolbox (ACGME/ABMS Joint Initiative 2000). The US National Board of Medical Examiners (NBME) implements OSCE-type assessments as part of licensure (www.usmle.org/step-2-cs/). Efforts such as these enable health professions educators to better fulfill their obligations to society.

Though many institutions have access to a sophisticated clinical skills center, many do not. We wrote this book based on our 20-year experience producing OSCEs without a clinical skills center—in empty classrooms or walk-in clinics on weekends, using well-trained actors and carefully designed clinical scenarios. Our experience covers a broad range of multidisciplinary and inter-professional collaborations. Through this work we have fine-tuned our approach to designing and implementing successful OSCEs. No matter how small or large your group of learners, this book can help you do the same. While OSCEs are resource-intensive endeavors, the benefits to all involved make the investment well-leveraged.

Organizing an OSCE is a major undertaking and, as with most other educational projects, requires strong and committed leadership. Many individuals are needed for planning, preparation, implementation, and evaluation. The production of a successful OSCE may result in a powerful synergy capable of invigorating educational programs. The event itself brings together faculty, learners, and staff to put their efforts towards a common goal. OSCEs produce meaningful experiences and useful data. Despite the stresses and risks involved, most people leave the event recognizing the value and feeling enriched.

In the rest of this chapter, we define key terms and review the history of OSCEs and SP programs and their current applications. Chapter 2 provides a detailed, comprehensive ten-step approach to the process of OSCE design and implementation. Each section concludes with a list of best practices or guidelines. Chapters 3 and 4 are devoted to emerging issues. Good OSCE data predictably identify and indicate strategies for helping learners in need of remediation, as surveyed in Chap. 3. Looking beyond the training context, Chap. 4 explores how demands for more "in vivo"

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assessment can be met through the use and implementation of incognito or unannounced SPs (USPs) in clinical settings. The Appendices at the back of this book contain blank versions of all the forms and worksheets included in the main text, sample OSCE cases and checklists, and suggested further resources.

Definitions

Standardized patients (SPs) are individuals who portray a specific clinical case in a consistent. Typically they are not afflicted by the bio-psychosocial conditions they are depicting. Rather, they are simulating clinical problems solely for the purpose of training and assessment. When SPs were introduced to medical education by Howard Barrows in 1963 they were called "programmed" patients (Barrows and Abrahamson 1964) to reflect the educator's ability to shape the scenarios in order to meet curriculum or assessment needs. In the 1980s the term "simulated patient" became popular. With increasing use in assessment and the corresponding need for controlling the test stimulus, "standardized patient" is often times the preferred term, especially in North America.

Objective structured clinical exams or exercises (OSCEs) are training or assessment programs in which learners rotate through a series of time-limited "stations." In encounters with SPs in each (or most) of a series of stations, the learner is asked to perform specific tasks that are kept constant across all trainees. Rating forms with predetermined performance criteria are used to assess the learner's performance in a standardized fashion. Figure 1.1 illustrates the SP cases a learner might encounter in a ten-station OSCE.

History and Current Use of SPs and OSCEs

In 1963 Howard Barrows, then at the University of Southern California in Los Angeles, hired a healthy woman to simulate the case of a paraplegic patient with multiple sclerosis for his neurology clerkship students. This was the introduction of SPs into medical education (Barrows and Abrahamson 1964). Beginning in the early 1970s Paula Stillman, then at the University of Arizona, used simulated mothers for teaching interviewing skills. She also created the Arizona Clinical Interview Rating Scale (ACIR) (Stillman et al. 1977) which is still used in some OSCEs today. Barrows and Stillman can

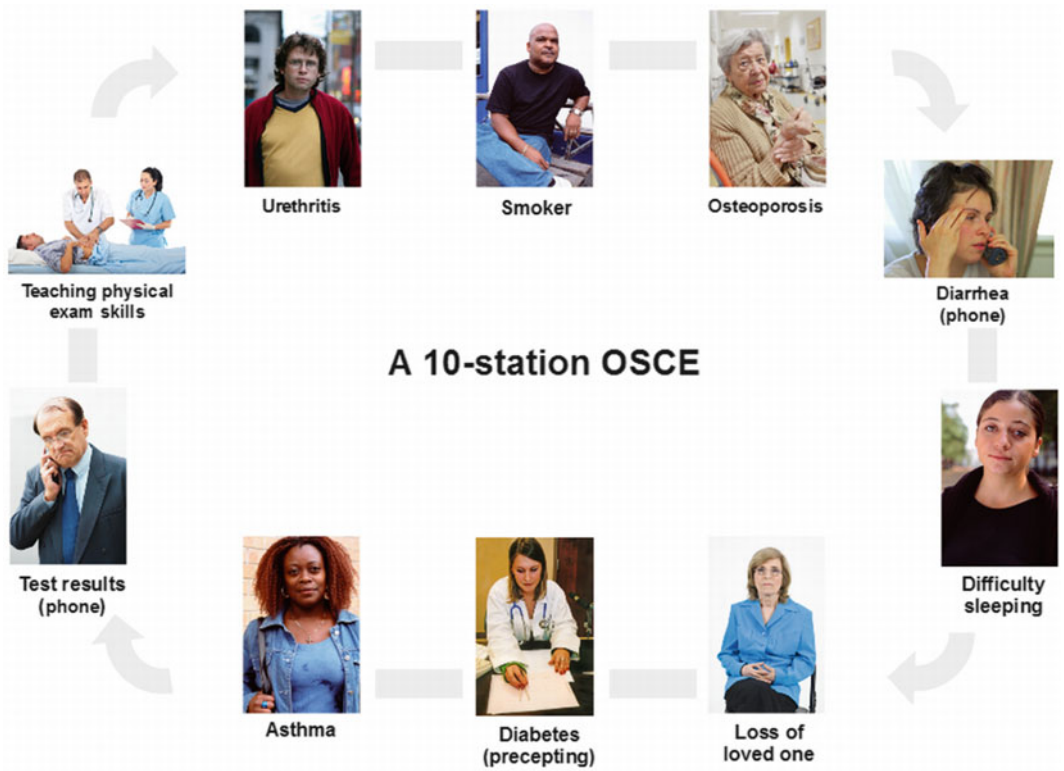

Fig. 1.1 A ten-station OSCE: Circuit of SP scenarios (i.e., stations) through which learners rotate

be considered the originators of a worldwide movement to use SPs in health professions education.

In 1992, the Association of American Medical Colleges (AAMC) organized a national consensus conference on SPs (Anderson and Kassebaum 1993). Since then, the field has expanded further and standards of practice have developed for the use of SPs (Adamo 2003). In 2001 the Association of Standardized Patient Educators (ASPE) was formed, creating an international network of professionals devoted to SP work and research. Annual conferences, an active listserv, and an extensive Web site (www.aspeducators.org) offer the opportunity to exchange resources (e.g., cases, SP contact information, references, moulage techniques to simulate physical signs) and to develop best practice guidelines.

OSCEs originated in Dundee, Scotland, in the early 1970s. Ronald Harden (see the Foreword of this book) and his colleagues published the first article describing these multiple station exams (Harden et al. 1975). By September 1983, Emil Petrusa and his colleagues at the University of Texas Medical Branch (UTMB) in Galveston, TX mounted the first such exam for about 140 Internal Medicine clerkship students. It consisted of 17 station pairs, a total of 34 stations, each 4 min in length. The project was presented at the annual AAMC meeting in the fall of 1984 (Petrusa et al. 1984). Two years later, in the spring of 1986, one of this book's coeditors (Kachur, then at Albert Einstein College of Medicine) organized the first OSCE in the New York City area. Other early adopters in the United States included Southern Illinois University (SIU) and the University of Massachusetts (UMass). Worldwide there were many countries which held their first OSCEs in the late 1970s and early 1980s. These include Canada, Australia, The Netherlands, Ireland, Sweden, and South Africa.

In the 1990s, The Macy Foundation funded a national consortium of six regional consortia that embraced a total of 28 US medical schools in an effort to promote performance-based testing. The initiative resulted in the publications of some 30 articles (e.g., Morrison and Barrows 1998; Yedidia et al. 2003) that advanced the field in areas such as case and rating form development and scoring, exam impact on the curriculum, SP performance quality control, and SP versus faculty observers.

Also in the early 1990s, the Educational Commission for Foreign Medical Graduates (ECFMG) developed a growing interest in performance-based assessment to assure adequate clinical competence and English proficiency of international medical graduates (IMGs). This led to extensive pilot testing that further expanded the field (e.g., Sutnick et al. 1993). By 1998 the ECFMG had created a secure assessment center in Philadelphia, PA and fully implemented its Clinical Skills Assessment (CSA) as a requirement for all IMGs who wanted to take up postgraduate training in the United States. Six years later, in 2004, the NBME followed suit and opened five testing centers around the country. Since then all US medical graduates and all IMGs are mandated to complete Step 2 Clinical Skills (CS) of the US Medical Licensing Examination (USMLE; www.usmle.org/step-2-cs/). The National Board of Osteopathic Medical Examiners (NBOME) administered its first Comprehensive Osteopathic Medical Licensing Examination Level 2—Performance Evaluation (COMLEX-USA Level 2-PE, www.nbome.org/comlex-pe.asp?m=can) in also 2004. The first Medical Council of Canada Qualifying Examination Part II (MCCQE Part II, www.mcc.ca/en/exams/qe2/), by contrast, was held in 1992 (Boulet et al. 2009). Table 1.1 compares key features of the USMLE Step 2 CS, COMLEX-USA Level 2-PE, and MCCQE Part II, three largely compatible licensing OSCEs.

Overall, the United States has not been one of the early adopters of OSCE methodologies. For example, the Canadian Certification in Family Medicine nationwide licensing exam (www.cfpc.ca/FMExam/) was initiated already in 1970 (Lamont and Hennen 1972) and was delivered in English and French from the start. Since OSCEs originated in the UK, Commonwealth connections and United Nations grants fostered the initial dissemination around the globe. Hence the interesting journey of the OSCEs to the United States via Canada. For a more extensive history of the OSCE, readers can explore Brian Hodges' (2009) social history of the exam, which explores how discourses of performance, psychometrics, and production have propelled the development of this educational method.

Many training programs worldwide are now using SPs and OSCEs extensively as a summative assessment of learner competence, and increasingly programs use OSCEs to measure the effect of their curricular interventions. OSCEs have even been introduced as an admissions screening tool (Harris 2011). Many content areas have been addressed with the help of OSCEs. These include complex communication, physical exam, and procedural skills such as cultural competence (Zabar et al. 2006; Aeder et al. 2007; Altshuler & Kachur 2001), genetics (Altshuler et al. 2008), gastroenterology (Chander et al. 2009), substance abuse (Parish et al. 2006), and teaching skills (Zabar et al. 2004). In combination with other assessments, SPs and OSCEs allow programs to both educate and assess learners, ensuring clinical competence (Kachur 2007).

How Can SPs and OSCEs Satisfy National Competency Guidelines?

As Table 1.2 illustrates, each individual OSCE station can address multiple competency assessments in Undergraduate, Graduate, and Continuing Medical Education. Over the last few years there has been a clear movement to accept the ACGME Core Competencies (2001) as the standard for the entire continuum of medical education in the United States. Other countries have developed similar competency

Table 1.1 US and Canadian Performance-based Licensure Exams (administered towards the end of medical school or within the first postgraduate year)

Exam name	Year initiated	National Administration	OSCE structure	Key domains	Scoring and reporting
USMLE Step 2 CS (United States Medical Licensing Examination Step 2 Clinical Skills)	2004	• Year-round • 5 regional test centers • Center-based SP trainers and SPs • Multiple test versions	• 12 graded stations + ? exploratory stations • 15 min encounters + 15 min patient note writing • SPs rate encounters, physician raters for patient note	1. Integrated clinical encounter (i.e., history taking, physical exam, documentation) 2. Communication and interpersonal skills (information gathering/sharing, establishing rapport) 3. English proficiency	• Each candidate must to pass each domain
COMLEX-USA Level 2-PE (Comprehensive Osteopathic Medical Licensing Examination Level 2—Performance Evaluation)[a]	2004	• Year-round • 1 national test center • Center-based SP trainers and SPs • Multiple test versions	• 12 graded stations + 2 exploratory stations • 14 min encounters + 9 min written patient note • SP raters for encounters, physician raters for post-encounter notes and OMT (via video tape)	1. Doctor–patient communication and professionalism 2. Data gathering (i.e., history taking, physical exam) 3. Documentation and synthesis of findings 4. Osteopathic principles and OMT	• Station scores are compensatory but candidates must pass the Humanism (SP-only ratings) plus the Biomedical/Biomechanical domains (SP and physician ratings)
MCCQE Part II (Medical Council of Canada Qualifying Examination Part II)	1992	• Spring and fall • Multiple university-based test sites • Local SP trainers and SPs • Multiple test versions	• 12 graded stations + 2 exploratory stations • 10 min encounters or 5 min encounter + 5 min written task • Physician rater in room	1. Data gathering (i.e., history taking, physical exam) 2. Patient interaction 3. Problem solving and decision making 4. Legal, ethical, and organizational issues	• Each station has equal value • Criterion-referenced

[a]Osteopathic medicine (not to be confused with chiropractic) is equivalent to allopathic medicine except that it focuses more on primary care, neuromusculoskeletal causes of disease and it includes osteopathic manipulation treatment (OMT) (see www.aacom.org for more information)

Table 1.2 Potential coverage of national and international competency standards through OSCE stations (adapted from Kachur 2007)

	Undergraduate medical education (AAMC Medical School Objectives Project 1998)					
	Physicians must be skillful		Physicians must be altruistic	Physicians must be knowledgeable	Physicians must be dutiful	
	Graduate Medical Education (ACGME 2001)					
	Patient care	Interpersonal and communication skills	Professionalism	Medical knowledge	Practice-based learning and improvement	System-based practice
	Continuing Medical Education (IOM 2003)					
	Provide patient-centered care			Employ evidence-based practice	Apply quality improvement; utilize informatics	Work in interdisciplinary teams
	International Standards (Royal College of Physicians and Surgeons of Canada 2005)					
Potential SP or station scenarios	Health advocate	Communicator	Professional	Scholar	Manager	Collaborator
Initial work-up of patient with undifferentiated problem (e.g., fatigue, cough)	X	X	X	X		X
Prevention counseling (e.g., smoking cessation, immunization)	X	X	X	X		X
Discuss management of chronic disease with patient	X	X	X	X		X
Telephone follow-up of lab results (e.g., cholesterol test, PPD)	X	X	X	X		X
Chart review (e.g., discuss chart note indicating medical error with colleague)		X	X	X	X	X
Precept a medical trainee (e.g., physical diagnosis, patient management)	X	X	X	X	X	
Perform an online literature search and discuss findings with a patient	X	X		X	X	X

The table suggests how the AAMC Learning Objectives for Medical Student Education, the ACGME Core Competencies, the IOM Competencies Required of All Health Care Professionals, and the six overlapping roles of the Medical Expert in the CanMEDS Physician Competency Framework can be aligned and specifies some SP scenarios suitable for assessing each competency

frameworks and OSCEs are frequently mentioned as an efficient and effective teaching or assessment tool.

CanMEDs is the model that was developed by the Royal College of Physicians and Surgeons of Canada. The CanMEDs model originated in 1996 and was updated in 2005. It envisions the responsibilities of physicians as a collection of six core roles which together characterize the Medical Expert: Communicator, Collaborator, Manager, Health Advocate, Scholar and Professional (Royal College of Physicians and Surgeons of Canada 2005). Its popularity has gone way beyond the Canadian borders. Over the years various OSCE reports have plotted stations against this framework (e.g., Jefferies et al. 2007; also see Table 1.2 for an illustration of how the CanMEDs roles are compatible with other accepted competency frameworks).

In Europe the latest effort to harmonize medical education includes the two-level Tuning Project (Medicine) for undergraduate medical education, which specifies 12 core Outcomes expected of all medical school graduates, regardless of what European country they are from, as well as specific performance Competencies which can easily be assessed in OSCE stations (Cumming and Ross 2008).

Worldwide there are efforts underway to transform time-based education (i.e., requiring a certain length of training in terms of months or years) into competency-based education (i.e., requiring the demonstration of specific competencies as requirement for promotion). Since OSCEs are capable of assessing many core competencies regardless of the framework utilized, they are likely to become an even more prominent assessment tools in the future.