

A Guide for Medical Students and Residents Preparing for Formative, Summative, and Virtual Objective Structured Clinical Examination (OSCE): Twenty Tips and Pointers

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Abstract: The most important core competencies for medical learners to master are reviewing history, performing physical examination, communication skills and clinical reasoning. The Objective Structured Clinical Examination (OSCE) provides a consistent, reliable, and valid assessment of these integrated skills and is considered to be the gold standard. OSCEs are advantageous because they provide opportunities in evaluating skills that written tests cannot do (stage 3 of Miller’s Pyramid of Learning). In this article, we have provided tips and helpful pointers to medical students and residents, based on available literature and authors’ expertise in managing formative, summative, and virtual OSCE experiences. In virtual OSCEs, in-person learning objectives need to be modified to the virtual milieu and new competencies such as “websites manner” need to be introduced. Harmonizing the process and content of the OSCEs create operational challenges, thus learning the various moving parts of the OSCEs such as psychometrics, tasks of the standardized patients and checklists will ease optimal performance.

Keywords: OSCE, checklist, virtual OSCE, assessment, reliability, validity

Introduction

Examinations are ubiquitous in the lives of medical students. The Objective Structured Clinical Examination (OSCE) is a high-stake clinical assessment that evaluates a broad range of competencies, including history taking, physical examination, communication/interpersonal skills, professionalism, clinical reasoning, and telemedicine—which has gained importance since the COVID-19 outbreak—and the ability to integrate these skills. Effective summative assessment using OSCE (sOSCE) is a time consuming, demanding, and costly operation. OSCEs are exceptional and distinctive in assessing competencies that are difficult to evaluate using other methods. OSCEs have superior psychometric properties. The psychometric attraction of the OSCE is that it assesses the “shows how” level of the Miller’s Pyramid with reliability and validity.¹ The tips provided are based on available literature and authors’ expertise in managing formative, summative, and virtual OSCE experiences. Formative OSCEs are assessments FOR learning; they do not count toward a final grade and are for self-assessment purposes only. Summative OSCEs are assessments OF learning that count toward a grade. It has

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been said that “When the cook tastes the soup, that’s formative; when the guests taste the food, that’s summative”.

Virtual OSCEs

In view of the current times, the severity of the COVID-19 pandemic, and its effect of the administration of all types of OSCE experiences, face-to-face OSCEs have been converted to an online or hybrid format; as a result, tips on virtual OSCEs (vOSCE) have been provided as well. The pandemic has presented educators and learners with several challenges in conducting realistic OSCE experiences. Medical schools have become very adept in using technologies for the continuation of this educational experience. vOSCE is an emerging model for administration of OSCEs. The majority of medical schools in North America have avoided face-to-face learner/Standardized Patient (SP) contact. Very few medical schools provide telemedicine/TeleOSCE instruction to medical students.² Despite the impediments posed by COVID-19, telemedicine has flourished, and it has been a glimmering highlight that advances medical students’ knowledge of this new technology through virtual OSCEs. Transitioning to a virtual videoconferencing mode, will necessitate dramatic changes to the administration of vOSCEs. Assessment endpoints needs to be consistent, thus educational objectives need adaption to the virtual milieu. Attributes of digital communication and “webside” manners need to be introduced. Furthermore, standardized patient training methodologies will require translation from in-person to the new environment as well. In the virtual environment, the medical history is obtained from the standardized patient, and the intended physical examination maneuver is verbalized by the learner. Virtual OSCEs necessitate the use of reliable digital videoconferencing technologies. Numerous commercial platforms are available. Training needs to be provided to learners, SPs, staff, and faculty for a seamless experience. Pre-brief session instructions are delivered in a virtual waiting room. Subsequently, each dyad (learner and SP) enters a timed virtual breakout room. A major challenge to overcome for the learner is optimization of engagement and non-verbal communication. This can be mitigated by explaining the encounter steps to the SP as the session evolves. Optimal camera positioning for appropriate framing will enhance the experience.

The Standardized Patient

SPs are actors/laypersons who are highly trained to portray patients in OSCE stations for the purpose of teaching and assessment. Their performance is routinely monitored, evaluated, and reviewed by SP trainers and faculty. This is different from peer role play, in which the participants have no prior training. SPs do not replace real patients, are faithful to the standardization of the scenario case portrayal and are not supposed to express personal originality or inventiveness.

OSCE Checklists

Most formative OSCEs and some sOSCEs utilize non-binary checklists³ as well as various global rating instruments. Notwithstanding the use of checklists by SPs for grading, it should be noted that an OSCE assessment is not a prescriptive checklist performance, as every encounter is distinctive, has its own “climate”, and needs to be customized to the door note/SP presentation. A successful OSCE depends on having a growth mindset and adjusting the process to the content.

Psychometrics: Reliability, Objectivity, Feasibility and Variability of OSCEs

Over the years, the evaluation of medical students’ clinical skills and performance has evolved from direct observation to OSCEs.¹ With the exception of cost, this assessment format optimizes a number of variables such as objectivity, reliability, validity, and feasibility. The reliability of the summative OSCE, covering a wide curriculum, is increased by a large number of stations. The number of OSCE stations that are sampled vary from one medical school to another, from 5 to more than 15.⁴ However, 12 to 16 stations will cover a good range of content and provide an acceptable level of reliability (0.6 to 0.7).⁵ Rigorous training and assessment of SPs and the use of checklists ascertain the objectivity of an OSCE station. OSCEs have modest validity.⁶ In order to be valid, OSCE stations must assess a wide array of knowledge, skills, and attitudes that reflect the scope of the curriculum. Faculty will not conduct OSCE experiences on aspects that are not clearly defined in the medical school’s course objectives or suited to the learners’ level of experience. The complexity of the scenarios can vary reasonably by faculty to accommodate the training level of the learners. To be feasible, an OSCE station, to some extent, needs to be straightforward and easy to manage.

OSCEs are very resource intensive and take an astonishingly long time develop; it has been said that “instructional systems designs traditionally follow a multistage, iterative model.”⁷ This four-step process includes: Needs Assessment, Program Development, Design and Implementation, and Evaluation.⁷ Consideration should also be given to time, complexities of case development, number of available SPs, and faculty training.

The following compilation of 20 tips and pointers can help guide medical students preparing for OSCEs:

Statistically, You are a Safe Bet

Most medical students and residents are successful in OSCEs. Although some face challenges and a few even fail OSCEs, the best solution is preparation and deliberate practice. Based on the experience of the authors, they can conclude that the most participants who have challenges in OSCEs need additional deliberate practice.

The Milieu

Know the environment of the clinical center and the OSCE venue. Take a tour before the OSCE experience. Most centers will be happy to give you a tour.

Read the “Door Note”

The “door note” used to be a clipboard; however, these days, it is a screen document. In some centers it may still be written on a clipboard. This is one of the most common causes of applicants not performing well in OSCEs. Because the door note is the road map of the station, time should be taken to read it carefully and follow its instructions. Do not do more than is asked or less than is directed. You must follow it exactly as you are told. If the instructions ask you to verbalize your physical examination in virtual OSCEs, you may use clinical terminology. If the instructions ask you to perform a toe examination, do not waste your time reviewing the history or the management. The SPs are provided with a pre-determined checklist and grade your performance accordingly. No extra grade is given. More is not always better.

Appropriate Use of Language and Avoiding Medical Jargon

It is imperative to avoid the use of medical jargon. Learners need to use simple laypersons’ language that will be understandable to someone with a fifth-grade education. Do not ask: “Why were you admitted to the sick-you (SICU) after surgery?” Instead, ask: “Where were you

admitted after surgery?” If you use medical jargon, the SPs will act confused and may seek further explanation.

Rapid-Fire Questions

Avoid asking multiple rapid-fire questions strung together. In such situations, SPs are advised to answer only the last question put forth to them. An example of such a multiple, rapid-fire question would be: “You seemed to be concerned about lung cancer. Do you smoke, drink, or cough up blood? Incidentally, what kind of work do you do and for how long have you been doing it?”. This line of questioning is confusing to the patient and does not give the SP adequate time to mentally process what is being asked.

Starting the Encounter: Pre-OSCE Checklist

The mnemonic device WIPERS can be used after you enter the room and close the door. Establish rapport early, at the beginning of the encounter. Let the patient talk and do not interrupt; where appropriate, express empathy.

WIPERS

- Wash your hands
- Introduce yourself and convey your role.
- Patient’s name, date of birth, and what they like to be called should be noted; personal protective equipment (PPE) should be donned
- Explain why you are here (eg: “I was sent here to see you about your headache by my preceptor”) and demonstrate empathy. Expose the area to be examined/ensure adequate draping. Enquire about pain
- Right sided approach^{8,9}
- Stethoscope should be cleansed with an alcohol swab

Nonverbal SOFTEN Skills

Patients are clued to the nonverbal behavior of the providers; thus, this mnemonic will be very helpful when dealing with SPs. Moreover, these are easy points in the checklist.

The “SOFTEN” mnemonic is used to enhance nonverbal behavior during the SP encounter.

“SOFTEN” nonverbal communication skills.

- Smile: welcomes patients.
- Open posture: you are ready to interact.
- Forward leaning: you are interested.
- Touch: handshake – avoid during Covid-19.

- Eye contact: do not get distracted by charts, computers, etc. Pay attention.
- Nod: encourage patients to talk.

The History of Present Illness (HPI)

As the “HPI: Timeline, not a Time Machine” reveals,¹⁰ time is the main organizational element. Always begin with a starting point in mind: “When were you well before all this started?” The chronology of the story should begin at the baseline state of health and the narrative should develop and flow smoothly, in an insightful and judicious fashion, while managing the psychological safety of the patient. A diagnosis cannot be made without taking an all-inclusive and appropriate HPI. That being said, you cannot take the HPI without knowing how to do it. Do not forget to enquire about the setting and its effect on the patient’s day to day activities. Taking the HPI is probably the most important and difficult requirement of the OSCE. Always use a structured, fluent, and laser-focused approach.

About the SP

An SP is an actor who has been faithfully trained to simulate a patient in the domains of history and physical, communication, and other necessary clinical skills with an authenticity that often cannot be distinguished by expert clinicians. In reality, the OSCE is a staged play¹¹ that requires certain predetermined skills to be learned. Remember that SPs are actors, most of whom have been recruited from local theaters. That being said, this is not a mindset that medical students want to have. The key to success is think of SPs as real patients. SPs take their tasks very seriously, have to pass competency tests for each case, and are even re-assessed after performances if learners fail or if there are complaints.

OSCE is an Immersive Experience

An OSCE is an immersive experience and it is imperative to treat the SPs as real patients. Additionally, it is crucial to accept the SP’s chief complaint as real and immerse oneself into the medical context of the simulation. In reality, the SP should be treated as the “question” in an examination. It is important to note that SPs rarely go off-script and will not provide all answers unless they are asked.

Integrate Ideas, Concerns and Expectations: Patient’s Perspective

ICEing the patient at the end of the HPI—using the mnemonic ICE for Ideas/Impact, Concerns, and Expectations

—involves asking the patient what s/he thinks is happening and how it has impacted his/her daily life as well as identifying what is worrying him/her and determining his/her expectations from treatment.

Signposting/Transitional Statements

Signposting imparts structure and organization to the OSCE experience. It engages the SP and lets him/her share your thoughts. Acknowledge what you have discussed and use it to link the topic you will be asking subsequently (eg: “So you have talked to me about your chest pain; next, I would like to discuss your risk factors for coronary artery disease”).

Starting the Physical Examination

Before you start the physical examination, it is useful to consider the mnemonic device SET UP:

- Site: patients should be examined on the examination table.
- Exposure: patients need to be draped appropriately.
- Time: the room clock should be discreetly monitored.
- Utensils: all the equipment should be ready before you start; for example, if you are examining a diabetic foot, take out your monofilament and tuning fork; alternatively, if the center provides you with the medical equipment, ensure that you use them.
- Protection: appropriate PPE should be donned, and equipment should be cleansed. It is anticipated that with the advent of COVID-19, centers will provide the necessary instruments.

Summary Statement Should Be Succinct

At the end of the OSCE experience, a summary statement is expected and should be discussed with the SP. The summary statement heralds the end of the session, with the aim of restating the important salient information that you have obtained and is needed for continuity of care. It should always explain the next steps that will be taken. This will give the SP a chance to clarify the information if necessary. An example would be:

“I know that, until now, I have given you a lot of information; at this time, I will summarize and discuss my findings, which will give you a chance to clarify the information and ask questions as well”.

A concise summary statement will bring the session to a smooth close.

Watch the Clock in Psychiatry OSCEs

Interviewing real psychiatric patients is time consuming; instead of 60 minutes, your interview will have to be completed in 8 minutes in OSCEs! Remember that OSCEs are mock situations, with SPs, simplified scenarios, and impractical time constraints. The core framework of the psychiatric interview makes undergoing an OSCE station a challenging experience. The key to success is reading the door note carefully, watching the clock, and ensuring not to waste time. Do not perform a mental status examination unless the door note instructs you to do so.

Efficiency is the Key in Psychiatry OSCEs

Efficiency is the key to psychiatric interview stations; always enquire about the following:

- Whether the patient has ever experienced an issue similar to this before (*déjà vu*) and how it was handled.
- Forensic history (past criminal activity, any incarceration).
- Suicidal and homicidal ideation, plan, and intent.

Webside Manner/ Digital Interpersonal and Communication Skills

Interactions with patients via videoconferencing are referred to as one's "webside manner". This is a new competency domain for vOSCE sessions and a modern twist on bedside manner. Appropriate webside manner¹² will add to patient satisfaction and better outcomes.¹² The key elements of webside manner are: "proper set up, acquainting the participant, maintaining conversation rhythm, responding to emotion, and closing the visit."¹³ Enquiries should be made as to whether the SP can hear or see with technology. You should be patient-centered and focused at all times, and all distractions with the computer interface should be explained in real time. When reviewing the electronic health record (EHR), verbalize what you are doing. Similar to bedside manner: "possessing nuanced verbal and nonverbal webside manner skills is essential to conducting serious illness conversations during virtual visits".⁷ After your summary, ask the SP to echo back your recommendations.

Clinical Skill Assessment (CSA)

It is important to understand the difference between an OSCE and a Clinical Skill Assessment (CSA), also known as an integrated OSCE (iOSCE). The CSA assesses the

medical learner's ability to integrate and apply multiple skills in each station, e.g., communication, physical exam, diagnostic, and professionalism.¹⁴ This why it is of utmost importance to read the door note carefully.

Grading

OSCEs are performance-based assessments that present all candidates with the same challenge. Scoring, when performed by SPs, is accomplished using checklists. The SPs ratings are improved using non-binary ratings. SPs rate whether an action/question was not done, attempted, or done. It is important for learners to verbalize what they are performing during the physical examination to get the point in the checklist and, thus, improve the overall score. As noted earlier, global rating scores may be used when grading is done by trained examiners.

OSCE Imposters

OSCE stations are either dynamic or static. Dynamic stations assess clinical competency skills, are "manned" with an SP, and are interactive. Static/ "question" stations are called pseudo-OSCEs and assess knowledge. Although learners interpret electrocardiograms (EKGs), chest X-rays (CXRs), arterial blood gases (ABGs), and other tests, no actual clinical tasks are involved. The approach to pseudo OSCEs should be the same as answering a multiple-choice question. These types of OSCE pretender stations are not being used frequently and, in reality, contravene the sound educational underpinnings of a solid clinical skill assessment program. Studies on the reliability and validity of OSCEs are based on learners performing clinical tasks.

Conclusions

OSCEs are reliable and valid instruments of assessment for medical students and residents. They can be formative or summative. Success in OSCEs (in-person and virtual) is process and content dependent. We have encapsulated a series of practical and actionable approaches for medical students and residents. Understating these specific tips and strategies will improve and optimize the OSCE experience.

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