

Objective Structured Clinical Examinations (OSCE): Getting Started

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Background

- Traditional assessment methods useful for evaluation of knowledge, but not necessarily of skills
- Clinical skills represents amalgam of clinical knowledge and communication/interpersonal and problem-solving skills
- Performance based assessment provides unique vehicle for measurement of clinical skills

OSCE

- Objective
- Structured
- Clinical
- Examination
- Widely used in medicine since 1990s, including the licensing examination of the Medical Council of Canada

The OSCE Format

- Consists of multiple self-contained or sequenced stations, each of which requires the candidate to perform a specified task/series of tasks
- Built upon a *blueprint* to ensure adequate sampling of the content domain and process skills

The OSCE Format

- Each station is based upon blueprint specifications, and designed to conform to a specific format
- Stations may be interactive or non-interactive but require the candidate to demonstrate both clinical knowledge and specific communication or psycho-motor skill(s)

The OSCE Format

- When assembled, the OSCE represents a broad yet deep sampling of content and skills expected within a specified field
- Validation of stations essential to ensure they are truly representative
- Psychometrics examination of results to ensure reliability, generalizability, and dependability of results

History of the OSCE

- First proposed in 1960s, implemented widely in medicine in 1970s
- Response to decreasing availability of real-world patients due to health care restructuring, liability concerns
- Ability to develop simulations with a high degree of psychometric stability

OSCEs in Pharmacy in Canada

- “Panel” examination of the College of Pharmacists of British Columbia
- Teaching OSCEs (TOSCEs) at the University of Toronto
- Quality Assurance/Peer Review Process of the Ontario College of Pharmacists
- Pharmacy Examining Board of Canada Qualifying Examination Part II

Why OSCE?

- Measurement of communication skills
- Integration of communication skills with clinical knowledge
- Safety of patients
- Standardized assessment
- Uniquely capable of evaluation of clinical skills in simulated real-world environment

Why not OSCE?

- Not efficient for assessment of knowledge alone
- Logistics issues
- Expense issues
- Development is time-consuming and costly; maintenance of stations requires on-going commitment

Principles for use of OSCEs

- Performance based assessment must be matched with performance based teaching
- “Format anxiety” must be addressed
- Ecological validity of stations must be ensured
- Standardization of simulations must be achieved

Development of an OSCE

1. Blueprinting
2. Station development
3. Case writing
4. Case Review and Validation
5. Standard Setting
6. Piloting
7. Assembly of OSCE

Blueprinting

- Process of defining content domain and process skills to be assessed
- Based upon outcomes, expectations, or standards
- Level: defines complexity of performance expected
- Range: describes scope of performance expected

Levels and Ranges

Simple Patient	Complex Patient
Simple Problem	Simple Problem
Simple Patient	Complex Patient
Complex Problem	Complex Problem

Defining Levels and Ranges

Attributes of “complex patient” include:

- Psycho-social issues
- Affect
- Language barrier
- Physical abilities
- Cultural Issues
- Financial Issues

Defining Levels and Ranges

Attributes of “complex problem” include:

- Multiple disease states
- Multiple DRPs
- Unusual/rare medical conditions
- Unusual/rare medications

Levels and Ranges

<p>Patient has a cough requiring self-medication and has no allergies, medical conditions or complicating factors</p>	<p>Patient with a language barrier has a cough requiring self-medication and has no allergies, or medical conditions</p>
<p>Patient has a cough and is taking ACE-inhibitors and a statin but also has a low-grade fever and muscle aches/pains</p>	<p>Patient with multiple disease states unable to swallow oral medications is experiencing a cough</p>

“The Minimally Competent Student”

- A fictitious concept, but one based on reality
- May be an amalgam of various students
- Able to meet ALL performance standards/expectations but at the most basic level

Blueprinting Exercise

1. What are the general characteristics of the “minimally competent” student, based on your experience?
2. What are the specific outcomes or learning objectives such a student will be required to fulfill?

Blueprinting Exercise

“Prior to commencing clerkship rotations, the minimally competent student must be able to....”

- Define levels
- Define ranges
- Utilize examples as a way of depicting levels and ranges

Blueprinting Exercise

3. Compile a list of specific CONTENT objectives students ought to have achieved

(e.g. Prior to commencing rotations, the minimally competent student must know/understand/describe...)

Blueprinting Exercise

4. Compile a list of specific PROCESS objectives students commencing clerkships ought to have achieved
(e.g. *Prior to commencing rotations, the minimally competent student must be able to...*)

Validation of Blueprint

- *Criticality* of tasks and processes described (“do they have to be able to do this”)
- *Frequency* of tasks and processes described (“will they be required to be able to do this”)
- *Relevancy* of tasks and processes described (“are they generally expected to be able to do this”)

From Blueprint to Station

- Optimal number of stations varies depending on nature of assessment
- More stations may improve reliability, validity, generalizability and dependability; however more stations may not be feasible or cost-effective
- In general, determination of number of stations required is a function of psychometric profile of each stations

From Blueprint to Station

- Generally, need between 5-15 stations for optimal examination
- Number will vary based on purpose: diagnostic, cut, or teaching

From Blueprint to Station

1. Define nature of station based on content and process objectives
2. Define level and range of station
3. Ensure optimal “mix” of station and patient types across stations

Summary

- Blueprinting is a complex and somewhat time consuming process
- Importance of blueprinting is a function of type and stakes of examination
- Major objective of blueprinting is to ensure ecological validity of assessment
- Effective blueprinting can significantly enhance efficiency of station development process