OSCE TESTS
(Experience of the local Orthopaedic Unit)

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Extent of the talk

- What is assessment?
- What are recent trends in assessment in Orthopaedics?
- Why OSCE?
- History of OSCE in the local Orthopaedic department?
- What is the present status of OSCE in Orthopaedics.
- Recent trends in the other departments
Reasons for Assessment

• To help the student learn
• This is called **Formative Assessment**

• To assess the mission of the institution
• This is called **Values Assessment**

• To test competence
• This is called **Summative Assessment**

• To assess course outcomes
• This is called **Programme Assessment**
What needs assessing?

- Cognition or the processing of information
- Knowledge

- What are other 3 things?
  - Skills
  - Attitude
  - Communication
**Reliability**

- The assessment must measure the students’ performance consistently.

**Characteristics of Assessment**

- Every time the student is assessed a similar mark must be obtained.
- Strong students must score highly every time they take the examination and poor students must score low consistently.
There are 4 other characteristics of assessments...

- **What are they?**
- **What do they measure?**
osce test

**Acceptability**
- It must be acceptable to patients, students, and examiners
  - This refers to privacy, examination duration, patient fatigue, and marking time

**Reliability**
- The assessment must measure the students’ performance consistently

**Validity**
- Assessment must measure what you want to measure

**Feasibility**
- It must be feasible in terms of resources
  - There must be sufficient numbers of examiners with sufficient time and training to make the examination feasible

**Educational Impact**
- The assessment must drive learning
  - If students are required to have clinical skills, then these must be tested by an assessment which will motivate the student to acquire these skills

**Characteristics of Assessment**
Miller’s triangle

From Basic to Abstract

Does

Shows how

Knows how

Knows

From Simple to Complex
Selection of the assessment technique

• Can be based on ‘Miller’s Triangle’
Assessment of ‘knows’

- **Knows**
  - = straight factual recall of knowledge
  - Multiple choice question
    - A variety of formats
      - True/False
      - Single best answer
      - Extended matching questions
    - Only trivial knowledge tested
  - As active generation of knowledge is avoided
Assessment of ‘knows how’

• **Knows how**
  – application of knowledge to problem solving and decision making
  – **Essays & Oral Tests**
    • Problems in standardizing
    • Inconsistency in marking
  – Despite this oral test are popular in UK
    • Ability to recall & synthesise best assessed

• **Short answer written formats**
Assessment of ‘shows how’ and ‘does’

- ‘Mini CEX format’
  - Observation of history taking
  - Physical examination
  - Part management of case

- OSCE
  - Globally well established.
OSCE

- **Addresses problem of:**
  - Adequate sampling
  - Standardisation
    - Each case with same examiner
  - Improves reliability

- **Loss of validity**
  - Cannot address complex skills requiring integrated judgement
OSCE

• OSCE is proving less objective than initially thought:
  – Scoring against checklist is not ideal
  – Global rating may be ‘ideal for judging performance’.

• Rater training is essential
  – Ensure consistency
OSCE

• Standardised patient Vs Real patient
• Simulated patient
  – extensive training
    • For reproducibility
    • Consistency of scenarios
• OSCE ≠ Real life performance
Local History of OSCE.

- 1984
- Interaction with educators from Canada
- PBL & OSCE
Past Examination

• Pathology Museum
  – NUH Level 3

• 75 students were examined at one time
  – 5 clinical cases
    • Foot drop
    • History taking

  – 5 stations
    • Projection
    • Pathology specimen
Examples Radiographs

These are X-rays of a 5-year-old boy who complained of pain in his left hip for about 6 months duration. Clinical examination revealed a shortened left lower limb and left hip movements were restricted.

(a) Describe the features seen on the pelvic X-ray.
(b) What is the diagnosis?
(c) What is the natural history of this condition?

This is a 50-year-old female who presented to the clinic with progressive pain in the left forefoot.

a. Describe the deformity shown in the photograph.
b. Describe the possible causes of pain in this patient.
c. Outline the management of this patient.
Examples clinical cases

a. Describe the disability.
b. Diagnosis
c. The appropriate investigation should be

This is a 50-year-old female who presented to the clinic with progressive pain in the left foot.

a. Describe the deformity shown in the photograph.
b. Describe the possible causes of pain in this patient.
c. Outline the management of this patient.
Example Photographs

This sixty-five year old gentleman presented with pain and swelling in the arm after arm wrestling with his neighbour.

a. What is the physical sign demonstrated?
b. What is the cause of the swelling?
c. What is your recommended treatment?
Reintroduction

• Reintroduced OSCE test end of posting assessment as of July 2007.

• I had 5 years experience of taking part in OSCE in Orthopaedics and for last 4 years has been an examiner for the ‘General Medical Council (GMC) United Kingdom’ for writing clinical scenarios for OSCE.

• The idea is to use this as an end of posting assessment tool.
Present Examination

- Spine
- Hip
- Knee
- Hand
- Shoulder
Methods

• The first OSCE exam conducted on a Saturday morning over 3 hours
  – 80 students
  – four circuits of five stations each.
  – Time required for student to complete a cycle of five stations was 40 minutes (6 minutes per station & 2 minute between each patient which included transfer time and time for student to read the scenario).

• Survey was then conducted on the ‘assessors’ and ‘students’

• An ‘audit’ survey was then conducted to see the effect of changes introduced in the examination system
## Analysis of the Student’s response

<table>
<thead>
<tr>
<th>STUDENT’S RESPONSES</th>
<th>JULY 2007</th>
<th>DEC 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student Factors:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improves Psychomotor clinical skills</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td>Fear of Unknown</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Examiner Factors:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Examiner not helpful</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Examiner Unaware of the examination pattern</td>
<td>7</td>
<td>17</td>
</tr>
<tr>
<td>Interference by the examiner</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td><strong>Scenario/Case Related:</strong></td>
<td></td>
<td></td>
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<tr>
<td>Lack of time per station</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Inadequate time for studying the questions</td>
<td>8</td>
<td>4</td>
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<tr>
<td><strong>Examination System Suggestions:</strong></td>
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<tr>
<td>Well Organized</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>Poorly Organized</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Pre-exam briefing poor</td>
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<td>6</td>
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<tr>
<td><strong>Role Player Related:</strong></td>
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<tr>
<td>Role players did not play the part well</td>
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<td>1</td>
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<tr>
<td><strong>Recommendations:</strong></td>
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<tr>
<td>Overall a good change</td>
<td>12</td>
<td>19</td>
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<tr>
<td>Recommended to continue in the future</td>
<td>10</td>
<td>11</td>
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<tr>
<td>Inclusion of discussion/mini viva</td>
<td>2</td>
<td>5</td>
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<tr>
<td>Real Patients would be better</td>
<td>2</td>
<td>3</td>
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## Analysis of Examiner’s Responses

<table>
<thead>
<tr>
<th>EXAMINER’S RESPONSES</th>
<th>JULY 2007</th>
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<th>DEC 2007</th>
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<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
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<tr>
<td>Scenario related</td>
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<tr>
<td>Scenario was realistic</td>
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<td>3</td>
<td>16</td>
<td>4</td>
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<tr>
<td>Task required was appropriate</td>
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<td>8</td>
<td>20</td>
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<td>Sufficient Time allowed</td>
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<td>7</td>
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<td>4</td>
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<tr>
<td>Improved examination skills</td>
<td>11</td>
<td>1</td>
<td>2</td>
<td>0</td>
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<tr>
<td>Role player Related</td>
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<tr>
<td>Simulated patient was consistent</td>
<td>18</td>
<td>2</td>
<td>15</td>
<td>4</td>
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<tr>
<td>Played Role Realistically</td>
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<td>3</td>
<td>15</td>
<td>4</td>
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<tr>
<td>Recommendations:</td>
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<tr>
<td>Should teach in a way wanting to examine</td>
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<tr>
<td>Shorten the examination</td>
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<td>0</td>
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<tr>
<td>Include Discussions</td>
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<td>0</td>
<td>5</td>
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</table>
Discussion

• OSCE well received.
• The clinical stations set were similar to the stations set for GMC’s ‘Professional and Linguistic Assessment Board (PLAB) test, which has been standardized as a performance assessment test.
• From the ‘student’s’ & ‘examiners’ responses
  – it was good overall change
  – improves psychomotor skills of the students.
• Both ‘students’ and ‘examiners’ felt that
  – time was not adequate for the first round of examination was a mere indication of lack of the exposure to the assessment technique.
There were clear indication by the students that they would be happy for this method of examination to be used as a method of assessment.

Examiners unaware of the examination technique and were interfering.
Examiner’s view point

- There was an element of inertia and resistance to change that was evident from the responses of the examiners.

- Great reluctance by the examiners to follow the newly introduced examination technique and they wanted to continue with their established techniques and methods.
Conclusion of the audit

- Students will find it easy to adapt.
- Examiners will find it difficult to adapt to the new method of assessment.
University of Birmingham

- Case based discussion (OSLER)
  - Objective structured Long examination of record

- MCQ matching type.
Future

• Presently we are trialling OSCE as method of ‘end of posting assessment’

• Future we will have OSCE for end of posting assessment:
  – Increase the number of stations
  – Include
    • ‘role player station’ and
    • ‘interactive station’.