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Some hints for Preparing Objective Structured Clinical Examinations (OSCEs)

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Introduction

OSCEs have been around for many years, but have become very widely adopted during the past few years and, although originally developed for use in medical exams, they are now used by a number of different professions. They were first used in dentistry in the mid-1990s at The Royal London.

OSCEs can test a wide range of clinical skills under controlled conditions, so the content can be highly valid (ie it tests appropriate things in appropriate ways) and the results can be very reliable – I have analysed dental OSCEs with Cronbach *alpha* values of around 0.85. Typically, candidates find OSCEs fairly demanding but they judge them to be a fair and comprehensive way of enabling them to demonstrate their clinical skills under exam conditions.

An OSCE must contain all 4 elements that the name implies – it is an **examination** of **clinical skills and competencies** that must be **objective** and **structured**. This document sets out some hints on how to prepare an OSCE. It was written to help Examiners, but would also be useful to trainees, giving them some information about this type of examination and the way it is prepared.

In the past, it was often felt necessary to have 'killer' stations which, if a candidate failed, meant that they failed the whole exam irrespective of their performance on other stations. This is now considered to be bad practice (for one thing, it can be unfair). Instead, marks are weighted so that essential or time-consuming components of the task are weighted more than less important or shorter elements.

What is an OSCE?

An OSCE is a multi-station examination in which candidates spend a fixed period of time at each station before moving on to the next. It is essentially a rotation, although stations may be set up in several different rooms. The stations may require the candidates to undertake a task, such as mixing impression material, setting out an instrument tray, or giving advice or an explanation to a real or simulated patient. Each station has its own special assessment sheet, designed specifically for the skill being assessed. Each station might be marked out of a different total, but they will be converted to the same scale (usually a percentage) to ensure that each contributes equally to the final score.

Experience tells us that to achieve adequate reliability, an OSCE circuit needs at least 15 well-performing stations if each has around 5 minutes of testing time, so a major OSCE will contain between 15 and 25 stations and candidates will usually spend about 5 to 8 minutes at each. Every so often is a rest station with a chair and refreshments. At these stations, candidates can take a short break or sometimes read the notes or short scenario they will need in preparation for the next station.

OSCE stations with real or simulated patients will also have an examiner present (although it is increasingly common for the patient to also be the examiner – or contribute a supplementary marking sheet). At some other stations there might be no

examiner – candidates complete their question form and post it into a sealed 'letterbox'. However, stations of this type should be kept to a minimum because the most valid OSCE stations have patients and/or examiners present,

Writing OSCE stations

OSCE stations tend to be easier and more interesting to write than conventional exam items. This is because they are based on real clinical scenarios – almost anything that trainees might have to do in their clinical work can be assessed in an OSCE. Like many, if not all, examination items they are best written in pairs or small groups.

1. The first thing the question-writers need to do is to ***decide on the clinical skill to be tested.*** This can include professional behaviour such as communication skills, non-judgemental behaviour etc.

2. The next step is to ***create a clinical scenario*** that will suit the task. This need not be very detailed, as long as it is realistic and contains the relevant information.

3. Next, the question-writers will ***list the steps which the candidate should go through*** in order to complete the task properly. At this stage, all the steps should be set out, although some of the less-important ones might be edited out later.

4. Having set out the steps, it is a good idea to ***run thought them in a real exercise***, just to make sure there are no important omissions. For undergraduate OSCEs, medical and dental students will nearly always be glad to help with this.

5. When the steps have been checked, the question-writer should ***identify the criteria*** on which they will be assessed. These might be:

Five rating criteria

Excellent (E) - the item was performed to a very high standard, confidently and decisively, with no omissions or errors.
Good (G) - the item was performed to a high standard, with no significant omissions, errors or indecision.
Satisfactory (S) – a competent performance, not exceptional but also having no significant errors or omissions.
Not achieved (NA*) - below the required standard; no major errors or omissions, but improvements are needed.
Unacceptable (U*) - well below the required standard, with significant gaps in knowledge or skills, potentially dangerous omissions or major errors, lack of consideration towards the patient or other evidence of unprofessional conduct or behaviour.
(NB *Specific reasons should be given and appropriate comments made for any item rated 'inadequate' or 'unacceptable')

However, some of the steps on the marking sheet might not be appropriate for assessment using all these criteria. For example, a step such as *'checks patient's identity against notes'* is either done or not done, so a simple yes/no is most appropriate for steps such as this. In other cases, for example, it might be more

appropriate to use just 3 criteria – done to the required standard, not up to standard, and above the standard.

The rating criteria should prove helpful in identifying and assessing strengths and weaknesses and in improving the quality of feedback to the candidates. They might also be helpful in providing feedback to those who wrote or examined the station.

An important point about designing OSCE stations is that question-writers should ***focus on the key steps necessary to complete the task successfully and the criteria against which to judge performance on these steps***. It is not necessary to have a predetermined number of steps, nor, if a numeric score is required, to ensure that the maximum score adds up to a specific number such as 10. These matters are taken easy to care of later, when the stations are marked.

The final stage, if possible, is ***to field-trial the station***.

A note about numeric marks

Examiners and students are often very preoccupied with numeric marks - indeed, they are often essential to comply with regulations or to be compatible with standard setting protocols. This is partly for historic reasons and partly because most universities still insist on receiving assessment outcomes as numbers rather than, say, reports of competency. However, a much more realistic way of assessing many things, especially in practical professions such as medicine and dentistry, is to describe competence according to criteria such as those listed above. Consequently, it is best to use the criteria when producing new stations and then, if necessary, attach numeric marks to them in order to satisfy regulations etc. Numeric marks should reflect both the importance of an element and the time that a satisfactory candidate would take to complete it, so, for example, fewer marks would be awarded for greeting a patient than for interpreting a radiograph or explaining a procedure.

To summarise, the 7 stages of writing an OSCE station are:

1. ***decide on the clinical skill to be tested***
2. ***create a clinical scenario that will suit the skill***
3. ***list the steps which the candidate should go through***
4. ***run through the steps to check for omissions etc***
5. ***identify the assessment criteria***
6. ***focus on the key steps necessary to complete the task successfully and the criteria against which to judge performance on these steps - it is not necessary to have a predetermined number of steps, nor to ensure that the maximum score adds up to a specific number such as 10***
7. ***field-trial the station.***