Guidance on Structured Clinical Assessments

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| **Purpose:** | **To provide guidance for staff planning, undertaking and evaluating Structured Clinical Assessments** |
| **Definitions:** | **A Structured Clinical Assessment (SCA) is defined as a formative and/or summative assessment of clinical skills designed to give students the opportunity to ‘show how’ they would manage specific clinical situations and to demonstrate specific competencies. It is often undertaken in a simulated environment, typically comprising a number of different ‘stations’ that students rotate around.****The guidance applies to Objective Structured Clinical Examinations (OSCEs), Integrated Structured Clinical Examinations (ISCEs), and other structured clinical assessments; but does not cover *vivas* or other clinical assessments that take place on clinical placements or in the work place.** |

**1 Scope**

The guidance has been put together to help staff prepare for, run, and evaluate Structured Clinical Assessments (SCAs), in particular, OSCEs or ISCEs. The format of the document follows the life-cycle of the assessment, from inception through to completion.

**2 Designing and Setting Structured Clinical Assessments (Pre-Assessment)**

As with any assessment, SCAs must adhere to the core principles of validity and reliability. The authenticity of the assessment should also be given a high priority. Whilst not the same as validity, authenticity is a contributory factor so it is important that the clinical situations and the simulations used in the assessment are as close to reality as possible.

Whether used for summative or formative purposes, meticulous planning is the key to any successful SCA because of the large number of variables involved.Where SCAs are used as summative assessments, staff should follow the information contained within the guidance. This should be read in conjunction with [Senate Assessment Regulations](http://learning.cf.ac.uk/wp-content/uploads/2014/07/1.10-Assessment-Regulations-for-Taught-Programmes-of-Study-as-at-190614.pdf) as well as any set out by relevant professional, regulatory, or statutory bodies. A Cardiff University information pack has been put together containing templates to help schools manage the assessment. Whilst written specifically for examinations that have an OSCE like format, these may also be useful for other types of SCAs.

2.1 Defining the purpose of the Assessment

Miller (1990) provides a conceptual framework for assessing clinical competency with an OSCE identified as *one method* for assessing the ‘shows how’ aspect. While this format of assessment has been shown to be a valuable tool to measure the application of clinical knowledge and skills, it requires a significant investment of staff time and resources. Schools should, therefore, consider whether it is practicable to use this method, or whether other methods could be used to test the same learning outcomes in equally valid and reliable ways. Where SCAs are used, schools must ensure that they have the resources required to run them effectively.

2.2 Format of the examination

The aim of an SCA is to sample widely across a range of clinical competencies. These might include the following;

* Professionalism
* Communication
* Physical Examination
* Clinical reasoning
* Practical/Technical skills

SCAs may take different forms. SCAs include OSCEs and ISCEs as well as other formats, for example, case studies and systems assessments. OSCE-like assessments are made up of a number of different ‘stations’ each of equal length on a circuit around which students rotate, so that by the end of the assessment all students have completed all tasks. The number and length of stations will vary depending on the purpose of the assessment and test content. Typically, an OSCE station will be of 5 to 10 minutes duration (but could be longer). Whilst OSCEs may facilitate broad sampling of learning outcomes, one criticism is that the assessment often comprises unrelated tasks performed in isolation. An ISCE involves assessing a range of skills around a common theme and from that perspective, are more authentic clinically. The ISCE stations are longer to reflect that difference.

Sequential OSCEs

Rather than a traditional OSCE model, a sequential OSCE uses an initial shorter ‘screening’ assessment with additional ‘sequential’ tests for candidates who fail to meet the agreed standard. The advantage is that there are savings in terms of reduced testing for most students. This saves time and has an impact on the resources needed. For those candidates tested twice (i.e. who also complete the second round of tests) the overall pass/fail decisions are based on the results of the full sequence of test items. Sequential testing in this manner potentially increases reliability for the borderline candidates because the increased number of observations implies that the observed candidates’ marks are closer to their ‘true’ examination scores (Pell et al 2013). However, this type of assessment is not without risk, and schools are advised to refer to the reference section for further information about this assessment format, or to other academic articles that cover the subject.

2.3 Designing the examination

2.3.1 Assessment alignment and blueprinting

In designing the assessment, it is important that the stations are set at the correct level i.e. suitable for either undergraduate or postgraduate, and the year of study within the programme. There should be an examination specific blueprint for each assessment that maps station content to the intended learning outcomes. There should be alignment between the intended learning outcomes, the candidate scenarios, and the criteria by which student performance will be judged. This could be in the form of a rubric specific to the SCA. Failure to align the components of the assessment in the way described may result in all the marks not being available to the candidates, which will have an obvious impact on the outcome.

2.3.2 Deciding on the number and the length of stations

Competence is content specific so achieving competence in one area is not a good predictor of competence in another. This means that wide sampling of topics across content is essential (van der Vleuten 2000). It is generally acknowledged that the greater the number of stations the more reliable the assessment (at least in terms of the post-assessment psychometric data). However, it must also be remembered that this may be at the expense of the validity and authenticity of the assessment.

Ideally, the time allocated for each task should reflect real life situations. This will vary according to school and the subject taught. An OSCE that has many short duration stations that measure clinical skills may not be a valid representation of reality. For example, assessing the risk of suicide or ‘breaking bad news’ to a patient is not something that would normally be accomplished in 5-10 minutes in the real world of clinical practice. Conversely, other skills might reasonably be demonstrated in that timeframe. Unlike reliability, to which it is possible to attach a numerical value, validity and authenticity are qualitative constructs which are nevertheless equally important in this type of assessment.

2.3.3 Designing station content/Writing scenarios.

Candidates begin each station by reading a short descriptive scenario that sets the context and describes what the candidate will need to do once they enter the station. The reading time allocated is usually short (1 or 2 minutes) so it is essential that the scenario is kept brief and focused on the task. Nothing is to be gained by including unnecessary and superfluous information and may cause additional difficulty for candidates who have reading comprehension problems like dyslexia.

It may be helpful to make it clear in the descriptive scenario whether personal protective equipment (PPE) should be worn, for example, examination gloves. In an OSCE with 14 short stations that assesses multiple practical tasks, candidates will find it difficult to put on new gloves for every station in the time allocated. For some stations that do not involve real patients, it may be acceptable to omit the wearing of PPE (even though it would be worn in clinical practice) for entirely practical

reasons.

2.3.4 Rest stations

The use of rest stations is one solution to managing large numbers of candidates. For example, adding three rests to a 12 ‘live’ station OSCE allows 15 candidates on the circuit at any one time. Inclusion of rest stations will lengthen the total time it takes to complete one circuit, but has the advantage that it can sometimes reduce the number of circuits required. It is important to remember that a ten station OSCE circuit with a cohort of three students takes the same time to complete as one with a cohort of ten attending.

The inclusion of a rest or rests will also potentially lighten the cognitive assessment load, as it gives a candidate the chance to take a small break instead of moving continuously between tasks. Inevitably, their inclusion will mean that some students will start the assessment at a rest station. This cannot be easily avoided. It is for this reason that candidates should not be permitted to make notes or complete paperwork at a rest. The exception to this is a candidate who has been given additional time as a specific provision. In these circumstances and *with careful circuit planning*, the rest(s) can be used to good effect, for example, to provide additional time for writing or reading text. If there are students that fall into this category those invigilating will need to be made aware of their presence on the circuit.

2.3.5 Unmanned stations

Unmanned stations (i.e. where there is no assessor present) are not ideal, but are sometimes included (usually when there are insufficient numbers of assessors available). Unmanned stations can be useful for image or data interpretation, evaluation of certain artefacts, writing prescriptions, or writing a referral letter. However, as a general principle, if the set task can be examined in a written format, it should **not be included** as part of an SCA. If unmanned stations are used, then care must be taken to ensure that any paperwork is collected from the station promptly between candidates for obvious reasons.

2.3.6 Piloting new stations

The only way to be certain that new stations that have been developed will perform as intended and expected with all candidates is to trial them in a ‘live’ assessment with a cohort of real candidates. This is considered good practice. Because of the risk that a poorly performing new station might adversely affect the outcome for a candidate, the results from these do not count towards a candidate’s final mark, but are instead used to collect qualitative and quantitative performance data. Candidates should be informed that such stations have been included in the examination, but they are usually not told which ones they are until after the assessment has concluded.

2.3.7 Developing the Mark Scheme

The mark scheme should be designed to capture the full range of candidate responses whilst being unambiguous and easy to complete for examiners. The relative weighting of categories or domains assessed should also be considered.

Mark schemes can vary enormously in a Structured Clinical Assessment, but in general they can be divided into two broad groups: check-lists and rating scales. A checklist is essentially a tool for identifying the *presence or absence* of knowledge, skills and behaviours. In contrast, a rating scale is a tool for assessing *the level* of performance of tasks or skill levels, processes, qualities or end products. The difference is that rating scales indicate the *degree* of accomplishment, and not merely whether something was/was not done or achieved. Rating scales list performance statements in one column and the corresponding range of accomplishments in the other using descriptive words such as ‘poor’ to ‘excellent’. These statements may be used with or without a numerical value.

Whatever the mark scheme adopted, it is important that markers have a clear, shared understanding of the assessment criteria, to allow them to reach judgements that are accurate, fair, equitable and reliable. A mark scheme that is concise, focused and unambiguous is therefore essential.

2.3.8 Use of ‘killer stations’

Current best practice is that ‘killer stations’ should not be used in this type of examination as the effect is to reduce the whole assessment to a single station. Certain competencies are regarded as so important in terms of patient safety that the candidate should not pass the overall assessment if they perform poorly in these key domains. Competencies that fall into this category are best assessed in a different format. However, to comply with their regulator and to address safety concerns, some schools may continue to include ‘killer stations’ provided the practice can be defended and is supported by written documentation.

2.3.9 ‘Safety alerts’ (previously known as yellow cards/red flags)

It is possible to issue ‘safety alerts’ to identify individual candidates where patient safety issues have been identified during the assessment. The intention is that these alerts are used formatively to enable students to recognise inappropriate behaviours that compromise patient safety and/or demonstrate a lack of professionalism. To ensure that students act on the feedback and use it to feed forward to future assessments, it may be appropriate for the student to undertake mandatory remediation. A separate policy on safety alerts is available for reference.

2.3.10 Using real or simulated/standardised patients

Some stations may involve real or simulated/standardised patients (actors), manikins, ‘part-task trainers’ or a combination of these. Much of the research involving the latter has been carried out by Kneebone et al (2002). Further details can be found in the reference section.

Actors role playing real patients have the advantage that they can be trained to deliver a standard (and consistent) response to candidates. However, they will almost certainly not have the actual condition that will be discussed and assessed. Information about that will need to be conveyed using simple or complex moulage techniques, good quality photographs, models, clinical charts etc.

Even though it increases the potential for subjectivity, there are times when it is necessary to use real patients to assess the learning outcomes. This enhances the authenticity of the assessment. In addition, some scenarios may mean it is difficult to use standardised patients, for example, paediatrics.

When real patients are used, legal requirements must be observed, and written consent obtained. Patient confidentiality, safety, comfort, privacy, and dignity must be ensured. The patient’s wellbeing must take precedence over the needs of the assessment. The examination lead should check that the venue is easily accessible to patients. Staff must ensure that the procedure for patient evacuation in the event of an emergency is defined and communicated to all involved before the assessment begins. Usually, this information is disseminated or reinforced at the assessor briefing.

2.3.11 Simulated patients/standard patients as examiners

Where communication and/or interpersonal skills are being assessed, it is accepted practice that simulated patients can contribute to the assessment by rating student skills in these areas. It should be emphasised during the appropriate briefings that their assessment should be made independent of the clinical examiner’s judgement and could be used in either a formative or summative way. A portion of the assessor’s mark sheet is often used to capture this information but sometimes they have a separate mark scheme. Simulated patients acting as examiners can bring an additional perspective to the assessment, however, should they be required to grade students in a high stakes summative examination, it is essential that they receive prior training to ensure that their judgements are fair, valid and reliable.

2.4 The venue

A suitable venue or venues must be booked well in advance of the assessment. The space should be suitable to accommodate multiple tracks if required. These are used to accommodate large numbers of candidates on the circuit. Ideally, the venue(s) should also have facilities in the same building close to the examination circuit for candidate and examiner briefings, and suitable space to act as ‘holding areas’ for candidates before or after their assessment if required (see below).

Running the examination across more than one venue may be unavoidable if candidate numbers are large (as in MEDIC). However, this can present additional challenges, for example with synchronised time-keeping and replication of equipment and models.

2.5 Examination Security

With large cohorts, it often becomes necessary to carry out the assessment over a long period of time, for example, one morning or one day. The corralling or quarantining of candidates to ensure they cannot communicate with their peers remains controversial. There is some evidence that candidates prefer it because it avoids peer pressure to share information about examination content (McCourt et al 2012).

Despite candidate perceptions, there is also evidence in the education literature that the briefing of candidates by others who have already been assessed does not confer a significant advantage (Colliver et al 1991). It has been reported that even when candidates are briefed by peers, the time available for further preparation is often considered insufficient to make a meaningful difference (Swanson et al 1999).

Scenarios that focus on the demonstration of skills rather than knowledge (as should be the case in OSCE and OSCE-like assessments) reduces the risk that candidates can pass on useful information.

Nevertheless, technological advances mean that it is now much easier for candidates to access media resources, for example, online videos via mobile telephones, tablets and other electronic devices giving an advantage if there is prior knowledge of content. For that reason, corralling candidates is acceptable to prevent access to this material while the assessment is running.

If it is decided to corral candidates, prior notification must be given detailing how long students will be required to wait before or after the assessment. Water should be provided if it is necessary to corral candidates for long periods of time.

2.6 Designing the circuit layout

Thought needs to be given to the layout of the circuit. The arrangement and numerical order of the stations should allow for privacy of discussion, so that candidates performing other tasks are not distracted or disturbed. This can be a problem with candidates who are very vocal and have naturally loud voices. If rest stations are used, then it is important that these are **not** positioned immediately before and/or within earshot of a communication skills station for obvious reasons.

2.7 Artefacts (props)

A variety of station artefacts, including clinical equipment and materials, part-task trainers, photographs, and models are used in an SCA. All equipment must be checked both before and on the day of the examination. It is essential that spares are available in case of failure or damage.

2.8 Technical Support Team

Some schools have a designated technical support team who are familiar with every station in the assessment and how all the artefacts operate. The role of the support team is to help assessors and to troubleshoot problems on the day. However, the same high level of support may not be available in all schools. If that is the case, schools should try to ensure there is at least one member of staff present at the examination who has expert knowledge and who can support the examination lead.

2.9 Timekeeping

It is essential that the examination runs to time. Various methods are used to provide an audible signal to students (and examiners) to indicate when it is time to start reading the scenario, enter the station, and move on to the next one. It is important that the signal can be heard clearly at every place on the circuit (particularly where small/enclosed rooms or units are being used). Issuing a ‘one-minute remaining’ warning 60 seconds before the station ends is considered good practice. Where automated timers are used, it is essential to have a member of the exams team on standby with a manual timer should the former fail.

2.10 Standard Setting

Standard setting refers to the process of deciding one or more ‘cut scores’ on a test. When an assessment is used for summative purposes, the score required for the candidate to pass **must** be defined **and applied**. There are many standard setting methods available. The most common methods used for OSCEs are modified Angoff (and variants thereof) and Borderline Regression. The former is focused on the test items that make up the assessment, whereas the latter is centred on the individuals taking the test. Using Angoff, the pass mark for each station and the overall examination is determined **in advance** of the assessment. In contrast, Borderline Regression uses data collected **during** the examination and uses the performance of the candidates to determine the pass mark.

2.11 Reserve assessors

The difficulty of finding sufficient examiners for all stations is acknowledged. Nevertheless, it is essential to have spare examiners available on the day to cover non-attendance and illness. These individuals need not be waiting at the circuit, but they should be in the same building and contactable by mobile phone.

2.12 ‘Roving examiners’ (where used)

It is generally accepted that there is no need to have two examiners at each station i.e. stations do not need to be double marked. However, where possible, it is useful to have a ‘roving examiner’ whose role it is provide an additional quality assurance perspective by identifying both good and bad practice on the day. That individual should report any problems to the assessment lead (or their deputy) as soon as possible during the examination. The roving examiner has no role in moderating marks post-examination.

2.13 Accessibility - Specific Provision

All students must have an equal opportunity to demonstrate their abilities against the learning outcomes. Sometimes a student with specific difficulties may require reasonable adjustments to demonstrate their skills. You are advised to consult the separate policy on specific provision. Where students are granted Specific Provision, staff shall ensure that this is undertaken in accordance with the University’s [Specific Provision Regulations](http://learning.cf.ac.uk/wp-content/uploads/2014/07/1.10-Assessment-Regulations-for-Taught-Programmes-of-Study-as-at-190614.pdf).

To help determine what reasonable adjustments can and/or should be made, staff should contact and work with the [Disability and Dyslexia Service](http://www.cardiff.ac.uk/dyslx/index.html) to help identify the type of adjustments that could be made at stations for candidates, recognising that these will need to be considered and made on an individual basis.

2.14 Catering

If catering is required, for example, refreshments for examiners, this must be booked well in advance. SCAs are lengthy and highly repetitive assessments for assessors and it is not unreasonable to provide water, teas and coffees throughout the day. Lunch should be provided if the examination straddles the lunch hour. If rest stations are used, providing water at those for candidates is considered good practice.

2.15 Pre-assessment dissemination of information to stakeholders

*General*

Written information should be disseminated to all stakeholders via e-mail and/or Learning Central prior to the assessment. This should include details of the venue, start and finish times, details of circuits (number of stations, number of rests, timing of stations and details of breaks).

*Information specific to candidates*

All students should be notified at the beginning of the term of the dates of structured clinical assessments. This information should appear in the assessment blueprint for the relevant course.

For candidates who have never encountered this format of assessment previously, details of what an OSCE/ISCE is, and its purpose, should be provided. The following should also be issued;

* a detailed timetable for the assessment indicating allocated group
* ‘housekeeping rules’ e.g. clinical clothing to be worn, no use of mobile phone and other electronic devices during the examination, no written material to be taken into/out of the examination
* timekeeping; the need to move quickly on to the next station when the appropriate signal is heard and that latecomers may be refused entry to the examination
* whether video will be used to capture candidate performance at a sample of stations as part of the quality assurance process
* procedure to be followed in the event of an emergency/fire alarm
* the importance of reporting illness or personal circumstances that may impact on performance **before** the examination commences (even if this is only apparent on the day) and the procedure for applying for extenuating circumstances
* arrangements for release of the result
* arrangements for feedback and remediation (type, format and how students can use feedback to best effect)

*Information specific to assessors*

The following information should be issued;

* contact details of the lead examiner or module leader (or nominated equivalent). Assessors must inform the exam lead immediately if for some reason they are not able to attend on the day
* timings of briefings
* procedure to be followed in the event of an emergency/fire alarm.
* a floor plan of the OSCE circuit
* details of the station and marking scheme and the level of the candidates being assessed e.g. year 4 undergraduate, post-graduate etc.
* whether ‘safety alerts’ may be issued and under what criteria
* details of any role-player/actor script (if applicable)
* how to ‘greet’ and treat candidates. Assessors should avoid saying things like ‘well done’, ‘great’ as this may give the candidate a false expectation of performance.
* Importance of timekeeping
* Importance of keeping the candidate at the station if they complete the task ahead of the allocated time (this is important because the candidate may remember something within the time and be able to gain marks accordingly). It also stops candidates wandering around the circuit.
* Importance of not tidying away kit/setting up for the next candidate while the previous candidate is still in the station even if the station finishes early (this is important because the candidate may remember something within the time that allows them to gain marks accordingly)
* examination security including the importance of keeping station content confidential and any related paperwork, iPad or electronic tablet containing exam data secure both before and during the assessment

2.16 Pre-examination Assessor Training and Calibration

Assessors must be familiar with the operation of equipment and with any artefacts used in the assessment. It is essential that assessors appreciate the level of the candidates being assessed, fully understand the purpose of the station and how to apply the mark scheme consistently. To ensure that happens and that marking is reliable and fair for all candidates, the assessors should be calibrated.

The essential elements of an examiner calibration exercise are as follows. Preparation for live examination marking should begin with communication of guidelines describing how this should be carried out. This should be followed by some trial marking of real or simulated examination material, after which examiners are given feedback on their marking. Assessors should have an opportunity to reflect on performance, and to adjust their marking practices if found to be markedly different from their peers. The opportunity to effect change is confined to the pre-assessment period only. Candidate **marks should not be adjusted or moderated post-examination** **unless there is a proven defect in the examination process.**

The difficulty of recruiting sufficient examiners is acknowledged. However, it may be that an assessor who consistently fails to engage with the training or who consistently remains an ‘outlier’ despite the training, should be ‘retired’ from the pool of examiners.

Calibration is **not** the same as familiarisation with the station content and mark scheme. Calibration serves to standardise examiners (and simulated patients) ahead of a live assessment by ensuring that they view and interact with samples of work from candidates with a range of abilities. This can be achieved by using video material provided in advance of the assessment as described above, or by using other examiners/trainees to ‘roleplay’ a range of candidate performance on the day. The usual way of doing the latter is to set aside sufficient time before the examination begins to go through a calibration exercise.

Calibration is particularly important when multiple tracks are used and/or the examination is held in more than one venue. It should be repeated on a regular basis (even when using experienced examiners) as it is the best way of ensuring that all candidates are treated fairly and have marks awarded to their work that reflect the agreed marking standards. Without a process of calibration, teams of examiners can operate unevenly, introducing error into the assessment.

*Information specific to simulated patients (where used)*

The following should be issued;

* details of the role they will be playing, occupation, how to behave, how to react etc
* details of clothing that should be worn (if applicable)
* actor script- should include details of presenting complaint, medical history, social history, questions to be asked of candidate, details of prompts that may be used
* details of station artefacts (props) that may be used
* training video of station (if applicable)
* examination security including the importance of keeping station content confidential and secure both before and during the assessment

*Information specific to real patients (where used)*

The following should be issued;

* the purpose and nature of the assessment: (what is being assessed, what is expected of them)
* consent form: this should make it clear what they are giving consent for, and how information they provide will be processed.
* how to raise concerns should they feel they are being put in an uncomfortable position

*Other support staff*

The following should be issued;

* details of the role
* how they should support the lead examiner e.g. by guiding candidates around the circuit, ensuring candidates remain with their correct group in a multiple tracked OSCE, collecting paperwork from unmanned stations (if used), checking assessors have completed all mark sheets before they leave the circuit etc
* timings of briefings
* support that should be provided for students with specific provision
* a floor plan of the OSCE circuit

2.17. External Examiners

When an SCA is used as a summative assessment, an external examiner should be appointed to oversee the whole assessment to provide quality assurance.

As set out in [Senate Assessment Regulations](http://learning.cf.ac.uk/wp-content/uploads/2013/06/Academic-Regulations-Handbook-Final-Version.pdf#page=160), the role and duties of External Examiners include that:

* they consider, comment on, and approve all assessments that contribute 50% or more to the mark for any Module or Unit of Study assessment contributing to the final award (external examiners would normally review all scenarios and mark schemes pre-assessment)
* they be provided with a sample of completed assessments to determine that internal marking and classifications are of an appropriate standard
* they are invited to consider and comment upon procedures designed to ensure the reliability and consistency of marking
* they shall not make recommendations on, or change the marks of individual students

In many institutions, the external examiner does not actually examine any of the candidates, but instead is present to oversee and provide quality assurance for the whole of the ‘assessment process’. Placing an external examiner on a single OSCE station to examine candidates will provide some feedback on one station only. In contrast, allowing that examiner to move freely around the circuit provides feedback on the processes employed to ensure that the assessment is fair, rigorous, and being operated in accordance with best practice, current policies and regulations for all candidates. This is a role distinct from examining individual candidates, and provides richer quality assurance data. It is acceptable to send recordings of the SCA to an external examiner if he/she is not able to attend in person on the day(s) of the assessment.

**3. Running Structured Clinical Assessments (Undertaking the Assessment)**

3.1 Setting up the venue

Staff setting up the OSCE circuit should be given a map of the layout and detailed information about all equipment and paperwork needed at each station. The former includes signs showing the station numbers, candidate scenarios and paper mark sheets (if used). All items of equipment must be available and checked that they are in good working order.

3.2 Registering candidates - identity checks

The identification of candidates arriving for the assessment must be checked, verified, and recorded on an attendance register. Photographic evidence, (e.g. student ID cards) must be produced if candidates are not known personally by the administrator. Stickers or badges should be issued with candidate examination numbers clearly displayed during the examination.

3.3 Briefings

3.3.1 Candidate briefings

A candidate briefing should be held for each cohort on the day of the examination to reinforce the pre-assessment written information given. The briefing should include the following;

* the importance of reporting illness or personal circumstances that may impact on performance to the examination lead **before** the examination commences and the procedure for applying for extenuating circumstances
* the use of devices with recording, transmitting or receiving abilities, radios, cameras, mobile phones is not permitted in the examination
* taking food and drink into the examination is not permitted unless this has been agreed in advance for medical reasons and as part of a specific provision
* assessors and invigilators will not answer questions about station content
* candidates must not copy or obtain answers from other candidates, or pass information to other students
* candidates most not make notes about the test material or remove it from the circuit
* candidates must leave all examination material at stations or act as directed by the Test Administrator, for example, in the case of an unmanned station
* notes must not be made at rest stations (if included) unless the candidate has been given special permission to do so, for example in the context of a specific provision
* unfair practice will be reported to the relevant examination board and may affect the result of the examination
* accidental damage to an artefact must be reported to the one of the invigilators without delay as this has the potential to affect other candidates
* all candidates must move to the next station immediately on hearing the signal.

Please note that Candidates should be given information about the type of signal used e.g. bell whistle, spoken word etc that is specific to their assessment as it will vary between schools

* if a candidate finishes a station early they should **remain in the station** until the signal is given to move on to the next one
* information should be disseminated about whether real or simulated patients are included in the examination
* arrangements in place should a real patient become unwell during the assessment and how any impact will be managed
* what will happen should the building require evacuation during the examination for example, if a fire alarm sounds, candidates must stay with their examiner at all times. Standard fire evacuation procedures will be followed and the examination reconvened at a suitable time. In the event of a real fire, the examination my need to be rearranged

3.3.2 Assessor briefing

This should reinforce any information given out pre-assessment with attention paid to familiarisation with the mark scheme and the recording of candidate performance data.

3.3.3 Simulated patient/actor briefing

This should reinforce any information given out pre-assessment with attention paid to the role that they will be playing, how much to prompt candidates etc.

One of the biggest ‘risks’ to this type of scenario lies with the first few candidates through the circuit. Although it is possible to reduce variation by providing clear scripts and mark schemes, some uncertainty always remains about how a simulated patient will react with a candidate as they are playing a role and don’t have the condition being assessed. Discussion of the scenario with the assessor marking the station before the first candidate arrives can help eliminate any ambiguity and is considered good practice.

3.3.4 (Real) Patients

Many members of the public that take part in these types of assessment have done so many times and are familiar with the set up. However, it is important to provide guidance about how much they should prompt/assist a candidate, and what to do if they start to feel unwell during the day.

3.4 Candidate performance data

There is always potential for assessors to fail to record all the information about a candidate’s performance when paper mark sheets are used because the examination day is long, and the task is repetitive. When paper copy is used, staff responsible for the management of the assessment should ensure that all paperwork has been completed by the assessors at the end of each circuit. Thus, every box on a check list, ‘bubble’ on a rating scale or rubric must have been filled in before the examiners are permitted to leave the circuit and before the sheets are moved to a secure location. Rarely, despite everyone’s best efforts there is outstanding missing data. The examination lead (and assessment lead if a different individual) should be made aware of the problem as soon as possible. Management of missing data is discussed in section 4.1.

The need for rigorous manual checking and collection of examination data should theoretically become redundant if an electronic method of data capture using iPads or other similar device is used because most systems warn the examiner that an error has been made and it is not possible to process the next candidate until the mistake has been corrected. Similarly, the circuit marshal receives notification that the data is incomplete while the assessors are still at the circuit. Electronic data capture is the College’s preferred method of collecting candidate performance data, but it is accepted that some schools or divisions in schools with low numbers of candidates may prefer to continue with paper records.

3.5 Defects and Irregularities

There should be a contingency plan to manage the assessment should it be disrupted for all or for individual candidates. There is a separate document on managing unusual events or unforeseen circumstances that have taken place at OSCEs and ISCEs previously.

In the event of an incident taking place, the examination lead must be informed. Details should be recorded of the nature and timing of the incident, and any action taken. This report must be submitted to the Chair of the Examining Board. Where possible, staff leading the assessment shall seek to rectify any defect or irregularity and provide students with the opportunity to complete the assessment under normal conditions, prior to its conclusion.

Guidance on the management of defects and irregularities is available from the Superintendent of Examinations or from other senior colleagues in Registry and Academic Services.

Rarely, an incident occurs that proves impossible to remedy during the test and where there is potential for an adverse impact on the outcome of the assessment. In these instances, the student should be made aware of the need to report any Extenuating Circumstances that may have impacted on them by completing and submitting an [Extenuating Circumstances Form](http://learning.cf.ac.uk/wp-content/uploads/2014/02/Extenuating-Circumstances-Form-2014.docx),

3.6 Unfair Practice

Staff should ensure that students are aware that unfair practice is unacceptable and as far as possible, should take steps to ensure that there are no opportunities for students to engage in it. Where unfair practice is suspected, the student should be allowed to complete the assessment, but any unauthorised materials should be confiscated. The examination lead should be informed. Detailed notes will need to be made of the incident and the matter reported to the Chair of the Examining Board. Allegations of unfair practice shall be managed in accordance with the [Unfair Practice procedure](http://learning.cf.ac.uk/wp-content/uploads/2014/06/1.11-Unfair-Practice-Procedure.pdf).

3.7 Post-assessment Feedback

As part of the quality assurance process, it is good practice to capture feedback from the different stakeholders i.e. assessors, simulated patients, and the candidates.

This can be used to improve the design and conduct of future assessments. The assessment team should meet to discuss and review the feedback provided, reflect on the assessment, and identify and implement any identified enhancements.

**4. Marking and managing Structured Clinical Assessment outcomes (post-assessment)**

Provided sufficient attention has been given to writing the station scenarios, devising the mark schemes and training the assessors, then the post-assessment data management phase should be uncomplicated. However, despite this, problems may still arise.

4.1 Missing data

Outstanding missing data is an example of a defect in the assessment and should be recorded formally in a risk register. The possibilities for management include, giving the candidate full marks for the missing section *or* awarding the average mark *or* the maximum mark achieved by the cohort. Each case should be discussed at the examination board with various options ‘modelled’ to demonstrate the impact on the outcome for the candidate.

4.2 Review and Verification

Schools shall ensure that arrangements are put in place to ensure that marking is reliable and consistent in accordance with [Senate Assessment Regulations](http://learning.cf.ac.uk/wp-content/uploads/2013/06/1.10-Assessment-Regulations-for-Taught-Programmes-of-Study-Anchored1.pdf#nameddest=Reliability and Consistency of Marking Schemes). There should be a robust mechanism for checking all student data post-assessment. It must be ensured that the marks recorded are for the correct students, and that any calculations using the data are free from error. It must be remembered that in an OSCE or OSCE like assessment, the result is based on an aggregated score obtained across all stations. As the stations are potentially marked out of different totals, the result needs to be calculated based on a percentage score (not the raw marks). Where schools have a ‘pre-determined’ pass mark e.g. 50%, the result achieved by the candidate will need to be ‘scaled’ as appropriate.

4.3 Adjustment of marks

The **only** time adjustment of marks should be needed is when there has been a proven defect in the process of the assessment. Examples of that include the following; missing candidate performance data, when there has been some malfunction of equipment at a station, and when there has been a failure to provide the candidate with information needed to complete the task e.g. the assessor fails to show the candidate a radiograph. Any defect in process must be reported to the lead examiner and the chair of the examination board for further discussion and agreement on management at the examination board.

4.4 External Examiners

When external examiners cannot be present at the actual assessment, it is good practice to video a sample of the assessments undertaken at different stations to facilitate external review and verification of standards. Students should be informed that the purpose of video recording is for quality assurance purposes only. They should be asked to give their permission in advance of the assessment.

4.5 Recording and Releasing Marks

As set out in [Senate Assessment Regulations](http://learning.cf.ac.uk/wp-content/uploads/2013/06/1.10-Assessment-Regulations-for-Taught-Programmes-of-Study-Anchored1.pdf#nameddest=Releasing Marks Assessors), the results for individual assessments shall be transferred into SIMS as they become available. When the results have been entered and verified, staff should use the functions within SIMS to notify students of the availability of marks.

**5 Review, reflection and evaluation**

Some schools have their own psychometricians whereas others do not. Further analysis of data will very much depend on the psychometric support available to individual schools.

As a minimum, the maximum and minimum marks and standard deviation should be reviewed for each station. A station with a low maximum score (compared with the highest possible) may indicate that the scenario is not aligned properly with the mark scheme, or that there is a problem with the way the examiner applied the mark scheme. Either way, the result is that the full range of marks was probably not available to the candidates. This would need addressing before the station is used at a future examination.

The assessment team should also review the spread of marks awarded to different student groups, to ensure that no unconscious bias to the marking exists. At a minimum, schools should consider and review the performance of students by age, disability, ethnicity, and gender. It is also good practice to review the performance of the assessors to identify ‘hawk or dove’ like behaviour.

6 **Re-assessment and Extenuating Circumstances**

Students should receive timely feedback about their performance. Staff shall ensure that they notify students prior to an assessment of the opportunities for re-assessment for students that fail. Staff should also ensure that they make any arrangements, as needed, to allow students to retake the assessment, where their initial attempt was impacted by Extenuating Circumstances, in accordance with the relevant [Senate Assessment Regulations](http://learning.cf.ac.uk/wp-content/uploads/2014/07/1.10a-Extenuating-Circumstances-as-at-020614.pdf).

**Support and further information**

Further support, advice and guidance on running Structured Clinical Assessmentsis available from the following within the University:

* Senate Assessment Regulations [<http://learning.cf.ac.uk/wp-content/uploads/2014/07/1.10-Assessment-Regulations-for-Taught-Programmes-of-Study-as-at-190614.pdf>]
* Designing Assessments [<http://learning.cf.ac.uk/quality/assessment/designing/>]
* Policy for Dealing with Defects or Irregularities in the Conduct of Assessments [mail to: exams@cardiff.ac.uk]
* Policy and guidance on Academic Feedback [<http://learning.cf.ac.uk/wp-content/uploads/2013/06/Academic-Feedback-to-Students-Policy-and-Guidance.pdf>]
* Unfair Practice Procedure [<http://learning.cf.ac.uk/wp-content/uploads/2014/06/1.11-Unfair-Practice-Procedure.pdf>]
* Extenuating Circumstances [[http://learning.cf.ac.uk/quality/assessment/extenuating-circumstances/](http://learning.cf.ac.uk/quality/assessment/extenuating-circumstances/%5D)]
* Disability and Dyslexia Service [mail to: disability@cardiff.ac.uk]
* Superintendent of examinations [mail to: exams@cardiff.ac.uk]
* The College of Biomedical and Life Sciences [mail to: BLS@cardiff.ac.uk]

The College of Biomedical and Life Sciences has also produced a range of templates and other resources. These can be accessed online at [Manjit to insert URL]

**External resources consulted**

* Boursicot K. and Roberts T. (2005) How to set up an OSCE. The Clinical Teacher 2 (1) pp. 16-20
* Collins J.P. and Harden R.M. (2004) The use of real patients, simulated patients and simulators in clinical examinations. AMEE Medical Education Guide no. 13
* Colliver J.A., Barrows H.S., Vu N.V., Mast T.A. and Travis, T.A. (1991) Test security in examinations that use standardised patient cases at one medical school. Academic Medicine 66 (5) 279-82.
* Gormley G. (2011) Summative OSCEs in undergraduate medical education. Ulster Medical Journal 80 (3) pp. 127-132
* Khan K.Z. … [et al.] (2013) The Objective Structured Clinical Examinations (OSCE): part I: organisation and administration. AMEE Guide no. 81
* Khan K.Z. … [et al.] (2013) The Objective Structured Clinical Examinations (OSCE): part II: an historical and theoretical perspective. AMEE Guide no. 8
* Kneebone, R [et al.] (2002) An innovative model for teaching and learning clinical procedures Medical Education, vol 36 628-634.
* McCourt, C., Johnston, J.L., Cooper, S. and Gormely, G.J. (2012) The level playing field: the impact of assessment practice on professional development. Medical Education 46 (8) 766-776.
* McKinley D.W. and Norcini J.J. (2014) How to set standards on performance-based examinations. AMEE Guide no. 85
* Miller G.E. (1990) The assessment of clinical skills/competence/performance.

Academic Medicine, 65: 9.S63-7

* Medical Council of Canada: Guidelines for the development of OSCE cases [<http://mcc.ca/wp-content/uploads/osce-booklet-2014.pdf>]
* Pell, G., Fuller, R. Horner, M and Roberts, T. (2013). Advancing the objective structured clinical examination: sequential testing in theory and practice. Medial Education, **47**: 569-577.
* Queen’s University Belfast: OSCE Examiner: training and development [<http://www.med.qub.ac.uk/osce/index.html>]
* Swanson D.B., Clauser B.E., Case SM (1999). Clinical skills assessment with standardized patients in high-stakes tests: a framework for thinking about score precision, equating, and security. Adv Health Sci Educ Theory Pract ;4(1):67–106.
* Van der Vleuten C. (2000) Validity of final examinations in undergraduate medical training. British Medical Journal. 321: 1217-9