

## **Faculty Development – Teaching clinical skills**

# A brief history of clinical skills

Clinical is derived from the Greek &lsquo;klinikos&rsquo;, which means &lsquo;pertaining to or around the sick bed&rsquo;. Throughout this module the term &lsquo;clinical skills&rsquo; refers to those clinical examination and procedural skills commonly performed in real or simulated clinical environments.

Clinical examination developed from several sources from 2000BC, including the practice of the Ancient Egyptians and Ayurvedic practitioners. The basic examination procedures were developed further by the schools of Hippocrates (450BC) and Galen (200AD), who introduced the concept of &lsquo;taking a history&rsquo; or more pertinently, listening to the patient&rsquo;s story, progressing to a &lsquo;focused&rsquo; examination of the patient. These ancient scholars gave us the concept of using the five senses (tasting, observing, touching, listening and smelling) to diagnose what was wrong with the patient. With the exception of tasting (!), they still form the basis of a physical examination.

Over the next 1,000 years, influenced by the great Islamic physicians Avicenna and Razi in Baghdad (900&ndash;1000AD), today&rsquo;s approach developed: taking a history followed by a systematic clinical examination. The examination procedures in use today have changed little since the formalisation of medical education in Europe and North America in the 19th century, although during the past 50 years clinical procedures and investigations have become increasingly augmented by the various technologies involved.

Until recently, the teaching and learning of clinical skills invariably occurred at the patients&rsquo; bedside or other clinical areas, augmented by small and large group teaching in the classroom and lecture theatre. This &lsquo;apprenticeship model&rsquo; (Hays, 1999) allowed direct observation and performance of skills overseen by senior clinicians. This was not always ideal. Patients were often talked about or over, rather than talked to or with, and the guiding principle of &lsquo;see one, do one, teach one&rsquo; was not always the easiest (or safest) method for the patient.

The past 20 years has seen a changing clinical environment and working practices, the introduction of &lsquo;clinical skills labs&rsquo; and the dominance of the objective structured clinical examination (OSCE) as the main clinical assessment tool. Students have been encouraged to seek other methods of acquiring clinical skills and we now have a generation of young doctors who have increasingly substituted rather than augmented clinical experience. In doing so, we have removed some key elements of the clinical experience that cannot be replicated by the safety and protection that simulation offers. This is particularly true of intimate examinations including breast, external genitalia and rectal examination.

## *Thinking point*

Think of your own preferences as to when and where you teach clinical skills. How does your practice reinforce the needs to examine 'real patients' as well as ensuring students/trainees are competent and safe before doing so? How do you assess this learning?

# Do clinical skills matter?

During the past 150 years the advancement of medical science and technology coupled with an ever-changing clinical arena and demands has brought into question our continued passion for the teaching and learning of these 'ancient arts'. So do we still need these 'shaman-like' skills? Why listen to a patient's heart when you can get an echocardiogram? Why lay your hands on the patient's abdomen or perform a complex set of neurological examinations when you can obtain a detailed view through an ultrasound or MRI scan? A chest radiograph will confirm pneumonia or a pneumothorax, a urine dipstick and full blood count will confirm or refute a urinary infection.

In fact, why bother with any examination at all?

Reviewing the limited evidence on the subject (see, for example, Sackett, 1992; Spiteri, 1988; Joshua, 2005) there does not appear to be any strong support for the retention of the teaching and learning of these skills. Reviews looking at inter-observer agreement (see Joshua et al., 2005) noted that inter-rater reliabilities and agreement were invariably low when doctors were asked to identify the presence or absence of many clinical signs, especially the more complex and difficult (or is that rarely performed?), e.g. whispering pectoriloquy (Spiteri et al., 1988). The sensitivity and specificity of clinical signs in many of the included studies are often called into question and would certainly exclude their use as 'diagnostic' if strict criteria were to be applied.

So how do we justify our continued devotion to these particular professional activities?

## *Thinking point*

- Other than 'confirming the diagnosis' what other functions does physical examination serve in the modern consultation?

If we are humble enough and not dazzled by the skills of those 'master-clinicians' of the 19th and early 20th century, we may begin to answer these questions. There is no mention in the literature of how often clinicians agreed that a patient was ill and needed further investigation and treatment. To argue whether they failed to detect the 'radiologically obvious' pleural effusion or that they missed a clinically insignificant heart murmur is probably unimportant. Being able to categorise patients as unwell or well and then using knowledge, skills and investigations to provide the cause and most beneficial treatment should be our goal, and the more we can arm our students and trainees in this pursuit the better.

In trying to divide the well from the unwell, clinical examination fulfils several other important roles.

- Examination is an integral part of the doctor&ndash;patient relationship. The simple &lsquo;human effect&rsquo; of listening to and touching a patient can be intrinsically reassuring and comforting. Within this relationship, trust is essential, not only to be able to perform parts of the examination itself but also in subsequent decision making and management. It is very hard to convince a patient that they must undergo various, occasionally invasive and possibly painful, investigations if they have little trust in the clinician.
- The examination may provide important information about the diagnosis, prognosis and severity of the patient&rsquo;s condition.
- The examination enables decisions to be made regarding appropriate investigations and therapy.
- Thorough, systematic examination may narrow or confirm a diagnosis where the patient gives little or no history, or presents with vague or non-specific symptoms.
- An &lsquo;incidentaloma&rsquo; may be thrown up by systematic examination.
- And of course, examination allows us to gauge the success or otherwise of treatment.

Flegel (1999) suggests that clinical examination skills are the bridge between the patient&rsquo;s history and the investigations required to make a diagnosis: an &lsquo;adjunct to careful, technology-led investigations&rsquo;. Thus clinical examination confirms diagnostic suspicion from the history, and directs the investigations and further management of the patient. In the NHS of the 21st century, with increasing economic consideration placed on everything we do, it may be argued that we should be increasing the teaching and learning of clinical skills, honing our skills to make expensive investigation focused and appropriate.

In the next section we will consider the different environments in which the teaching of clinical skills takes place.

### ***Thinking points***

- Before you begin the next section, list your main considerations when planning a teaching session involving clinical skills.
- How do you maximise the learning experience of the clinical environment for your students or trainees?
- What other clinical opportunities could you provide for the learners to practise their skills?

# Where to teach clinical skills

Traditionally, clinical teaching occurred in hospital wards, GP surgeries, outpatient settings and operating theatres. During the past 20 years, clinical skills centres, laboratories and, more recently, simulation centres with high-fidelity simulation have been introduced. While traditional clinical settings have never been the ideal teaching and learning environments, they are becoming increasingly more difficult to use as service demands stretch goodwill and reduce opportunity. However, workplace-based learning is vital for the acquisition of a comprehensive range of clinical skills that can be used in a variety of complex situations.

## Teaching and learning opportunities on wards

Traditional ward teaching usually takes one of the following formats:

- incorporation of teaching into business rounds
- the planned examination skills session
- opportunistic teaching and learning that occurs when dealing with acutely unwell patients.

### The business round

Teaching on true business rounds can be unfair on patients, junior colleagues and nursing staff. Useful methods of improving the learning experience include the following.

- Setting some learning goals prior to the round, e.g. students writing in the patient notes, or presenting the data, ECGs or radiographs on given patients, on or after the round (see below).
- Asking one of the students to act as a scribe. Then when inspiration hits, prompted by data, signs or symptoms, the scribe is asked to write down your questions. These are then addressed in a follow-up session after the round. This gives time for students to go away and read around areas of weakness, and also avoids humiliating the students in front of the assembled round. As one student put it, 'This way, only the teacher and my peers get to see how stupid I really am'.
- More senior students can be asked to take on a given role within the round, giving much-needed experience and insight into the roles and responsibilities they will be expected to fulfill when they graduate.
- The 'paper round' – students present cases in a classroom setting (case-based learning, CBL). All 'additional' paperwork, e.g. results of investigations, drug charts, fluid charts, TTAs and death certificates (where appropriate), need to be copied by the students and brought to the round. Any clinical history, examination and investigation findings, pharmacotherapy or procedures may then be used to promote discussion and generate questions. Students should be encouraged to annotate charts to help pre-empt any questions you may generate.

### The planned clinical examination session

Small groups of students (two to six) are taken to the bedside, an 'expert' demonstrates the skills and then observes the students' performance of the skill. The main mistake teachers make during such planned sessions is using the patient as a chalk board, lecturing the students while ignoring the wonderful resource that is the patient and their clinical history and signs. These sessions must follow the simple philosophy of making the most of the patient .

### Opportunistic teaching and learning

By definition, opportunistic teaching and learning is unpredictable but can be maximised by setting learning outcomes or educational objectives, pre-planning and reflection on important generic and specific educational issues that may arise.

### *Thinking point*

Thinking about these traditional models of ward teaching, how could you update them to suit the environment of the 21st-century ward and help both teacher and learner?

See 'Teaching and learning at the bedside' on the [Explore around this topic](#) page and the [Facilitating learning in the workplace](#) module for more ideas about ward-based teaching.

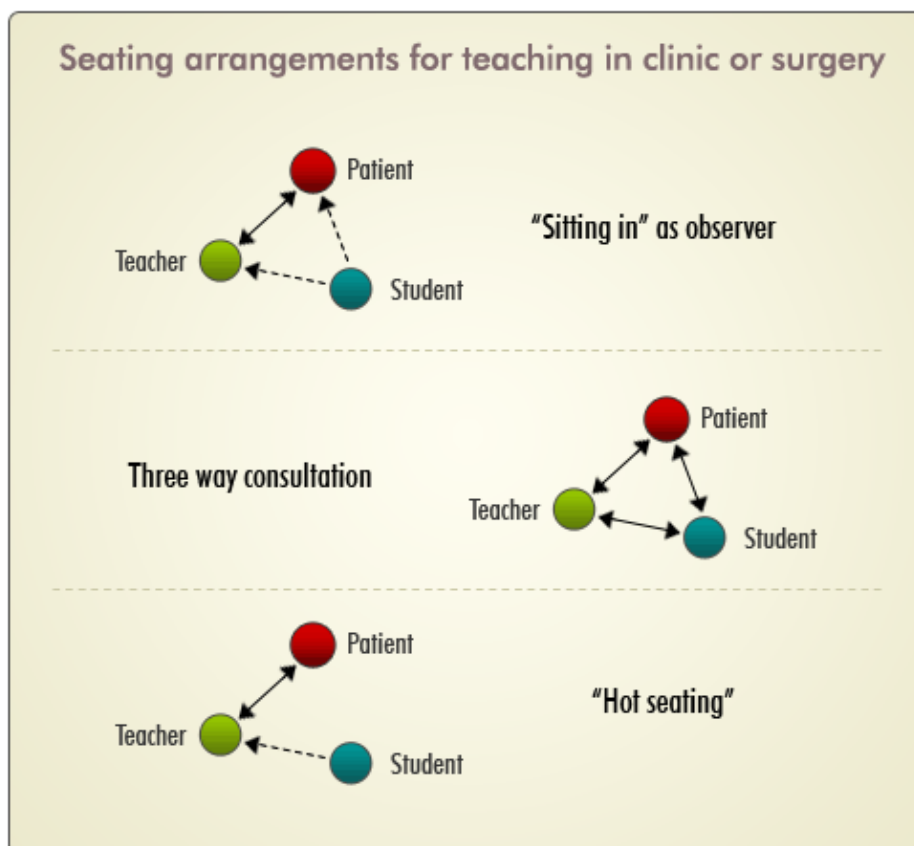
# Teaching and learning opportunities in the clinic setting

“Show me a medical student who only triples my work and I will kiss his feet”;

Law 11, The House of God, Samuel Shem (1978)

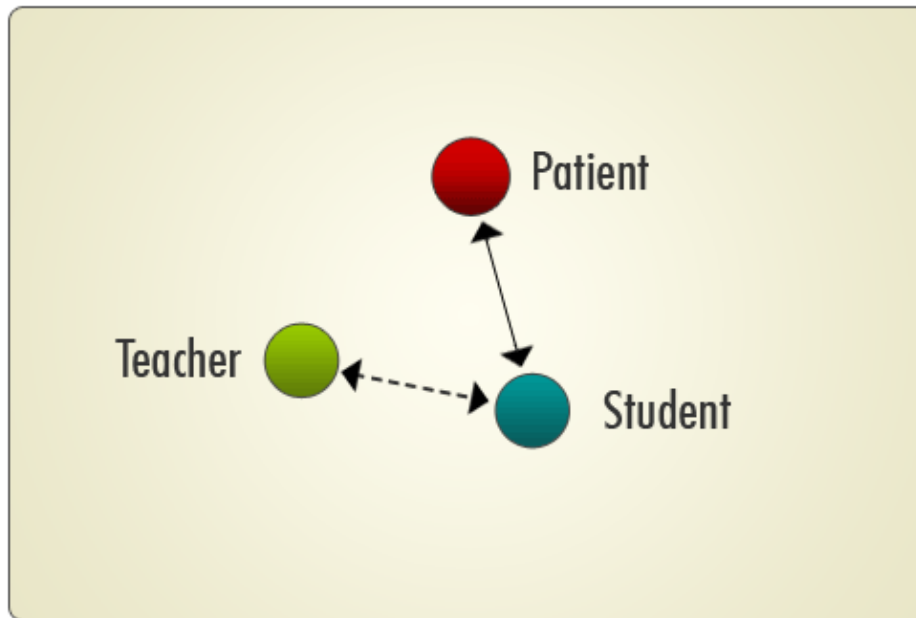
Both undergraduate and postgraduate teaching and training are common in the GP surgery and outpatient clinic settings. However, service demands often make this a poor learning and teaching experience.

Spencer sets out the models commonly used in these areas (see diagram below). Most of us will remember the “observer”-type model from our own undergraduate studies, where one is expected to absorb important clinical facts and areas of the consultation by a mystical osmotic force. This model is commonly used in busy clinics and surgeries and, in a similar manner to the business ward round, provides a poor learning experience. Augmenting this model by setting some learning objectives for the observer will help to structure the learning: ask learners to critique the interactions (when too busy to run through a difficult consultation) or to note down areas they would like to discuss afterwards. Set time aside after the clinic to address any areas that arise.



Source: Spencer J. *ABC of learning and teaching in medicine - Learning and teaching in the clinical environment* BMJ 2003;326:591-594

My own experience running a training clinic for several years taught me that both with the undergraduates and postgraduates, the hot seat model is by far the best, if time and patients (and patience!) allow. However, I would suggest a slight variation on the triangular set-up of the seating suggested by Spencer (2003). As shown below, I would suggest that once the initial introductions have been made the teacher/trainer should sit slightly behind the patient and carers. This allows the consultation to flow far more naturally between patient and student/trainee and stops the patient being able to refer to the teacher if and when the trainee gets into difficulties. Likewise the teacher and student can keep eye contact, allowing the teacher to send non-verbal cues to the student and interrupt prior to any difficulties arising. The hot seat model should be used with a certain degree of caution for more junior undergraduates who may struggle with such a challenging role.



Whichever model one chooses, the patient (and carers) should be informed of the student and teacher's role and given the right to refuse to participate in the teaching session, without prejudice to their care. In my experience, sending out a letter of explanation with the outpatient details is usually enough to encourage most patients to participate.

See 'Teaching and learning in the community', 'Teaching and learning in outpatients settings' and 'Using the clinical consultation as a learning opportunity' on the [Explore around this topic](#) page for more ideas about ward-based, GP-based and clinic-based teaching.

# Teaching and learning in simulated environments

Simulation is the reproduction of part or all of a clinical encounter through the use of manikins, computer-assisted resources and simulated patients. Advances in learning technologies have seen a massive rise in the availability and employment of high-fidelity simulators and simulation. However, low-fidelity resources have been used successfully for many years and, like the traditional teaching environments, need to be carefully incorporated into the spectrum of learning/training.

## *Thinking points*

- List the different types of teaching and learning that you would consider as simulation.
- What are the features that make these positive learning experiences?

Simulation:

- allows learners to practise in a safe, protected environment
- allows observation of a 'clinical episode' without disturbing the natural cadence of the interaction
- assists learners' reflection of their strengths and weaknesses through teacher, peer and 'patient' feedback, including video analysis
- allows teachers/staff to assess skills in an objective, reproducible manner
- allows the reproduction of important clinical scenarios that may be rarely encountered in real life, e.g. anaphylaxis
- allows assessment of complex interactions, skills and attributes that may be difficult to reproduce or assess, or are rarely experienced, e.g. working on call, multidisciplinary teamworking, discussing sensitive and/or important information with patients or carers.

Simulations vary in their relation (fidelity) to the real, lived experience.

Low-fidelity simulation might include using manikins to practise clinical examinations or procedures such as ophthalmoscopy or a vaginal examination. Manikins can also be used to rehearse the skills of simple clinical procedures such as suturing or the insertion of urinary catheters, intravenous cannulae and nasogastric tubes. Sometimes colleagues use each other to practise simple clinical procedures, e.g. taking a blood pressure or temperature.

The use of these relatively simple simulations may be augmented by incorporating them into clinical scenarios, contextualising their use and importance. This helps to introduce and reinforce good practice and

generic issues such as hygiene, patient and staff safety, teamworking, communication, clinical reasoning and problem solving.

Low-fidelity simulation has a number of advantages:

- it is easy to use – may be used within a purpose-built skills centre or a classroom
- it is relatively cheap to purchase, maintain and resource
- it is portable – many of the manikins may be stored in a central location and moved to teaching areas when they are required
- it is easy to store and secure
- lower costs mean they are easier to duplicate and thus provide larger numbers/groups of learners with practice; they are therefore also easy to use in station-based assessments, where several synchronous circuits may be running
- if sited in secure locations, it can be used for self-directed learning
- it allows learners multiple practice attempts before attempting the skill on a real patient.

Meller (1997) sets out a typology of simulators used in medical education (see figure below).

High-fidelity simulation involves an active simulator or some manipulation of simulated parameters. High-fidelity simulators and simulation have high start-up costs, which has led to increasing partnerships between undergraduate and postgraduate training facilities, sharing experience, resources and costs. As the continuum of training between the latter years of medical school and the formative years of postgraduate training continue to blur, these partnerships will become increasingly important, both for sustainability of the resources and the education of trainees.

**S1** = simulates patient and/or disease process

**S2** = simulates procedure/diagnostic test

**S3** = simulates a person (instructor)

**P** = passive simulator (provides element of realism)

**A** = active simulator (programmed elements change)

**I** = interactive simulator (elements change in response to user)

**High Fidelity Simulator** – S1, S2 or S3 with at an active (A) or interactive (I) element

Source: Meller G. A typology of simulators for medical education. *J Digit Imaging*, 1997 Aug; 10(3 Suppl 1):194-6.

### *Thinking points*

- What is your experience to date of using high-fidelity simulation?
- In respect to high-fidelity simulation, what do you think are the most important features for the learner?

Issenberg et al. (2005) set out the features that make high-fidelity simulation a positive learning experience.

#### 1. Feedback

As with many learning experiences, this was seen as the most important factor for the learner. Feedback can be instantaneous from video analysis, peer and tutor feedback, but may also be provided by the machine, allowing self-assessment and reflection. With video and computer analysis, data may be taken away by the learner for review and reflection at a later time or when revisiting the skill(s). Without feedback facilities, learners will often perpetuate poor practice.

#### 2. Opportunity and access

If the learner is to derive maximum benefit from the simulation then they must be able to practise and revisit the skills often. At present, this is one of the principal limiting factors in the use of high-fidelity simulation in the UK, but this should improve with increased resources within medical schools and associate teaching trusts.

#### 3. Individualised/adaptable learning facilities

The simulation/simulators should be able to be adapted to the needs of many learning/ training levels and abilities, and include a wide range of levels of difficulty. This facilitates the learner's journey from novice to mastery.

#### 4. Clearly defined training or learning outcomes

These need to be set against curriculum and assessment goals.

#### 5. Validity

(a) Face validity &ndash; how realistic do the trainer and trainee consider the simulation to be?

(b) Concurrent validity &ndash; the skills practised in the simulation should be transferable to the clinical area. This is often a problem with low-level simulation, where important areas of the real-life experience are not addressed. Thus simulation becomes &lsquo;instead of&rsquo;, as opposed to &lsquo;augmenting&rsquo;, the real-life skills.

(c) Criterion validity &ndash; the simulation and scenarios have clearly defined learning/training outcomes.

(d) Predictive &ndash; the learners' performance at any given time is predictive of their future performance.

(e) Construct validity &ndash; the simulation can differentiate participants along the expert&ndash;novice continuum. This is important in terms of learners &lsquo;cheating the system&rsquo; by learning to score well on the simulator, rather than actually learning the skill. This is commonly seen when undergraduates learn itemised checklists for OSCEs.

# The role of the patient in teaching and learning clinical skills

‘To study the phenomena of disease without books is to sail an uncharted sea, while to study books without patients is not to go to sea at all’;

William Osler (1849–1919)

This section gives a brief overview of some of the considerations when teaching with patients. These issues are expanded further in the [Involving patients in clinical teaching module](#) in this series.

Traditionally, clinical teaching has involved using real patients in various settings. This is an invaluable part of learning the art of medicine, as it enables students to apply learning to the real world, and also to learn from patients, which is often the most meaningful form of learning. Ensuring patients (and carers) are informed and involved in the learning process is one of the key roles of the clinical teacher.

While using real patients for teaching in clinical areas is often opportunistic (basing the teaching on who is on the ward, or attending the clinic or surgery), newer developments with simulated patients and trained real patients (lay clinical educators or patient educators) are being increasingly used within undergraduate and postgraduate training. The other type of simulated patient often used in medical schools is the well volunteer. These are ‘healthy volunteers’ (such as PhD students) paid to act as patients for clinical skills sessions and examinations. By recruiting and paying people, medical students can participate fully in the sessions and teaching is more predictable and productive. The ‘patients’ can be trained to give feedback similar to that of a lay clinical educator.

# Teaching and learning practical skills

For many years, medical students and trainees learnt clinical skills by the principle of ‘see one, do one, teach one’. However, there are few redeeming features of this model and nobody in the 21st century, whether patient, trainer or trainee, should be exposed to its dangers.

For the novice, skills should first be attempted in the secure environment of the skills or simulation centre and then practised until such time as they or their trainers feel they are competent to perform the skills on real patients. This is not to ignore the fact that simulation should augment, and not replace, real clinical practice, and one must be careful to reinforce this message in any assessment programme.

## *Thinking points*

- Think about the way you commonly teach a trainee/student a new procedure or skill. List the important steps, as if you were teaching someone else this method of delivery.
- How could you augment this method to ensure a large cohort of students all received similar instruction?

Peyton (1998), a general surgeon, describes an excellent and widely advocated model for teaching skills in simulated and other settings, known as the ‘four-stage approach’.

### **Stage 1**

Demonstration of the skill at normal speed, with little or no explanation.

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### **Stage 2**

Repetition of the skill with full explanation, encouraging the learner to ask questions.

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### **Stage 3**

The demonstrator performs the skill for a third time, with the learner providing the explanation of each step and being questioned on key issues. The demonstrator provides necessary corrections. This step may need to be repeated several times until the demonstrator is satisfied that the learner fully understands the skill.

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### **Stage 4**

The learner now carries out the skill under close supervision describing each step before it is taken.

*Adapted from Peyton 1998:174-77*

This model may be expanded or reduced depending on the background skills of the learner. Video may be used in Stages 1 and 2. As with all teaching, the learner must be given constructive feedback and allowed time for practice of the skills.

# How IT can assist in the teaching and learning of clinical skills

As with so many areas of teaching and learning, there has been a huge explosion in the availability of IT resources that can be used to help teach clinical skills. However, examination skills (and to a lesser extent procedural skills) are still heavily influenced by local &quot;experts&quot; who doggedly cling on to their own local variation on the way to perform given skills. While, in the main, this local variation is to be celebrated, it does lead to multiple, expensive and time-consuming reinventions of the wheel. With so many freely available web-based resources, a good starting point is to quality assure the best of these sites (an exercise that many large institutions are beginning to attempt) and make recommendations to your trainees and students as you would with course books.

You may wish to consider the following issues when assessing websites.

- Accessibility &ndash; can your students easily access a site within your training facility (hospital, clinic or surgery), using local IT resources (e.g. the libraries), in their homes and on other more distant sites (e.g. associate hospitals and training facilities)? It may be useful to bookmark these sites on the computers within skills centre and self-directed learning areas, and reference them in course literature.
- Suitability &ndash; sites that may be useful for postgraduate trainees may be totally unsuitable for novice clinicians and vice versa. Asking trainees and students to help out in this review is very useful and gives good insight into their learning needs.
- Local variation &ndash; it may be that your own teaching or that of your institution varies slightly from that on the recommended sites. It is worth highlighting the major areas of difference and offering explanations around them. Teaching, self-directed learning and assessment materials need to allow for these slight variations and not become so dogmatic as to exclude them. Inexperienced clinicians find these grey areas very hard to deal with, but it is beneficial that they see lots of different clinical models and variants on the web, just as they will do in real life.

Ensuring core materials are accessible to teachers and learners alike is key to their use. All UK medical schools now have their own intranet facilities with networked and virtual learning environments. Eventually these will be easily accessible, providing excellent communications and teaching and learning support for all. However, until this is the norm, core teaching and learning materials may still be required on DVD or similar formats for associate hospitals and teaching surgeries.

With increasing use of video and voice files in everyday life, lectures and learning materials are increasingly being provided to download onto portable media players such as the iPod. Sharing of such resources nationally and internationally will negate the need to produce similar

materials in local training facilities.

See [Further reading section](#) for more examples of what the world-wide web can offer.

### *Using IT in the teaching and learning of clinical skills*

- Before you reinvent the wheel (again), check out the vast range of resources already on the world-wide web
- Recommend ‘good’ sites in course literature
- Quality assure these sites, with your critique available to guide the learners
- Ask trainees to critique the sites (and make other recommendations)
- Ensure any recommended web-based learning resources are accessible to learners on local, distant and domestic access
- Most large institutions have excellent learning technologists and IT support to help you produce learning resources
- Get involved – with minimal training and advice, most teachers should be able to set up simple and effective learning resources on most virtual and networked learning environments

# The assessment of clinical skills

‘Examinations are formidable even to the best prepared, for the greatest fool may ask more than the wisest man can answer’

Charles Caleb Colton (1780–1832)

This section is a condensed guide to clinical assessments presently popular in the UK. It is meant as a complement to the [Workplace-based assessment](#) module and the 'Assessment' guide in its 'Explore around this topic' section.

## *Thinking points*

- List the clinical skills assessments you are familiar with; what are their strengths and weaknesses?
- What would you consider the most limiting aspect of assessing clinical skills?

A clinical graduating examination was first introduced in the UK by Professor Sir George Paget at Cambridge in the 1840s. Until the subsequent introduction of the Objective Structured Clinical Examinations (OSCEs) in the 1970s (Harden and Gleeson, 1979) very little changed. Most more established clinicians will remember the ‘challenges’ of the long case, short case and viva voce.

## **The long case**

While the traditional long case had relatively good face and construct validity, its weaknesses far outweighed these relative strengths. It was largely unobserved, statistically unreliable and often poorly structured.

In attempts to strengthen the format, Gleeson (1992) suggested a more structured approach, the objective structured long examination record (OSLER), but this is still rarely used.

Wass and colleagues (2001a, 2001b and 2004) advocated that the traditional format could be improved if: (a) there were observation of the interaction (see also Newble, 1991); (b) sampling involving 8–10 different cases per student; (c) comparable testing times to an OSCE were employed; and (d) one, rather than two, observers were used.

McKinley et al. (2005) have since advocated using a sequential approach to this and similar assessments, thus allowing institutions to exclude the competent from further testing, and concentrating on the borderline and poorly performing students.

## The short case

The traditional 'short case' assessment consisted of a candidate examining a series of 'real' patients, observed by two examiners. The candidate was then asked a series of questions around their findings, the differential diagnosis, causes and management. Whilst this mode of assessment has several appealing features (going some way to explain its continued use in many postgraduate examinations), it has largely been replaced by the introduction of the OSCE.

## Objective structured clinical examination (OSCE)

The OSCE consists of a circuit made up of a number of cubicles or 'stations' through which each candidate must pass. At each station the candidate is required to perform a given task. This is usually observed and assessed by an examiner, but may also include unobserved stations relating to previous tasks or related data. Tasks may include communication skills, history taking, informed consent, clinical examination of real and simulated patients, clinical procedures performed on manikins and data interpretation. Stations may assess various attitudes and behaviours, something the older assessments often failed to address. Each student within a given circuit is assessed on the same task by the same examiner. For more objectivity, the observer is provided with a detailed, itemised checklist on which to mark the candidate's performance. More recently, global rating scales have been advocated and used. Despite fears that their use would be a retrograde step towards the old subjective marking system, they have been shown to be as reliable as their detailed counterparts (Allen et al., 1998).

While often viewed as the 'gold standard' of clinical assessment, the OSCE has weaknesses, and it remains an assessment in evolution. Debate continues about the maximal duration of the stations, the minimum testing time required for a reliable examination, and the number of stations and tasks assessed. In most undergraduate examinations, these details are governed by the practical considerations of the number of students to be examined, the facilities available and, perhaps most importantly, the financial constraints. The administration, logistics and practicalities of running an undergraduate OSCE are comprehensively described by Feather and Kopelman (1997). The experience of the authors is that OSCEs are approximately 30–50% more expensive than traditional examinations. However, this must be set against their reliability, which is far superior to the traditional short case.

At present, most UK undergraduate high-stake OSCEs consist of 20 to 30 stations, each of approximately 5–10 minutes in length. It should be stressed that OSCEs of less than two and a half hours become increasingly unreliable and should not be used summatively. However, the 5–10 minute station format limits the type of task assessed and is probably more applicable to the assessment of students in the earlier years, when single tasks need to be assessed in isolation to ensure competence. At graduation, one is more interested in a holistic approach

and extended or paired stations may be used to assess a range of skills within a single clinical scenario.

## **Workplace-based assessment**

All postgraduate teachers and trainers (certainly in the UK) will be now familiar with the newer work-based assessments recently introduced into postgraduate training. These include the mini-CEX (mini-Clinical Evaluation Exercise; see Norcini et al. (2003)), Direct observation of Procedural Skill (DoPS) and Multi-source feedback (MSF).

But this is for another module. For a detailed description of their application and the theory behind them see the [Workplace-based assessment](#) module.

## To sum up

This module has provided an introduction to the teaching of clinical skills. As we have seen, clinical teachers will need to show a flexible and imaginative approach to their teaching. They need to be aware of theoretical models and best practice, and be able to adapt and incorporate them into their own practice. But amidst the high-fidelity simulators and web-based skills development programs, clinical teachers need to be role models, displaying all the best characteristics of our profession – dedication, ability and skill – enthusing and encouraging the next generation of clinicians. Above all, we must lead the way in demonstrating ‘caritas’ to our trainees, colleagues and patients.

## Congratulations

You have now reached the end of the module. Provided you have entered something into your log you can now print your certificate. To generate your certificate please go to ‘my area’ and click on ‘complete’ in the course status column. Please note, you will not be able to print your certificate unless you have entered something in your ‘reflections area’.

Please now take a moment to evaluate the course and enter your comments below.

## Further Information

This module was written by Adam Feather, a senior lecturer in clinical skills at Barts and The London School of Medicine and Dentistry. The module relates to areas 1, 2 and 3 of the Professional Development Framework for Supervisors in the London Deanery.

## Acknowledgements

Several small sections including using real and simulated patients and Peyton's four-stage approach were originally cited in Feather A and Fry H (2008) Chapter 23: Key aspects in teaching and learning in medicine and dentistry. In: Fry H, Ketteridge S and Marshall S (eds) A Handbook for Teaching and Learning in Higher Education: enhancing academic practice (3e). Kogan Page, London.

## Teachers' toolkit

[Planning, teaching and evaluating a clinical skills session](#)

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## Further reading and online resources

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Association of Standardized Patient Educators &ndash; US&ndash;based organisation; [website](#) provides good ideas around the use of simulated patients.

Association for the Study of Medical Education &ndash; [conference report](#) providing an extensive review of the employment of LCE in the UK.

Association for the Study of Medical Education &ndash; [report](#) on simulation in medical education conference, February 2004.

The Auscultation Assistant &ndash; a simple, nicely configured [website](#) directed at the early years of auscultation; there are many other sites that offer similar heart and breath sounds.

St George's, University of London e&ndash;Learning Unit &ndash; an excellent [website](#) under development at St George's Medical School. It contains both locally produced examination skills videos and procedural videos from Dalhousie University Medical School, USA.

Simulated Patients UK [website](#).

The New England Journal of Medicine &ndash; another excellent [website](#) available in most UK medical libraries.

University of Belfast Medical School &ndash; freely accessible, comprehensive [website](#).

# Course Glossary

# Learning Activities

Select one or more of the activities below to develop your teaching clinical skills.

If you are registered on the site, you can write up your reflections in the 'reflections area'. Click on the 'my area' link at the top of the page to access your personal pages. Please note you must be logged in to do this.

## Activity 1

The next time you are in your normal working environment take a moment to consider the teaching and learning opportunities.

- Consider the resources – the room(s), the staff, the patients, their carers, the patients' data. How can you improve on the way you incorporate them into your teaching? Write down an action plan as to how you will achieve these goals.
- Think about the trainees and learners who visit this area. How you can improve the experience for them? Ask some of them to provide you with feedback and opinion. What are the barriers preventing you from achieving these goals?
- How do you support the learning before and after the teaching sessions? Review the websites, textbooks and other resources (e.g. journals) you could use to improve this support. Write a bibliography and include your critique of the resources to guide the learners. Ask the learners/trainees to evaluate these resources and incorporate their feedback into the bibliography.

## Activity 2

Consider your teaching of a specific clinical skill or procedure. Write out a template for:

- another teacher to teach this skill. Is there any research or texts that support your methods?
- a trainee/learner to use in a self-directed learning session
- an assessment of this skill or procedure. This could take the form of an OSCE station, a DoPS or similar. What rating scales will you use and how generalisable is your template?

Ask someone appropriate to use the template and give you feedback on its strengths and weaknesses.