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A Peer Reviewed International Journal for the Advancement of Clinical Skills
– *'docendo ac discendo' – 'by teaching and learning'*



C.O.M.E.T. – A novel educational method in clinical skills

From simulation to reality

Shibboleths of incompetence

Development of a clinical skills bus: making simulation mobile

"See one, do one, teach one!" – the uphill struggle for clinical skills acquisition

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The International Journal of Clinical Skills looks forward to contributing positively towards the training of all members of the healthcare profession.

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Mission Statement

The clinical skills arena is an ever expanding field with an increasing wealth of knowledge; however there is no central resource for the sharing of evidence based research and information. The International Journal of Clinical Skills (IJOCS) is a peer reviewed International Journal, which will promote the sharing of information and evidence based research, as well as bringing together the clinical skills community.

The Journal aims to develop and maintain standards in research and practice, lay a platform for discussion and debate, and provide opportunity to present evidence based medicine and critical appraisal of research. Provision of this much needed resource for both students, teachers and healthcare professionals, will ultimately enhance patient care.

The IJOCS will be a regular publication, three times a year in the first instance, both online and in print. The implementation of the IJOCS website will provide a continual resource for daily use. Also, in conjunction with the 'Clinical Skills Lab', the IJOCS will allow access to an online database on over 200 clinical skills – launching in 2008.

A diverse range of reviewers support the Editorial Board, all of whom are leaders in their respective fields and the IJOCS prides itself on the quality of content. Contribution of original ideas, research, audit, policy, reviews, case reports and 'Letters to the Editor' are welcome from all those involved in this multidisciplinary field. Submissions are not limited to these specific publication types and your novel suggestions will be considered.

I wish to thank all those involved in the development of this unique venture – a Journal whose remit is highly significant to today's needs.

Dr Humayun Ayub

Editor-in-Chief

International Journal of Clinical Skills

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Foreword

International Journal of Clinical Skills – An exciting forum for clinical skills

There has been an explosion in the volume of medical information related to clinical skills, which are essential in our efforts to maintain optimal patient care. The International Journal of Clinical Skills (IJOCS) aims to disseminate this knowledge in an easily accessible form. This will not only enhance our attempts to provide a quality health service, possibly with some standardisation, but also provide a vehicle for teaching and learning, hence the Journal's motto – 'docendo ac discendo' (by teaching and by learning).

The IJOCS will not only serve as an avenue for publication of research papers, but will also act as a means of communication between clinical skills professionals at an international level. Consequently, those involved in the clinical skills field, can keep those in other countries informed of their activities, as well as offering best practice guidance.

Alongside this valuable publication, a continually evolving online database ('Clinical Skills Lab') will become available for students and teachers to access – this will hold extensive information on over 200 clinical skills. The Clinical Skills Lab will be regularly updated by all those involved in this field and provide a platform for discussion and debate.

The IJOCS also aims to present comment on items of specialist interest. For example, the current issue contains a paper by Professor Harold Ellis CBE, on 'Medico-legal consequences in surgery due to inadequate training in anatomy', and explores the potential niche for anatomical clinical skills training within the newly developed medical Foundation Years (F1 & F2). It is hoped readers will make use of the Journal to comment on matters such as this – and on others relating to the subject of clinical skills – by means of 'Letters to the Editor', research based evidence and shared practice.

In order for IJOCS to become an exciting forum for clinical skills, the Journal welcomes submission of innovative research, papers, reviews and case reports. Of course, submissions are not only limited to these specific publication types and your innovative ideas would be greatly welcome by the Editor.

I am confident that IJOCS will be appreciated by a variety of health care professionals, at an international level. It promises to be representative of an ever expanding field, and with the support of all those able to contribute, it will, without doubt become increasingly influential.

I wish those responsible for the production of the International Journal of Clinical Skills, the success which their initiative deserves.



Professor The Lord McColl of Dulwich CBE
September 2007

“See one, do one, teach one!” – the uphill struggle for clinical skills acquisition

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Introduction

Benner, (1984) proposed various degrees or levels of skills acquisition; novice, the advanced beginner, competent, proficient, and the expert¹. According to him, whilst the novice has little or no discretion and judgment, and adheres rigidly to target rules, the expert no longer relies on rules, he is intuitive and possesses an analytical approach to clinical skills situations. In the clinical scenario, these idyllic levels of expertise are not clear cut, but certainly, it illustrates the psychomotor progression through levels of skills acquisition.

What potential challenges does a foundation year doctor encounter in acquiring skills such as chest drain insertion, lumbar punctures or central venous pressure lines? Initial barriers to clinical skills acquisition include the limited number of opportunities and the random and irregular occurrence of practical procedures². This is complicated by the reduced working hours stipulated by the European Working Time Directives (EWTG). Competition amongst peers for the limited available practical procedures further compounds the struggle for clinical skills acquisition.

The duties of a doctor and the rights of a patient implies that clinical skills acquisition requires constant negotiation between doctors and patients, as well as balancing patients rights against self or individual professional development. Naturally, patients will rather the best practitioner perform their procedure and that they are not subjected to any unnecessary procedures and or risks. This ethical argument is an important limiting factor to the number of clinical procedures performed and who they are performed by.

Anatomical and physiological differences amongst patients present a variety of challenges during acquisition of clinical skills, and this necessitates performing practical procedures on a number of patients in different clinical settings in order to attain competence.

The optimum number of procedures required to achieve a minimum standard of competence is variable; this is operator dependent, and depends also on the methodology of skills acquisition, i.e. mentored or non mentored, skills lab or clinical/bedside scenarios. To this extent, the American Board of Internal Medicine (ABIM) recommended a specific number of procedures to be done as minimum standard for ensuring competence in these procedures. These standards however may not reflect actual procedural comfort or competence. They defined the comfort threshold as the number of procedures in which at least two thirds of the trainees reported being comfortable³. Cation and Durning (2003), validated the ABIM recommendations, and found that there is a wide variation in the number of attempts and time needed to attain competence in the measured procedures; their residents all achieved the recommended ABIM competency standards⁴.

Summarily, the challenges involved in clinical skills acquisition are onerous. These include the challenges of minimum standards setting and testing (professional bodies), the challenges of attaining numbers, and the challenges of matching numbers with standards in a bid to acquire competency!

Clinical Scenarios

Case 1: Four months into a medical rotation, a foundation year 2 doctor, finally has the first opportunity to insert a chest drain. The supervising registrar however is not available due to other pressing emergencies, and the procedure was deferred till the next day. Unfortunately, the Foundation Year 2 (FY2) doctor is off duty. A different trainee takes his place!

Abstract

The transformation from medical student to physician is a gradual process, requiring the assimilation of vast amounts of knowledge as well as the development of clinical skills. The junior trainee however, is expected to make several independent decisions during the course of their day to day practice including performing clinical procedures. Experience has shown that each doctor comes with a variety of skill mixes depending on previous training, exposure and experience. No two doctors will have the same abilities. Each doctor also has different degrees of competence for the variety of skills they possess. These inequalities do create anxieties both for the trainees and the trainers. Quality assurance and safety in patient care is the ultimate goal in clinical skills acquisition. How does a stark novice become proficient, or at least competent in the “required” skills expected for their practice? What are the challenges in the way towards utopia? This article focuses on the anecdotal scenarios, and trainee experiences, and also includes narratives of literature review.

Case 2: An elderly patient was admitted with gram negative septicaemic shock. He also had atrial fibrillation, which was being treated with warfarin. He required a central line insertion as he was very unwell. Although the attending SHO had inserted a few of such lines in the past, and was keen to “have a go”, the intensive care unit anaesthetic registrar was called in to place the line. It was thought that this was going to be a difficult case.

Case 3: A female SHO was asked by the ward sister to catheterise a female patient who came in urinary retention. The nurses were in hand over, and the patient was in pain. A catheter trolley was already laid out by the patient's bedside. The catheter was introduced by the SHO however produced no urine, and duly fell out with the balloon intact a few minutes after insertion, as the patient writhed in pain from her urinary retention. Closer inspection by nursing staff showed that the catheter had originally been placed in the vagina.

Case 4: The following exchange took place between an SHO and a patient who required his fifth abdominal paracentesis.

Patient: “I’m sorry doctor but how many of these procedures have you done?”

Doctor: “Well I’ve actually watched a few and done one supervised by the registrar”

Patient: “I don’t mean to be rude but I would rather wait till the morning when the registrar is around!”

Discussion

Little is known about the patterns of clinical skills acquisition of the different cadres of doctors^{5,6} including those practicing in the UK. Apart from learnt skills acquired in preparation for examinations, it is very difficult to objectively ascertain the levels of clinical skills acquired or available during day-to-day bedside clinical activities. As there are no set standards or set means of testing, it therefore follows reason to assume that this will vary widely depending on previous training and experience. The countries of training, degrees of exposure and previous learnt skills create a diverse entry point into post graduate training.

This unpredictable diversity does create concern in terms of quality assurance, and may in fact present a governance issue. The need for detailed study of clinical skills acquired, and perhaps the need for minimum skills set for different entry points of training is long overdue.

The case scenarios above illustrate very few of the day to day challenges in the clinical setting. Some of these are unavoidable, but a vast majority may be anticipated and perhaps prevented or mitigated. However, on occasions, genuine opportunities are lost due to the unavailability of a suitable or qualified mentor, and when a mentor becomes available, the trainee may be unavailable. Although the foregoing argument might seem to emphasise on the difficulties and challenges in skills acquisition, learning a new skill should be enjoyed and in the least seen as an altruistic entity for a variety of reasons. Clinical skills acquisition is essential for the individual's professional needs and personal development. The procedural skills of junior doctors have come under scrutiny from an economic and legal standpoint⁷. Optimising skills in practical procedures minimises risk to patients and improves the overall quality of care offered. From a clinical governance and training perspective it is important for junior doctors to acquire and develop practical procedural skills. Aside from proficiency requirements and professional standards of certification, the acquisition of clinical skills improves confidence levels amongst trainee doctors.

In conclusion, trainee programs should be designed as such that the chance element is removed or minimised. The acquisition of clinical skills should not rely solely on the individual's efforts and determination to take up any or every procedural opportunity but that there should be equitable distribution of opportunities. In addition, forward planning and improved communication amongst various departments could turn half chances into genuine educational opportunities. Perhaps the appointment of a clinical skills director for each hospital who would coordinate inter-departmental skills mentoring is long overdue.

Marel et al, 2000 studied skills acquired during training by Australian residents during their early training years⁸. They found that early postgraduate medical trainees acquire high levels of confidence and experience in most skill areas after two years of training. The first postgraduate year, they found was particularly significant for the development of clinical skills. It therefore follows that these skills ‘set’ should be tested early during postgraduate years, as part of an assessment both for certification and progress through specialization. In theory the current specialty training scheme (ST) seeks to address some of these inadequacies through the Direct Observation of Procedural Skills (DOPS), Case-based Discussions (CBD) and Mini-Clinical Evaluation Exercises (mini-CEX). This in essence is to provide an even playing field of skills acquisition and competency for various levels of training. The success of these programmes is anticipated.

There is an increasing influence in the application of sophisticated technologies to medical education and training. These provide additional resources for trainee doctors to attain competency while minimizing risks to patients. The concept of clinical skills centres has gained momentum on an international scale⁸. Clinical skills and simulation workshops offer training in a controlled environment away from patients and contribute towards a smoother transition from novice to expert. Computer-based video training (CBVT) can enable surgical trainees to acquire fundamental technical skills, and is effective in a self-directed learning environment among novices⁹.

Suffice to say that several other novel modalities are emerging in clinical skills acquisition and mentoring. These include Electronic and digital media, distance learning and tele-mentoring; robotic trainer with feedback¹⁰. Most importantly, besides these technologies is the need for coordination of efforts across hospitals and hospital departments, with supervision and log book record keeping.

The old notion of “see one, do one, teach one” unfortunately is well out of date in the current medico-legal climate. The need to regulate clinical skills acquisition has become ever more pertinent. To not regulate borders on negligence and leaves junior trainees well exposed. On the other hand, junior trainees will have to cope with regular documentation of their skills and interference by regulatory bodies, as a trade off. The Royal postgraduate colleges who were mainly examination and certification bodies are currently being reformed. In future, parallel regulatory bodies will function in a more hands-on supervisory manner on competency based issues¹¹.

Conclusion

The road to clinical skills acquisition is long and challenging. To date, the initiative has been on the trainee to self-manage their ‘portfolio’ of clinical skills. These include procuring educational opportunities and finding appropriate mentors. This status quo is currently untenable. Efforts should

be regulated by governmental and professional bodies, but deregulated enough to hospital and departmental initiatives.

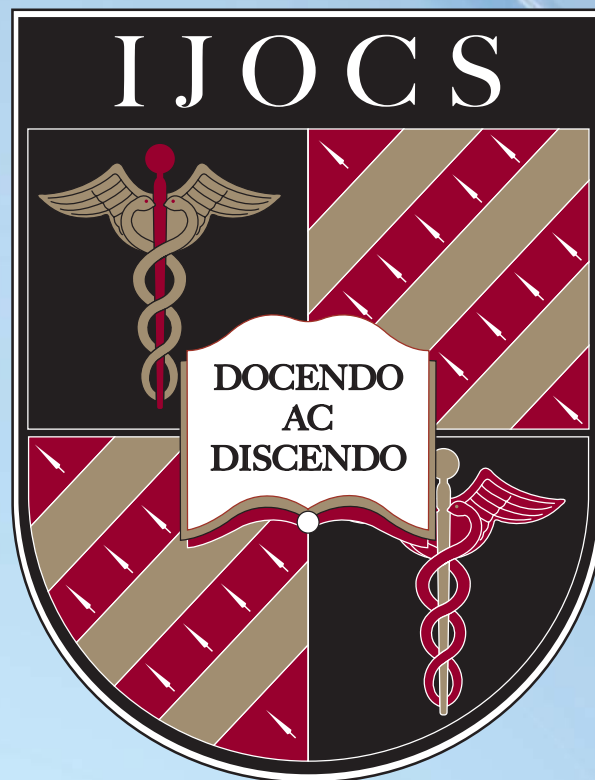
Little is published in the literature on the pattern of skills acquisition of UK trainees, including a sizeable proportion that completed their primary medical education overseas. The OSCE is thought to be a highly reliable and valid clinical examination that provides unique information about the performance of individual trainees and the quality of their postgraduate training programmes^{7,12}. This should be widely incorporated into trainee assessment. An extensive audit of trainee doctors' clinical skills will be a plausible starting point. Subsequently, setting of minimum skills set, and minimum numbers of procedures per clinical skill is important. These 'standards' need to be tested and validated at regular intervals during the training years in order achieve a level playing field and to ensure quality assurance in bedside care. The challenge remains whether junior doctors in training will be able to achieve the required numbers of procedures at a desirable level of competency or proficiency. ■

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Clinical Skills Lab (CSL)

The Clinical Skills Lab database will comprise information on over 200 clinical skills, broadly separated into:

- History taking skills
- Communication skills
- Clinical examination/interpretation skills
- Practical skills

Not only will this valuable resource provide material to students as a learning tool and revision aid, for example, OSCEs, it will also offer educational materials for teachers from all disciplines, allowing some standardisation of practice. The Clinical Skills community will also be encouraged to contribute, making this database interactive.

CSL is Launching in April 2008 – view sample material at **www.ijocs.org** and take advantage of a 50% discounted rate if booked prior to **1st March 2008** (enter promotional code **CSL63R** at registration)