Abstracts

Clinical Skills: Fit for Practice?

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An Undergraduate Peer teaching scheme: are there benefits for the Peer Tutor?

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Background
Medical students need to develop competence in many clinical skills and procedures. In a large medical school with over 400 students annually the opportunities for skills experience vary. This research investigates the pros and cons for the peer tutor within a large peer-teaching initiative at King’s College School of Medicine. Peer teaching is defined as ‘gaining knowledge, understanding and skill through explicit active helping or supporting among status equals or matched companions’.

Aim
The aim of this research is to investigate whether the peer-teaching scheme has significant benefits for the peer tutor.

Objectives
From a literature review and professional experience this research seeks to:

- Identify the benefits to peer tutors of engaging in the peer teaching scheme
- To trace their development as they go through the scheme looking at their different needs and perceptions
- Investigate the nature of the support the peer tutors need in order to develop to make the most of the opportunity

Methods
All the peer tutors attend a training day, which includes the clinical skills to be taught in the programme and microteaching. The peer tutors will be asked to write reflective diaries throughout the scheme reflecting on the training and their teaching sessions. Evaluations from both the tutor and tutee of the teaching will be collected to assess learning outcomes and the appropriateness of the scheme. Focus groups will be held for the tutors to ensure the scheme is meeting their learning objectives and to investigate further areas highlighted in their reflective journals. These will be backed up with in-depth interviews after the focus groups. Observation of random teaching sessions will also happen during the scheme.

Discussion
We found in our first peer-teaching scheme some evidence that the peer tutors gained knowledge and confidence through the process of actually doing the teaching. Using students as an additional teaching resource was a practical way of addressing the problem faced by large cohort numbers in the acquisition of clinical skills. This research plans to investigate further the value of the scheme for the peer tutor.

References
The Arterial Blood Gas Simulator increasing the fidelity of the simulated workplace

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Context
The aim of this abstract is to describe the process of developing an arterial blood gas simulator that has the ability to mirror it’s real world counterpart and provide an added element of realism within the simulated workplace.

Simulation is often seen as being appropriate to recreating acute clinical areas such as Critical Care, theatre and A&E and as such the introduction of a new piece of simulated equipment that is essential for the management of many patients can be seen as a leap forward in enhancing the fidelity of the simulated workplace.

Method
Firstly a real ABG machine carcass was stripped of its original components and a fluid collection system designed.

A 19” touch screen interface was then fitted to mirror the interface of the real ABG machine. The final part was the replication of the ABG machine’s software using Microsoft’s Visual basic, this allowed the candidate to enter patient details and then submit an ABG sample for analysis. The software then allows the controller to input accurate ABG results and then send these though a local area network to the candidate who can then use these results to enhance their management of the simulated patient.

Impact
The impact of the ABG simulator is that it provides a real life task that can be delegated to a member of the team, and is then carried out as it would be in real life practice. It mirrors real life practice which is the rationale behind simulation based education and provides the learners with the information required to effectively manage their simulated patient, greatly enhancing the learning environment and the learner’s simulation based experience.
Student nurses’ perceptions of the impact of a simulated environment on their learning experience

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Background
The move from hospital-based nurse training into Higher Education has resulted in graduates who are often lacking in the clinical skills required in practice (1,2). To address this issue, schools of nursing introduced clinical simulation.

Research to date has established that simulation helps the transfer of knowledge to practice in the short-term (3) whilst acknowledging other influencing factors like role modelling, supervision and feedback.

Research is needed to explore how simulation works from a holistic cognitive perspective and to identify if the transfer of knowledge is sustainable over a longer period.

Aim
To explore the lived experiences of undergraduate (Adult) nurses, in relation to their development of clinical skills within the psychomotor, cognitive and affective domains following exposure to simulated teaching and learning within a simulated clinical environment and support by their mentors in clinical practice.

Research Questions
Does simulation meet the learning needs of the individual student and facilitate preparation for practice? If so by what means?
What social factors influence, either positively or negatively, the development of confidence and competence in practicum?
How does the student perceive their psychomotor, cognitive and affective development, in terms of application of theory to practice during the transition from novice to competent practitioner?
In what ways do the different facets of the mentor’s role, in terms of role modelling, supervision and feedback affect the confidence and competence of the student?
How do mentors perceive the students’ performance in clinical practice?

A phenomenological approach will follow a purposive sample of 12 student nurses over two years, from entry into the adult branch to registration. Data collection will involve non-participant observation of the student undertaking supervised clinical practice; reflective self-analysis by the student and in-depth interview.

Data will be analysed thematically using Collaizzi’s Framework and Nvivo7 software.

Research Ethics approval has been granted and the study is due to commence.

References
Learning a core clinical skill in a multiprofessional setting

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Context and setting
Both undergraduate medical and nursing students learn core clinical skills in the Clinical Skills Centre in Dundee. Traditionally the two groups of students are taught these core skills uniprofessionally, even for those basic skills which are shared, such as hand decontamination or urinalysis. Although students in Dundee engage in inter-professional learning\(^1\), little multiprofessional learning where students learn the same skills together has previously taken place.

Why the development was introduced
Learning in groups with members from different professional backgrounds is becoming an increasingly common feature within clinical education yet few studies show whether a multiprofessional approach enhances or detracts from the learning of basic clinical skills\(^2\). Our aim was to explore this in addition to giving students an early experience of learning with students from other professions.

What was done
A teaching session lasting 90 minutes was designed to introduce medical and nursing students to hand decontamination, clinical safety and infection control. Learning took place in groups of ten students rotating through four practical sessions. Some learning groups were mixed with medical and nursing students, whilst other groups were uniprofessional.

Questionnaires were administered to the students six months after the learning experience. The data gathered cover basic demographics, self-reported practice of a skill (hand decontamination), ability to relate information from a previous skill teaching session to clinical practice and attitudes to multiprofessional learning.

Evaluation of results
This study is ongoing. We will present the results of the questionnaire as a poster at the ASME Clinical Skills conference on 24 April 2007.

We hope to show whether students find this type of early multiprofessional learning experience acceptable. We are interested as to whether the students’ learning of basic clinical skills is enhanced when they are taught with members of other professional groups.

References
Video feedback in Simulation Based Medical Education (SBME): a comparison of final year medical students’ and faculty perspectives

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Background
Video feedback is an important component of SBME. This has been employed to strengthen the impact of learning opportunities and to provide strong incentives to modify behaviour.[1] One of the authors (KK) designed the SBME course in which the faculty employed video feedback during medical student teaching.

Aims and Objectives
To compare the perspectives of students and faculty on the video feedback in SBME to determine the effectiveness and suitability of this tool in developing clinical skills, professionalism and reflective behaviour in medical students.

Methods
28 Medical students and 4 faculty members were surveyed online using Weblearn®. The response rate was 59.25 and 100% respectively. Students and faculty were presented with similar statements for comparison. Responses were recorded on a five point scale to indicate ‘agreement’ or ‘disagreement’ with the statement.

Results
Professional development was thought to be improved by peer feedback and watching peer performances in view of 100% and 81.25 medical students and 50% and 100% faculty respectively. 93.75% of medical students compared to 100% of faculty agreed that video feedback allowed students to identify areas for their own future development. Mean anxiety scores (on an ascending scale of 1 to 10) were 6.125 and 2.68 at the beginning and end of the session respectively.

Discussion and Conclusions
To the best of our knowledge this is the first study of this nature in undergraduate medical students. Our results are similar to studies done in junior doctors having video feedback in different settings.[2] Medical students believe that video feedback highlights areas for their professional development not identified by traditional teaching. Their initial anxiety decreases during feedback. We conclude that carefully conducted video feedback is effective at delivering set objectives and students’ and faculty views are similar on the majority of the issues.

Key Words
Medical Simulation, Medical Students, Video feedback, Faculty.

References
Competence in Practical Procedures Among Foundation Year 1 Doctors

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Background
With the advent of MMC the emphasis is on trainees being able to demonstrate their abilities and competences against set standards. The Foundation Programme curriculum identifies 12 practical procedures that newly qualified doctors should be ‘competent and confident’ to perform by the end of foundation year 1 (F1).

Aims and Objectives
To assess which of these core procedures F1 doctors feel competent to perform, and identification of the learning opportunities that they experience in order to acquire these skills.

Methods
A questionnaire was issued for the self-assessment of competence in the nominated procedures to Trent Deanery F1 doctors in 2005-2006. This took place during a programme of simulation based training days at the Trent Simulation and Clinical Skills Centre. The subjects were asked to rate themselves in their level of competence for each core skill and state which learning opportunities they had experienced to support the development of these skills.

Results
175 doctors completed the questionnaires. There was wide variation in the perceived level of competence between the different procedures. 100% of our cohort felt that they were competent performing blood cultures, whereas only 54% felt competent using local anaesthetics. We are currently analysing the different learning methods to determine whether there is a positive correlation between certain types of learning opportunity and the self-rated acquisition of competence.

Discussion
It is clear that there is a disparity in the expected level of competence and that achieved by the F1 doctors in our study. Certain skills will need targeting specifically within the training programmes that currently exist.

Conclusion
The teaching of practical skills to foundation doctors is inadequate in some areas. There is scope for developing strategies to address this, and appropriate training resources need to be identified to help correct the problem.
Audit Skills: What can be gained from the Foundation Programme?

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Context and setting
Doctors in training are required to acquire generic skills as part of their Foundation teaching. Audit is encouraged to promote improved clinical practice and standard setting. Trainees are encouraged to collect evidence of audit activity for their portfolios, as part of their competency skills matrix. Trainees in general practice placements are encouraged to use their experience to participate in audit.

Reason for introduction
Audit is seen as an essential skill for medical practitioners. Encouraging audit skills is part of the generic skills within the Foundation Curriculum. The general practice environment is flexible to allow trainees to pursue areas of future career interest through audit.

What was done
General Practice Clinical supervisors attended training sessions prior to placements of Foundation doctors within a practice. Suggestions of teaching activities within the practice including audit was promoted. Suggested timetables clearly indicated space for private study, audit or project work. An evaluation was undertaken to gather data on audit activity in general practice amongst Foundation doctors and their supervisors, via a web based survey.

Evaluation results
General Practice placements appear to encourage trainees to participate in a range of audit activities. Clinical supervisors are essential to supporting this activity.
Using a Simulated Urology Outpatient Clinic to prepare students for learning in ambulatory settings

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Background
An increasing proportion of patient care is now delivered through ambulatory facilities in outpatient clinics and daycase surgery. Clinical teaching must therefore occur in a fast moving context, with high patient turnover. This limits the time students have with patients and with clinical teachers. Different skills are needed to optimise learning in these environments. Our aim was to use a simulated urology outpatient clinic to enhance student learning in a busy NHS department.

Aims & Objectives
The aim of the simulated clinic was to equip students to optimise the learning opportunities in the outpatient environment without compromising the service to patients.

Methods
Fourth year medical students at the start of a one-week clinical teaching block were given a half-day introduction in a simulated urology outpatient clinic.

Action research principles were used to design, deliver and evaluate this model for teaching and learning in the outpatient setting.

Clinical staff and student evaluations were gathered using an anonymous online questionnaire.

Results
98% of students agreed that the simulated clinic helped them take a focussed urological history
98% agreed that the simulated clinic helped them to present a case based on a core clinical problem in urology
89% of the students agreed that the simulated urology clinic prepared them for learning in the outpatient environment

Discussion
Simulation is a valid replication of a clinical setting where skills can be rehearsed in a safe environment, and can be an effective tool for preparing students for learning in specific workplace contexts.

Conclusion
The results demonstrate the positive impact of the simulated urology clinic. This can be developed further as a model for enhancing learning in other specialties where a large proportion of patient care is delivered in ambulatory settings.
Teaching Clinical Skills in Multi-Professional Groups

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Background
A wide range of professionals provide care for patients in the primary care setting. Practitioners require a range of clinical skills including clinical examination to ensure competent practice. Acquisition of these skills should occur through a variety of methods. Formal teaching can be provided using a range of recognised teaching modalities, to encourage learning through work-based and classroom teaching settings.

Aims and objectives
A clinical skills course was provided to a group of multi-professional learners, using a range of teaching materials. The aim of the course was to support the learner in understanding that clinical skills acquired through classroom teaching can be applied to work-based situations.

Methods
A range of teaching material was delivered to a multi-professional group on clinical skill teaching. Small group work, feedback and demonstrations were used. Qualitative data was collected as part of the evaluation. Thematic analysis was applied.

Results
Feedback was generally positive. 4 themes were identified

- Demonstration and feedback techniques, enabled the learners to identify their own strengths and weaknesses within a clinical skill area.
- Techniques used throughout the course, may be taken back and applied through work-based practice.
- Time away from providing service in the practice, to learn new skills, was felt to be worthwhile by the learners.
- Clinical supervisors in practice were being underutilised.

Students felt the need for more formalised classroom teaching, to promote improved clinical practice.

Conclusion
Multi-professional small group teaching appears to promote an understanding of ways in which formal classroom teaching can be applied to work-based practice.
How foundation doctors spend their time at work: are we teaching the right clinical skills?

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Introduction
Medical education in the UK is undergoing a number of major changes, particularly with the introduction of MMC. The stated goal is to increase patient safety through better training of doctors. These changes are inextricably linked to the implementation of the European Working Time Directive; as the number of hours worked by trainees is further restricted, it becomes increasingly important to ensure that teaching is as targeted and effective as possible. However, despite an abundance of anecdotal views, no previous studies have assessed which skills junior doctors use most frequently on a day-to-day basis. The present study aims to address this by quantitatively evaluating the tasks performed by foundation doctors during their time at work.

Materials and Methods
Two F1 doctors participated in a prospective two-week study during which they recorded all the activities in which they were involved. To ensure capture of all actions, “free text” entries were made and only later categorised for analysis. Time spent on emergency admissions was not included.

Results
In all, 130 hours (80%) of the time spent at work during shifts was accounted for. Most time was spent on ward rounds (16.8%), organising blood tests (12.1%), writing up IV fluids (4.8%) and discharge letters (4.8%). Other common activities included clerking elective admissions, managing plain radiographs and other specialist tests, dosing anticoagulants, requesting specialist reviews and rewriting drug charts.

Conclusions
The study appears to confirm anecdotal data that after ward rounds most time is spent organising blood tests, writing up IV fluids and discharge letters. These are areas that typically receive little or no formal emphasis in undergraduate or postgraduate training. Given the frequency with which these skills are used and the relative ease with which they can be taught it may be worth instructing juniors on best practise early in their training.
A national network for simulation and clinical skills based education in healthcare

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There is a significant increase in enthusiasm to explore the opportunities offered by simulation-based education for healthcare staff for various reasons including:

- A raised awareness of simulation as an educational approach due to publication of experiences involving existing clinical skills units and advanced simulation training centres.
- The increased affordability of sophisticated part-task trainers and whole-body manikins, and recognition of how simulated patients (or ‘lay clinical educators’) add value to training.
- The increasing focus on patient-centred care and requisite risk management and patient safety strategies, associated with ever-changing roles and responsibilities of healthcare staff.

One of the risks with such rapid expansion of interest is delayed awareness amongst those involved as ‘educators’ of the strengths and weaknesses of less familiar educational tools. In addition those groups with expertise within particular domains of simulation may be slow to capitalize on the resources and experiences available from those working with different simulation methodologies.

There are several key issues to address in order to avoid such consequences, such as:

- The need to encourage better networking and gain a consensus of educational strategy on a national scale by promoting closer links between the broad range of undergraduate and postgraduate healthcare educators currently involved in advanced simulation and clinical skills training, especially as the distinction across this spectrum becomes increasingly blurred.
- Describing the range of attributes valuable to healthcare educators who will be involved in the future development and delivery of effective simulation-based training across the UK.

ASME could play a role in drawing together existing groups such as the Clinical Skills Network, the National Association of Medical Simulators, and those representing simulated (standardized) patients so that a more cohesive educational body is created to the benefit of all in terms of sharing best practice and exploring appropriate research strategies.
Final year students’ perception of the role of a ward simulation exercise in preparing them for fitness to practice

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Background
Since its development 5 years ago, the simulated ward has been adapted for use by a variety of undergraduate students and postgraduate trainees. By using a combination of simulated patients and simulators in scenarios developed from real cases, the participants are able to experience situations that occur on general medical wards within a safe environment. This allows them to practise a variety of required skills\textsuperscript{1,2}, both technical and non-technical.

This year, a cohort of final year medical students took part individually in a ward simulation exercise. The exercise lasted for 25 minutes and the student took the role of the junior doctor. There was a qualified nurse within the ward, and a medical registrar ‘in clinic’ who was contactable by phone.

Aims and Objectives
The aim of the study was to determine what the students perceived they had learnt from the exercise.

Methods
The students were invited to participate during their medical FY1 shadowing block. They were eligible if they had an attachment in Dundee during the 3 month study period. Following the exercise they completed a questionnaire using a combination of Likert scales and open questions. The answers to the open questions were collated into themes by three individuals.

Results
34/38 invited students attended the exercise.
All 34 students completed an evaluation form.
All found the exercise useful (16) or very useful (18) and 32/34 thought all 5\textsuperscript{th} years would gain from it.
The perceived benefits include
- highlighting the need to prioritise
- demonstrating their strengths and weaknesses
- having to make decisions for themselves

Discussion
The students found the exercise useful and perceive that it highlighted certain important areas that they can focus on in the months prior to qualification.

Conclusion
The simulated ward environment increases the students’ awareness of what is required to be ‘fit for practice’.

References
Logging the experience

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Background
MTAS applications and Tomorrow’s Doctors require evidence of competency in a wide range of practical skills at graduation. Transferring practice from the skills centre to the ward is an ongoing challenge. Research suggests that anaesthetic SHOs need to perform at least 79 successful cannulation attempts before attaining competency (achieving 80% success rate) (1). Venepuncture is formally taught in the skills centre in Year 2 and cannulation early in Year 3. The University of Edinburgh introduced a pilot logbook in 2006/7 to encourage opportunistic learning and skills acquisition in the Gastrointestinal and Locomotor modules of Year 3.

Aims
To document and encourage the acquisition of practical skills in the clinical area by use of a logbook.

Methods
Following completion of a pilot run of the logbook in GI and Locomotor modules of Year 3, an online questionnaire probed its impact looking specifically at acquisition and practice of skills on the wards.

Results
Preliminary response rate of 78/130 (60%). 50.7% of responders indicated they were competent in venepuncture however practice is limited with 29.2% achieving 5 or more successful attempts. Reported competence in cannulation was lower at 13.5% with just 4.1% completing 5 or more successful cannulations. Completed results will be presented.

Conclusion
Medical students relatively over estimate their confidence in the face of low practice of practical skills in a clinical setting. However Year 3 students can appreciate the complexity of different skills. Logbooks are a tool to potentially encourage acquisition of competency in practical skills.

Reference
(1): De Oliveira Filho GR. (2002). The construction of learning curves for basic skills in anaesthetic procedures: An application for the cumulative sum method. Anaesthesia & Analgesia, 95(2), 411-416
A novel way of delivering an international critical care programme in the UK using simulation

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An international campaign to reduce deaths from sepsis ‘the Surviving Sepsis Campaign (SSC)’ was initiated in 2002. We utilised high fidelity simulation as an educational method to deliver a training program increasing the awareness of the SSC guidelines.

A teams-based course including A&E, Acute Medicine and Critical Care was constructed. The 1-day course followed the journey of a septic patient from initial admission throughout his hospital stay including High Dependency and Intensive Care. Teams where made up of Doctors and Nurses from A&E, Acute Medicine and Critical Care.

Setting
The course took place within a high fidelity simulation centre, set up as a critical care area. The appropriate settings were re-created and the various stages of sepsis programmed into the physiologically accurate software of the METI human patient simulator.

Results
A total of 8 teams comprising of 98 members attended the course during 2006. Each candidate was provided with a questionnaire both before the commencement of the course, and again at the end of the course day. The questionnaire was based upon a five point Likert scale. The results of the questionnaire showed that 97% of candidates felt that simulation was a useful tool for teaching sepsis. 93% of candidates felt that the simulator based course would allow them to manage sepsis more effectively in their clinical practice. There was also a 53% improvement in understanding the sepsis care bundles following the training. In summary a simulation based course is a most useful educational method for imparting knowledge of a new critical care initiative.
Putting the 360º into Multi-Source Feedback (MSF)

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Background
During the 1990s peer assessment ¹ evolved into MSF as different professional groups contributed ratings. ² There is intuitive face validity to including every perspective in the assessment process. However, there is no published evidence that different professional groups rate doctors differently using the same instrument.

Objective
To test the hypothesis that different professional groups provide different insights into a doctor’s performance.

Method
The data from the Royal Colleges of Physicians (1) and National Clinical Assessment Service (2) MSF evaluations (total 353 doctors) were examined separately using a variance component analysis suitable for unbalanced data (VARCOMP in SPSS; MINQUE procedure). The comprehensive regression model was refined (reverse stepwise regression) until only factors with an independent effect remained. The effect on scores of the rater’s professional designation ($V_{des}$) and the interaction between rater designation and doctor ($V_{des*doc}$) are reported as the main outcomes measures.

Results
The consistently high or low scores given by each professional group ($V_{des}$) independently influenced doctors’ scores. This effect contributed 6.2% and 5.4% of the score variance in evaluations 1 and 2 respectively. In both cases the highest scores were given by PRHO/SHOs and secretaries, and the lowest by Allied Health Professionals and Consultants. The unique perspective of a particular designation, which manifests as consistently favourable or critical ratings on particular doctors compared with other designations ($V_{des*doc}$) also influenced scores. This effect contributed 6.2% and 3.0% of score variation respectively.

Discussion & Conclusions
The composite scores of two doctors rated by 4 AHPs and 4 SHOs respectively would be more influenced by the raters’ designations than the ‘true’ differences between the doctors. Different professional groups provide significantly different insights. For example, a doctor consistently rated highly by peers may be consistently rated poorly by nurses, who see different aspects of performance. Feedback comments illustrate these differences. A consistent and balanced mix of rater designations is required for validity and reliability.

References