



INTERNATIONAL JOURNAL OF CLINICAL SKILLS



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



In this issue:

Emotion and concealed motivation in the clinical interview

Peripheral cannulation: what's the benefit and what's important?

Adapting clinical skills training to an Arabian Gulf setting

Role of clinical nurse educators in medical education

Simulation learning in health care

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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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Foreword

Clinical skills change lives...



Dr. Abigail Boys & Regina (October 2010)

Amidst the fast paced achievements in international healthcare and education, it is important not to forget what clinical skills mean in reality for our patients – clinical skills change lives.

After having initiated the charitable society Willing and Abel in 2008, many health care professionals have had the pleasure of using their specialised and expert clinical skills to help children of developing nations requiring specialist surgery. An example is 13 year old Regina who was born with a tumour fatally spreading across her face (congenital lymphangioma) – she successfully underwent major surgery at The Royal London Hospital (United Kingdom) in December 2010 and now continues to lead a normal life in Ghana, West Africa (www.bbctelevision.co.uk).

Such success exemplifies a fundamental strength of the clinical skills community in its ability to evolve and adapt to meet the challenges and expectations of a modern healthcare arena. Healthcare professionals need to have clinical skills training which will allow them to meet present and future challenges, which include an ageing population, multiple morbidities and increasing patient expectations.

There is no doubt that the International Journal of Clinical Skills provides an excellent forum for the global healthcare community to further clinical skills research, as well as advancing the training of students, academics and health professionals. I wish the International Journal of Clinical Skills continued success for its admirable work in this important field.

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Abstract

Background: Eight medical students from the University of Dundee (UK) embarked on a four week ‘Student Selected Component’ (SSC) focussing on issues surrounding patient safety. The component was student-led with the students deciding on a range of projects, which would enhance their understanding of Patient Safety and their abilities in Quality Improvement, and which bore particular relevance to their future work as junior doctors. Before commencing the projects, the students all completed the Institute for Healthcare Improvement (IHI) basic certificate in ‘Quality Improvement and Patient Safety’.

Projects: Five different projects were chosen, with certain aspects interlinking. The students designed an audit of oxygen prescribing practices and then implemented a PDSA (plan-do-study-act) cycle of change to improve these practices, assessing its effectiveness. They used innovative technology to gather and analyze their data, using PDA devices. The usefulness of these devices in clinical practice was also assessed, and the students began to develop teaching resources for practical procedures which could be carried on such devices and used in the clinical setting. The students also developed and ran an inter-professional ‘Patient Safety Workshop’ with students from the School of Nursing, focussing on medication errors. With the help of colleagues from the School of Nursing, the students went on to create a website for the IHI Dundee Chapter, to allow future students access to Patient Safety teaching materials and information about ongoing Quality Improvement work happening in Tayside. Finally, students attended the meetings of the National Health Service (NHS) Tayside Modernisation and Development Team, in order to gain an insight into NHS management and its impact on clinical practice.

Summary: This SSC helped the participating students gain key skills, complementing the outcomes described in the ‘Tomorrow’s Doctors’ document (UK General Medical Council). Their awareness of Patient Safety in all areas of clinical practice was improved, and their abilities in inter-professional teamwork were enhanced. They also gained a greater understanding of the importance of research in the clinical environment and an understanding of how to link Quality Improvement to such research.

Introduction

Patient safety is critically important in modern medical practice and therefore should be an essential element of the undergraduate medical curriculum. Students tend to focus on individual patient problems as opposed to the wider healthcare system. It is important for them to understand the links between scientific principles and improving the quality of their patient’s care: “Safety and quality need to be integrated into the undergraduate medical school curriculum at the contextual level” [1].

Background

Due to the extensive 'Student Selected Component' (SSC) programme available at Dundee Medical School (UK), an opportunity arose for eight final year students to create their own four week long patient safety SSC. Although the 2009 edition of 'Tomorrow's Doctors' (General Medical Council, UK) has recommended the reduction of SSC allocated time to a minimum of 10% of the curriculum [2] compared to 30% in 2003 [3], the students felt that having the freedom to select areas of further interest complements the core curriculum and allowed them to achieve higher-level competencies such as critical thinking [4]. They were able to build upon their basic knowledge and investigate potential careers in further depth. This is particularly relevant considering the reduced time they now have to select a specialty training position; an argument supported in a study undertaken by 'Skills for Health' as part of consultation on the draft of 'Tomorrow's Doctors' 2009 [5].

Research is an important aspect of any doctor's career and it has been argued that for up to 90% of students SSCs are the only place where they can develop these skills [6]. SSCs compose approximately 25% of the Dundee curriculum, spread across all five years, with a total of 16 weeks of the final year devoted to SSCs. Eight of these weeks allow the student to spend extra time in clinical specialties of interest to them, and the other eight are "Theme" SSCs, where the student chooses a theoretical area they would like to study in greater depth. Unlike at some medical schools where subjects such as languages and art may be studied [7], the scope of these SSCs is always clinically relevant, but ranges from complementary therapy to pathology to prescribing skills. It was under the auspices of a Theme SSC that the students developed the 'Patient Safety' SSC; however, it is planned that its components will be integrated into the core curriculum in the future.

The move towards integrating patient safety into all years of the undergraduate curriculum stems from the 2009 publication by the World Health Organisation (WHO), 'Patient Safety Curriculum Guide for Medical Schools'. Since the Harvard study in 1991 [8], which first described the extent of patient harm, there has been worldwide evidence which clearly shows that hospitalised patients have about a 10% risk of suffering an adverse event while under the care of health professionals [9, 10, 11]. A major consequence of this knowledge has been the development of patient safety as a specialised discipline. As future clinicians, there is a fundamental need to educate medical students about how systems can impact on the quality and safety of the health care they provide, how poor communication can lead to adverse events and how human factors cause errors to occur. Students need to learn from the outset, how to identify these problems and understand how to best approach the challenges of implementing a change in culture, which leads to an improvement in patient care.

Thanks to the support of the SSC supervisor and the enthusiasm of the students involved, this new SSC was almost wholly student-led. Therefore, the students were able to address a variety of issues in the field of patient safety that they felt would be relevant to their practice as junior doctors. The 'Tomorrow's Doctors' document (General Medical Council, UK) recommends that

students take responsibility for self-directed learning [12]; this SSC gave them ample opportunity to fulfil this requirement.

Some students had previously worked with the Institute for Healthcare Improvement (IHI) and developed a Dundee Open School Chapter; a group of Inter-Professional Education students working together to improve healthcare. This group of students were the driving force in creating this SSC. IHI is an American non-profit organisation which works with health professionals throughout the world to accelerate the measurable and continual progress of healthcare systems using the following six improvement aims: Safety, Effectiveness, Patient-Centeredness, Timeliness, Efficiency and Equity [13]. The IHI resources contain freely accessible courses which teach the user about quality improvement, patient safety and leadership. The students felt that the IHI resources would provide an ideal framework from which to launch their own patient safety improvement projects.

Full consideration was given to the ethics of this research; after correspondence with the University of Dundee and the local National Health Service (NHS) Trust Research Ethics Committee, it was judged that ethical approval was unnecessary as the study should be classed as a course for medical student training and local service improvement.

Projects

Oxygen Prescribing

A major improvement project the students worked on during this SSC was an audit of oxygen prescribing on a respiratory ward. Implementing a change in culture takes time, but the process can be accelerated using the PDSA (Plan, Do, Study, Act) cycle approach to auditing. This allows an idea or observation to be identified then an action plan to be set in motion with specific aims. In the "doing" phase, the evidence generated is studied in order to create an action, procedure, or change in practice. This completes the cycle, but as with any audit scheme the cycle is continuous and the "act" must be appraised to determine if it has had the desired impact. The students recorded data for the following five questions (yes or no):

- Has oxygen been prescribed?
- Is an oxygen target saturation level stated?
- Is it indicated as PRN therapy or continuous therapy?
- Has the prescription been signed?
- Has oxygen been signed for in every drug round since original prescription?

After recording data for fourteen consecutive days, the students implemented their improvement in the form of a poster sent via email to all consultants, nurses and junior doctors working on the respiratory ward. They collected data for four days after the intervention to establish its effectiveness. The fact that they staged an intervention is different from most student audit projects where data gathering and analysis is typically the primary concern. The use of the PDSA cycle meant that a real improvement was implemented over a short space of time. In addition, the method of gathering data was novel as the students used the "Pocket Interview Programme" developed by Dundee Computing School [14]. This enabled them to create a

user friendly questionnaire which they completed on Personal Digital Assistant (PDA). The data was automatically uploaded to Microsoft Excel® to create instant run charts.

The key to all 'improvement projects' is sustainability and reliability. For this to succeed it is imperative that the service providers on the ward integrate the measuring of effective oxygen prescribing into their daily routine. Only at this point will oxygen prescribing become reliable for every patient, every time.

Clinical Skills Packs & PDAs

The students continued using the PDAs in a more directly educational manner. Previous students from medical and computing departments had created a venepuncture revision programme for students to use on the wards to give them reminders of the theory and practice of carrying out the procedure. Currently the clinical skills department has similar packs for other practical procedures such as Arterial Blood Gases (ABG) and venous cannulation. These packs are available online and as paper documents, but were due to undergo an overhaul. Each student was allocated a pack, and then rewrote it to fit in with what students would find most useful, and in a way that could be easily transferred to a PDA for revision purposes. This task not only allowed the students time to revise the procedures they were investigating, but also having the opportunity to critically appraise the information, then create their own learning tools, was a unique experience. Again, this project contributed to the students' role as future teachers; if future students are using mobile learning devices on the wards, current students will have a better awareness of what the programmes contain and how best to teach their students in conjunction with the resources they have. Pioneering these mobile learning and information-gathering devices also gives the students a head-start, if and when, they come into use in the UK NHS.

Inter-professional Education

The work on developing clinical skills packs also leads on to work the students did to advance inter-professional education (IPE). They met with students and lecturers from the School of Nursing and learnt about their use of the PDA devices in the area of hand washing. When developing the clinical skills packs, the students aimed to make them as generic as possible, allowing for a broad target audience, including nurses undergoing further training and other allied health professionals.

They also established a cross-curriculum 'Patient Safety Workshop' with second and third years from the School of Nursing. The students discussed issues surrounding an incident detailed in a WHO video, where a patient was inadvertently administered intrathecal vincristine. Having both a nursing and medical perspective on the individual and systemic failings leading to the error, led to a lively discussion about more generic patient safety issues. They discussed ways in which they felt doctors and nurses could work more efficiently together, and the challenges faced by both groups. A clinician must act as a partner to their colleagues, accepting shared responsibility for the service their patients receive.

With the establishment of a new Nursing School curriculum, the students hope to develop more opportunities for inter-professional learning in the near future.

Website

The students created an IHI Open School Dundee Chapter website which has made it possible to link the different aspects of the SSC and provide a platform in which patient safety issues, quality improvement projects and inter professional education can be discussed. It can be found at <http://www.ihidundee.org.uk/>. The aim of the website was to collate the work from the SSC, provide a bank of improvement projects for future students and to pique the interest of undergraduates from across the healthcare system. The website ensures that the students are able to maintain the extensive contact network they generated as a result of the SSC and will enable working relationships between different departments, with an interest in patient safety, to flourish.

Management

One of the few pre-organised components of the SSC was attendance at the weekly meetings of the NHS Tayside Modernisation and Development Team. This gave the students a rare insight into the managerial aspects of the NHS and how managerial decisions affect clinical practice. They were also able to discuss our own experiences of working in the healthcare system. The students' comments were well-received and will hopefully have a positive influence on future relations between managerial staff, students and junior doctors. It is rare that students have a chance to discover how health boards work at a managerial level, and perhaps this is something that could be integrated into the curriculum in years to come.

Summary

This SSC has been invaluable in developing many key skills which complement the outcomes documented in the 'Tomorrow's Doctors' document (General Medical Council, UK). It has enhanced the students' understanding of the roles and responsibilities of others, through the IPE sessions and has improved their ability to work in a multi professional team. It has highlighted the importance of understanding and gaining experience in the principles and methods of patient safety and quality improvement, including audit and incident reporting. The students have a greater appreciation of PDSA cycles and by implementing this approach to collected data, change can be quickly generated in a clinical environment to improve practice. By attending a number of managerial sessions they also have a clearer understanding of the framework in which medicine is practised in the UK in particular the structures, functions and priorities of the NHS and the impact this will have on them when they are junior doctors. The student led approach to this SSC gave them the opportunity to be in charge of their own learning, work towards their own objectives and take responsibility for their continual professional development.

As the pioneers of the SSC, the students have built up a large network of contacts so that future students will find it easier to locate relevant projects they wish to undertake, without removing the student-led aspect of the module. They have investigated ways to improve patient safety, and it can be argued that the introduction of a patient safety module into the general curriculum can only be a good thing. Patient safety is everyone's responsibility, but medical students are amongst the future leaders of health care, therefore it is vital that they are knowledgeable and skilful in the application of patient safety

principles and concepts. The safety of patients is paramount and requires dedication to continuing improvement, both in a doctor's individual practice and within their organisation and work environment. If a student's awareness of patient safety issues is heightened, they may be more likely to undertake safety and improvement projects in their future studies and work, benefiting both patients and NHS employees.

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