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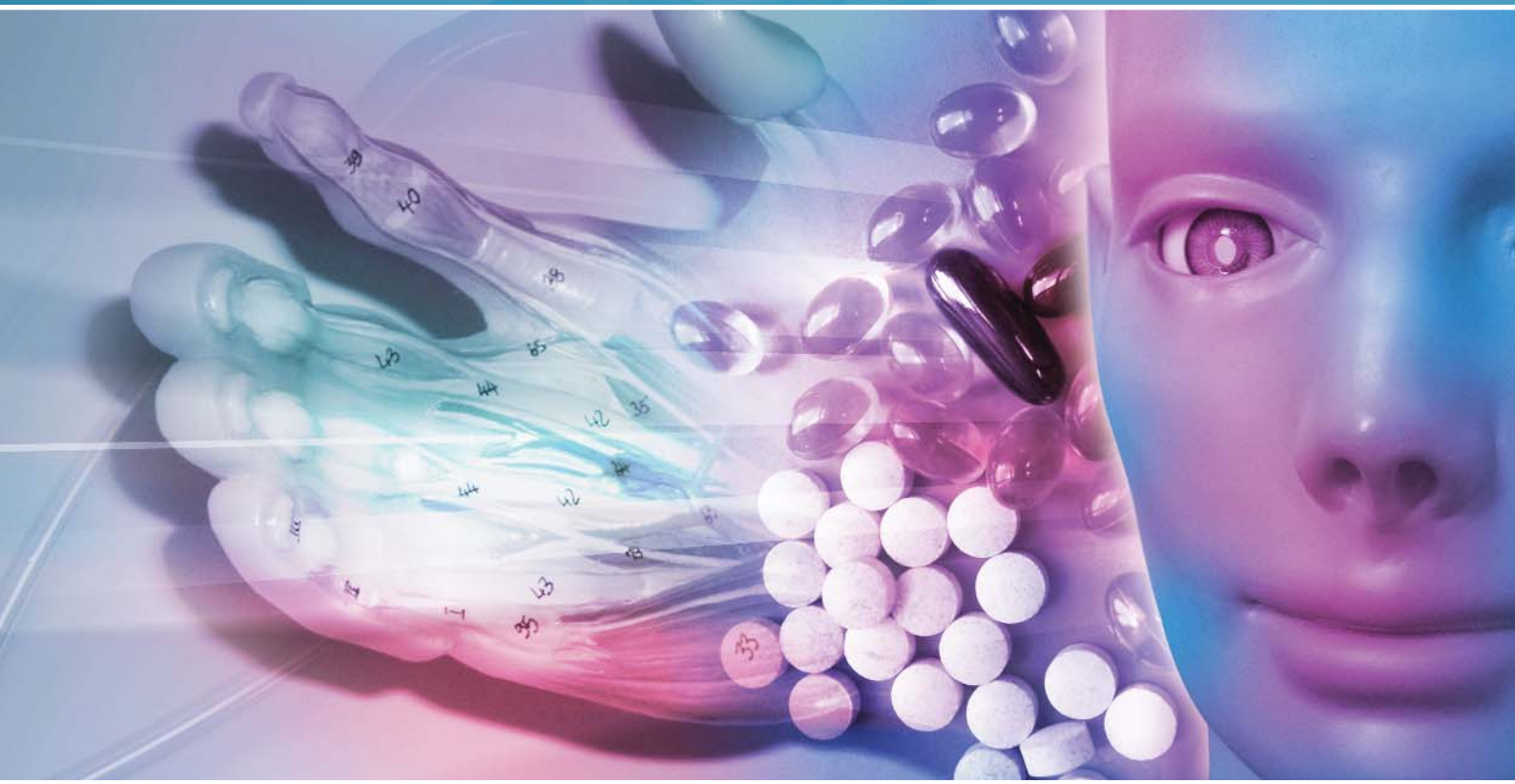

A Peer Reviewed International Journal for the Advancement of Clinical Skills
– 'docendo ac discendo' – 'by teaching and learning'

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

IJOCS

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Acknowledgements

I would like to take this opportunity to show appreciation to all those involved with the production of the International Journal of Clinical Skills. This has been a time consuming task but every minute of it has been worth it!

Special thanks goes to all members of the Editorial and Executive Boards, Nathaniel Coleman, Ziarat Khan, Federico Iannaci, Humayun Uddin, Vikram Raju, Amjad Anwar, Michael Todd, Mohammed Faraaz, all members of Amersham Vale GP practice, the 'Anderson' family, and last but not least the 'Ayub' family – all of whom have been extremely patient in the production of this ever lasting legacy. And not forgetting Kameron – it wouldn't have happened without you.

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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.

Contents

Editorial Board for the International Journal of Clinical Skills

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

Disclaimer & Information

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

Reducing errors in laboratory test requests

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KEYWORDS:
Laboratory test request
Errors
Medical student

Abstract

Errors in laboratory test requests can lead to adverse consequences for patients. There is increasing evidence that integrating safety concepts early in the curriculum is beneficial. This paper describes the development of an integrated skills programme using simulation which reduced errors in laboratory requests by medical students.

All second year medical students, as part of their clinical skills core programme, received training on laboratory test requesting. The training included both paper based laboratory requesting and laboratory test requesting using an electronic system. A convenient sample of students completed both paper and electronic laboratory test requests as part of the training session and again six weeks later and the error rates were compared. The number of errors in the electronic versions was reduced and the reduction maintained over time. Incorporating IT and paper based simulated exercises early in clinical learning may have a role in error reduction in laboratory requests and in other areas of clinical practice.

Introduction

Newly qualified doctors have been shown to be more error prone than experienced clinicians in relation to requests for laboratory tests[1]. Over the past 20 years there has been increasing understanding of how errors occur and how they can be categorised[2,3,4,5]. The challenge for educators is identifying when and how to address errors in laboratory requests in health professional education. There is evidence from safety experts which suggests that introducing the concept of system and human error should be integral to clinical learning from an early stage[6]. There is evidence that a change in the laboratory request form itself can reduce unwanted requests and tests[7].

Simulation has been shown to provide students with the opportunity to rehearse and reinforce cognitive, affective and procedural skills in a safe learner centred environment[8,9].

This paper describes how a training programme for junior medical students using the combination of a simulated electronic system, with paper based requesting reduced the rate of errors in laboratory requests and this reduction was maintained when tested six weeks later.

Background

Electronic test requesting has been introduced for 70% of blood tests in primary and secondary care in NHS Tayside in Scotland. As over 90% of medical students from the University of Dundee practice in the region following graduation, it is essential that they are familiar with, and can safely utilise the system.

Medical students learn how to request blood investigations as part of the integrated Practice of Medicine programme in the Clinical Skills Centre in Year 2.

Methodology

Context: The Practice of Medicine programme in year 2 in clinical skills incorporates learning

- how to perform venepuncture safely
- infection control issues around blood investigations
- how to gain consent from patients
- how to request blood investigations safely

Student group: This session was mandatory as part of the core programme for 160 second year medical students. The students were taught in sixteen groups of 10-12 students.

Design of study: All students were trained in paper laboratory requesting as part of this clinical skills session. In addition, they all underwent a 25 minute training session in electronic laboratory test requesting using a software package developed by Inpractice Systems (INPS) for NHS Tayside. It was programmed with simulated patient data including biographical details and history of previous tests. The training was delivered jointly by the NHS IT training team and clinical skills tutors. The students were able to choose one of four clinical patient scenarios developed for the exercise. A sample of four groups of students were asked to consider blood tests in relation to the patient scenario and to complete a paper laboratory request form prior

to the electronic test request form (T0).
Six weeks later (T1) two groups of students were presented with a similar clinical patient scenario and again asked either to complete an electronic laboratory investigation request or a paper request form.

Scoring: The paper and electronic test requests were analysed and scored based on the seven field items of the request form at T0 and T1. The items were: correct name, identification number, requesting clinician, consultant name, patient location, test requested and clinical information.

The paper requests were scrutinised by two reviewers independently, and each item was rated correct or incorrect. Incorrect was defined as incorrect, incomplete, illegible or inadequate for each of the items. The electronic requests were scored using the same process. The total number of errors in requested items was recorded and illustrated as a percentage of the total number of item requests.

Results

Scoring at T0 Paper requests
- 23.4% of items were incorrect in completed a paper laboratory investigation form.

Scoring at T0 Electronic requests
- 1.3% of items were incorrect in the completed electronic laboratory requests

Scoring at T1 Paper version
- 9.9% of items were incorrect in completed paper laboratory request forms

Scoring at T1 electronic version
- 0.7% of items were incorrect in the completed electronic laboratory requests

The percentage error rate for electronic requests and paper requests at T0 and T1 is illustrated in Figure 1.

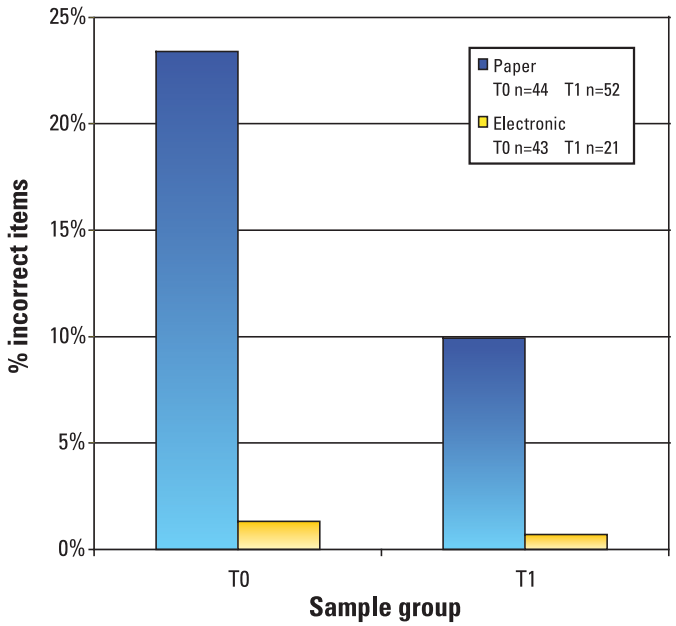

Fig 1 - Error rates in laboratory requests
Comparisons of errors at T0 and T1
- Electronic requests had 22% fewer errors than paper requests at T0.
- Electronic requests had 9.2% fewer errors than paper requests at T1.
- Both paper and electronic test requests had 13.5% and 0.6% fewer errors respectively at T1 compared to T0.

Discussion

This study demonstrated how the use of simulation in both paper and electronic formats can lead to error reduction in laboratory requests made by junior medical students, which was maintained at six weeks.

Access to the IT facilities restricted the number of electronic requests that could be done at the same time. The number of students participating in this study was perhaps a limitation, but in developing cultural change in organisations, the demonstration of small changes of improvement can contribute to increased patient safety[10].

Despite evidence that transfer from classroom to the real situation is enhanced using simulation[9] there has not been an opportunity to assess this within this study. Further studies should incorporate other cognitive elements of safe practice in procedural skills.

Conclusion

This study focussed on one aspect of patient investigation. Further studies should incorporate other cognitive and affective elements of safe testing by simulating the broader aspects of the process, i.e. ensuring correct identification of a patient for venepuncture, decision making about appropriate tests, correct labelling of the sample, and timely delivery to the laboratory to ensure maximum patient safety. The primary objective of a system designed for safety is to make it difficult for individuals to err (2). The electronic test requesting system has been designed with reinforcing strategies to reduce errors in requests. This means there are certain mandatory fields and prompts for users which contribute to error reduction using the electronic request system. Increased awareness of the mandatory fields in electronic requesting may be a contributing factor to the reduction in errors in paper tests at T1. A simulated realistic learning environment enabled students to reinforce and sustain these skills without harming patients[11]. ■

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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)*