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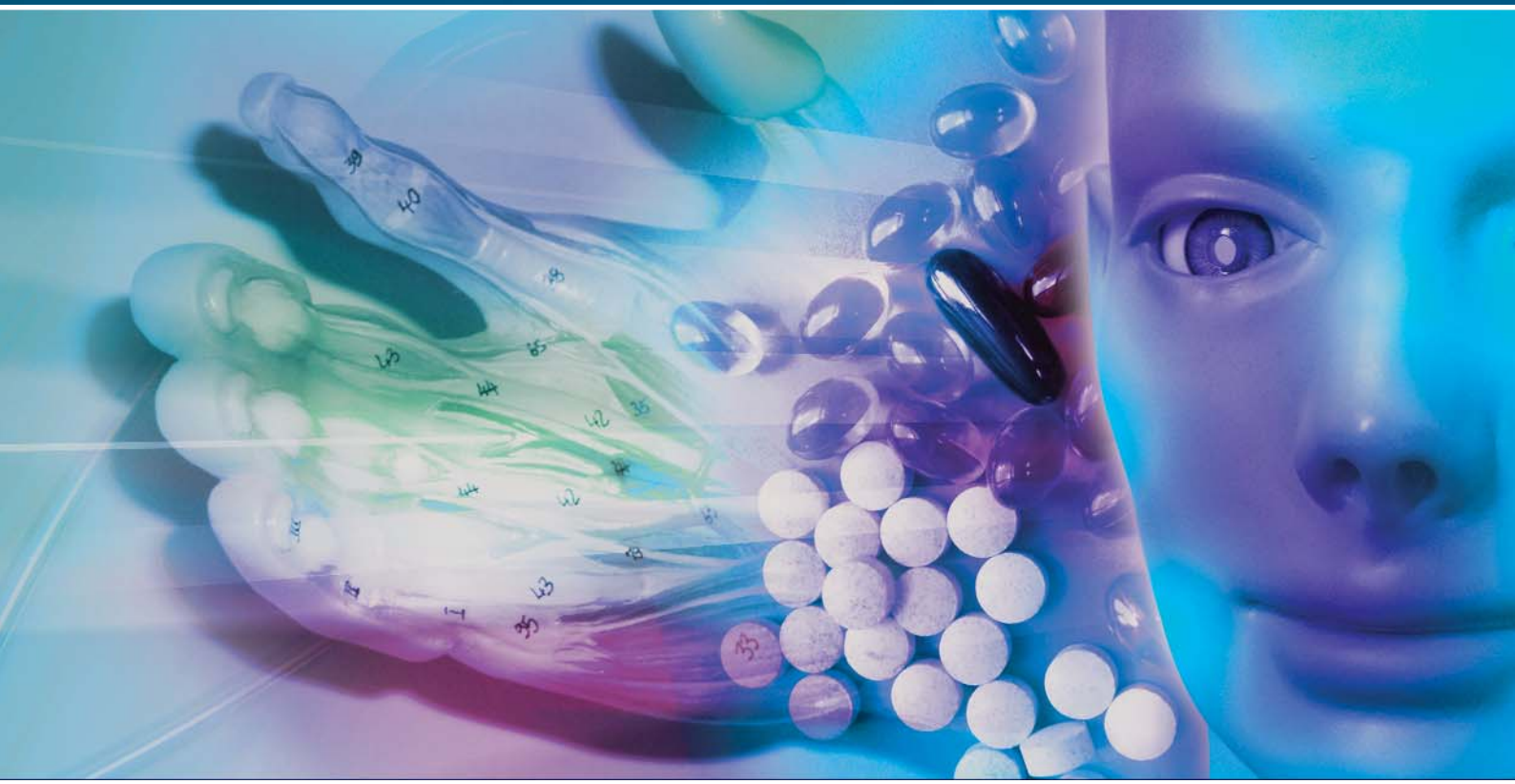

A Peer Reviewed International Journal for the Advancement of Clinical Skills
– 'docendo ac discendo' – 'by teaching and learning'

This issue:

Can we instinctively estimate vital signs?

Student-tutoring scheme – the blind leading the blind, or a useful tool?
Venepuncture – a necessity or 'reflex testing'?
Learning through simulation – taking control

IJOCS

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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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Editorial Board for the International Journal of Clinical Skills

Foreword

In line with our commitment to advance learning, knowledge and research worldwide in the clinical skills field, the launch issue of the International Journal of Clinical Skills (IJOCS) provided informative quality articles for the global healthcare arena. Integrating individual and collaborative clinical research makes the IJOCS success so huge.

The continued expansion of IJOCS is being mirrored by a programme of long-term commitment by our business partners, so that our continued pledge to the academic community and subscribers, can be fulfilled both now and into the foreseeable future.

Good healthcare professionals use both individual clinical expertise and the best available external evidence, and neither alone is enough. Without clinical expertise, practice risks becoming tyrannised by evidence, and without current best evidence, practice risks becoming rapidly out of date. This is where the IJOCS provides an invaluable tool to enhance patient care. Containing innovative research from a broad sweep of subject areas, IJOCS provides a groundbreaking stance in this educational field. The launch of the IJOCS remains a hot topic for clinicians, academics and students alike.

As well as the IJOCS, we now have the pending excitement of the Clinical Skills Lab (CSL). This is a free not-for profit database sponsored by the IJOCS. CSL has over 100 contributors, and it aims to publish information on clinical skills for the purposes of teaching and learning. This material will be available on a global scale via the internet, and will be an evolving database, encouraging contribution from the clinical skills community.

The IJOCS has proved to succeed in its original aim, which was aptly put by Professor The Lord McColl of Dulwich: '*…the International Journal of Clinical Skills 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…*'

I would like to express my gratitude to all of my colleagues, sponsors and subscribers, who continue to support this unique publication.

The International Journal of Clinical Skills – 'by teaching and by learning' – 'docendo ac discendo'

Dr Humayun Ayub
Editor-in-Chief
International Journal of Clinical Skills

Can we instinctively estimate vital signs?

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KEYWORDS:
pulse
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estimation
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observations

Abstract

Doctors, nurses and medical students were asked to evaluate a range of pulse and respiratory rates on a simulator without access to a timing device. All groups were equally and dangerously bad at performing this estimation, which has implications for NHS trusts intending to ban the use of wristwatches.

Introduction/Background

Many healthcare professionals report anecdotally that they can instinctively tell normal pulse and respiratory rates from abnormal without formally timing their observations. In practice, clinical observations are usually performed for us by a machine, and many doctors and nurses will confirm these observations clinically only if they are abnormal or unexpected.

The aim of this study was to evaluate whether doctors, nurses and medical students were able to accurately assess pulse and respiratory rate without the use of a clock or watch with a second hand.

The study allows for comparison between these three groups to see if the ability to estimate pulses improves with experience.

Methods

Nine penultimate or final year medical students, six junior doctors, one consultant and four trained nurses were asked to evaluate heart rate (pulse) and respiratory rate without access to a watch or other timing device. The tests were performed using the Laerdal SimMan® simulated patient.[1] Each participant was assessed at regular pulse rates of 83, 36 and 168 beats per minute and respiratory rates of 14, 30 and 4 breaths per minute. These values were selected as being representative of normal and potentially life threatening situations. Participants were given as much time as they wanted to make their estimate. All participants gave permission for their anonymous results to be published

For analysis, the participants were divided into three groups: Doctors, Nurses and Students. Analysis was performed using Microsoft Excel.

Results

Every participant took longer than one minute to make each estimate. Two participants stated that a regular pulse was irregular.

The mean estimates recorded by each group and their standard deviations are shown in figure 1 and figure 2 for pulse and respiratory rate respectively.

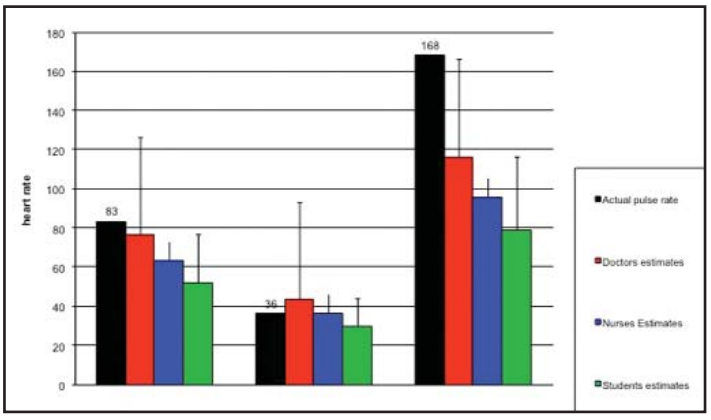

Figure 1: Estimates of pulse rates performed by doctors, nurses and medical students without the use of a timing device.

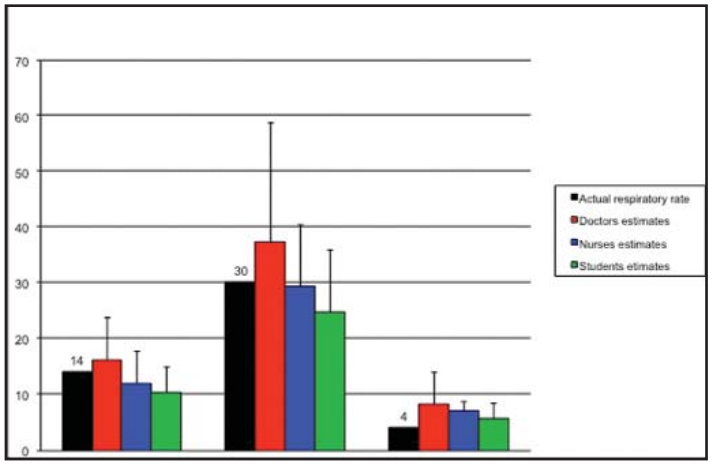

Figure 2: Estimates of respiratory rates performed by doctors, nurses and medical students without the use of a timing device.

Although there was a tendency for doctors to make higher estimates than nurses, who in turn made higher estimates than medical students, there were no significant differences between the estimates of the three groups.

No individual estimated all of the pulses to within 10 beats per minute, so all participants would have failed an undergraduate objective structured clinical examination (OSCE) station. Only one participant gave values for each reading that were not regarded by the authors as potentially dangerous in a clinical setting. Estimates for a pulse rate of 83 ranged from 60 to 120, and estimates for a respiratory rate of 14 ranged from 10 to 28, showing that it was often not possible for health care professionals even to distinguish normal from abnormal without the use of a second hand. As can be seen in figures 1 and 2, estimates for the brady- and tachycardias, as well as brady- and tachypnoeas are even less accurate.

Discussion

Even experienced doctors and nurses are unable to accurately assess regular pulse and respiratory rates without the use of a clock or a watch. Estimates are less accurate for severe brady- or tachycardias, and brady- or tachypnoeas. An irregular rhythm such as that of atrial fibrillation is likely to be even harder to estimate. This study highlights the necessity for doctors to have sight of a second hand when assessing patients, especially in emergency situations where a clock might not be present.

With NHS Trusts about to introduce a dress code policy of "bare below the elbows" based on department of health guidelines[2], which will include the banning of wristwatches this gives some cause for thought, as most hospital beds are out of sight of a clock.

Fob watches have been found to be impractical for some clinical procedures.[3] If trusts persist with the banning of wristwatches, they should consider providing each bed space with its own clock. This has expense implications, and could be irritating to patients. Although it has been suggested that wristwatches impair handwashing[4], this has never been shown, nor have wristwatches been shown to be carriers of infection.

Conclusions

Although infection control is of paramount importance to all healthcare professionals, consideration should be given to the potential clinical value of a second hand, and changes to watch wearing practise should be made with this in mind. ■

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References

1. http://www.laerdal.com/document.asp?docid=1022609
2. Jacob, G, Dept of health guidelines (2007) http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_078433
3. Nevill M, Ikeda M. Watch out for infection control. British Journal of Infection Control. 2006; **7**(1): 12
4. Hartley JC, Mackay AD, Scott GM. Wrist watches must be removed before washing hands. BMJ. 1999; **318**: 328

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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 a free not for profit database. Visit **www.ijocs.org** for access