Making multiple uses of resources: Teaching cardiac rhythms recognition with Laerdal SimMan

Guillaume Alinier[1], Colin Harwood[2], Pat Harwood[3]
Hertfordshire Intensive Care & Emergency Simulation Centre
University of Hertfordshire, UK

Background and Goal

Financial constraints and limited resources sometimes oblige us to use our creative side. Recognition of basic cardiac rhythms is taught to a large number of students from several healthcare disciplines. Growing numbers of students' intakes in the different programmes stretches the resources. The impact can not always be predicted as the equipment demand often depends on timetabling issues. Although ECG rhythm simulators might not be used on a very regular basis, there are times in the year when it is required by several groups at the same time. To resolve the problem, this year, we have used our simulation centre with SimMan as an ECG rhythm simulator.

Picture 2: Colleague teaching a group of nurses about ECG rhythms using SimMan and a data projector.

Material and Methods

To use the Laerdal SimMan patient monitor as an ECG rhythm simulator all the equipment required to operate SimMan is needed as well as a data projector with a zoom function and a VGA extension lead. All the SimMan equipment and the computer operating it can be set up on one side of the room as long as it can still be operated using the "cardiac" remote control. The computer needs to be set to allow the ECG to be displayed on the patient monitor. All the other parameter can be "cleared" from the monitor and the ECG signal and heart rate moved to the centre of the screen (Picture 1). This new setup can be saved on the patient monitor for future use. The VGA output at the back of the patient monitor needs to be connected to a data projector using a long VGA extension lead.

Results and Discussion

This setup enables to display the video of the patient monitor onto a large projection screen or whiteboard so it can clearly be viewed by all the students present in the classroom (Picture 2). The zoom function of the data projector can used to enlarge the size of the ECG signal displayed on the projection screen. The freeze function of the data projector can be very useful in conjunction to the white board to label intervals or segments on a static ECG. The lecturer can change the ECG rhythm and rate using the "cardiac" remote control as would be done using most ECG simulators. We believe that for that purpose the best place for the ECG signal is at the bottom of the patient monitor with the heart rate displayed just below it. One of our experienced biosciences lecturers who has now regularly used that setup reported finding it very user friendly and clear.

Picture 1: Laerdal SimMan patient monitor with ECG signal and pulse rate repositioned and its VGA output connected to a data projector.

Conclusion

The setup explained above works as well as a purpose made ECG rhythm simulator but has the disadvantage to be less mobile because it is attached to the full size patient simulator. Although it would be very cost ineffective to purchase a full scale patient simulator to primarily use it as an ECG rhythm simulator, it has the potential to save a thousand pound on the purchase of such a teaching tool if it is not required too often for that purpose.

Authors:

[1] Guillaume Alinier
MPhys, PGCE, MInstP, CPhys
HICESC Co-ordinator

[2] Colin Harwood, BA, DipNEd, DipAdEd, RMN, SRN, ILTM
Principal Lecturer
School of Paramedic Sciences, Physiotherapy & Radiography

[3] Pat Harwood, BA, BSc, MSc, RN, RSCN, DNE, RNT, ILTM
Senior Lecturer
School of Nursing & Midwifery

Correspondence:

Guillaume Alinier
HICESC
Faculty of Health & Human Sciences
University of Hertfordshire
College Lane, Hatfield, HERTS, AL10 9AB, UK.

Email: G.Alinier@herts.ac.uk
www.health.herts.ac.uk/hicesc
Tel: +44 (0)1707 286395
Fax: +44 (0)1707 284199

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