

Sim on a shoestring

INTRODUCTION

Good quality simulation training in emergency medicine benefits not only individual trainees but multidisciplinary teams and entire departments, hospitals and regional networks. There is a growing body of evidence showing that while actual clinical outcome improvements afforded by simulation training are hard to prove, this approach does lead to significant improvements in non-technical skills, such as team working and communication, that have been shown to influence patient outcomes, particularly in high stress and acute settings.¹

The use of purpose built simulation suites allows high volume, high fidelity immersive scenario training which can be planned and timetabled. Using high fidelity mannequins and creating a realistic clinical environment helps to minimise direct interaction with the sim facilitator, avoiding the “what am I hearing?” question, which disrupts the suspension of disbelief required for good quality simulation training. However, using these facilities may come at significant financial cost and is rarely suitable for ad hoc training opportunities. This article provides some tips on running low cost high educational value simulation training in your departments.

All simulation scenarios should endeavour to take the participants into ‘the zone’ where they are sufficiently immersed in the experience to act, think and behave as they would in the workplace.² This can be achieved through ensuring the environment, equipment and personnel are as close to ‘real life’ as possible, with a realistic level of stress for psychological fidelity. Where better to run regular emergency department simulation training sessions, than on the shop floor in your emergency department?

EMERGENCY DEPARTMENT IN SITU SIM

Emergency department in situ simulation is a low cost way of providing multidisciplinary training which can also provide a useful clinical governance tool. It is a high fidelity environment but can use low fidelity simple mannequins which are relatively cheap, robust and rapid to set up and clear away. By simulating recent actual emergency department cases, it is possible to use anonymised radiology images/ambulance sheets/EKGs, etc, to enhance realism. Multidisciplinary teams

are able to train in their local environment and test local pathways and procedures. Emergency department cases, which in hindsight may have been managed suboptimally, can be *run again* to encourage team based reflective practice.

In situ sim can also clarify previously unrecognised difficulties (with equipment, personnel, environment or local clinical pathways) both in the resus room and beyond in other critical care areas, such as CT, theatres, interventional radiology, etc. Potential solutions are often identified during the debrief, and can be tested safely through future emergency department simulation training.

Apps available through smartphone and tablet technology can be used to support and enhance the delivery of low cost high fidelity simulation within the emergency department. At the Royal Cornwall Hospital, we have found the following apps useful although there are many more being developed daily. We have used Apple products (iPad and iPhone/iTouch) but android apps are also available.

SimMon is a simulated monitor which replicates a standard screen from most emergency department resus rooms. It is displayed on an iPad, and parameters can be adjusted easily from another iPad or iPhone/iTouch, linked via wifi or bluetooth. Cost: £10.

AirBeam is a video transmission app, allowing live video feed to be sent to a remote audience. Video can be recorded for playback at debrief (although it does not have the facility to mark segments of interest during the scenario). This enables higher numbers of participants to benefit without crowding the resus room with an audience. Local wifi connectivity is required with a good bandwidth (you may need to discuss this with your local IT department). Cost: free.

Genius PDF converts pictures from a camera phone to PDF format which can then be easily emailed. It is a great app which makes collating anonymised paper records (EKGs, ambulance sheets, blood results, etc) easy and able to save with scenarios which can be printed as a pack when needed. It is also possible to minimise sim facilitator interaction by using a wireless printer to produce EKGs, blood results, etc, from a smartphone/tablet. Cost: free.

Simple mannequins should have a realistic size/weight, be robust and readily available for rapid start/stop simulation

training. Consider your departmental need for features such as allowing tracheal intubation to take place. Some scenarios may work better with medical students (or other volunteers, willing or otherwise) acting the part of the patient to enhance realism, such as combative patient with suspected C spine injury.

HOW TO MAKE IT WORK

Although cheap to run, in situ sim require planning and communication to be effective. You will need to have a *plan B* for when your department is too busy to safely run a simulation—an alternative venue (eg, decontamination room or seminar room nearby) can be invaluable for this. Providing nearby patients/relatives with a brief information sheet about what to expect in the bay next door saves causing unnecessary upset, and the responses received so far in our unit have been uniformly positive. Using simulation training to feed to and from local clinical governance programmes has encouraged *buy in* and enhances the benefit to the department and wider trust.

Making regular multidisciplinary simulation training part of the emergency department culture takes time, patience, good humour and a lot of perseverance! Involving nursing and inpatient specialty sim champions goes a long way towards achieving this. Your multidisciplinary emergency department sim faculty should reflect the participants—this is essential for effective debrief and to ensure roles are realistic (avoid participants *being* the nurse or ITU consultant). Engage inpatient teams—this has been especially useful in trauma team simulations but requires strict adherence to start/finish times to maintain regular attendance from all specialities.

We have found that identifying two sorts of sim are useful. We run a 1 hour critical illness and a 1 hour trauma simulation each month. We also hold a 15 minute daily sim from 08:15 to 08:30 to capture the leaving night team following handover, and cover a single team skill (eg, ‘kit off procedure’ for trauma case reception). These are rapid set up/clear away scenarios in the resus room, including a 3–5 minute debrief. They do not always happen and require significant buy in from clinical staff, but have now become part of our departmental culture.

Having a low cost emergency department simulation programme does not negate the absolute requirement for high quality debriefing, so it is essential to invest in training for your multidisciplinary emergency department sim faculty. The College of Emergency Medicine's simulation faculty course is highly

recommended and is available at a number of centres across the UK.

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References

1. Okuda Y, Bryson EO, DeMaria Jr S, *et al.* The utility of simulation in medical education: what is the evidence? *Mt Sinai J Med* 2009;76:330-43.
2. Bredmose PF, Habig K, Davies G, *et al.* Scenario based outdoor simulation in pre-hospital trauma care using a simple mannequin model. *Scand J Trauma Resusc Emerg Med* 2010;18:13.

Consultant appointments January 2014

The information for the consultant appointments is provided by the College and any errors should be notified to them and not the journal

Name	Hospital	Date appointed	Previous post
Alastair Jones	Peterborough and Stamford Hospitals NHS Foundation Trust	February 2013	STR
Julian Garside	Peterborough and Stamford Hospitals NHS Foundation Trust	February 2013	Staff grade
Thomas Blyth	The Shrewsbury and Telford Hospital NHS Trust	March 2013	STR
Helen Keeton	University Hospital Southampton NHS Foundation Trust	February 2013	STR
Annette Rickard	Plymouth Hospitals NHS Trust	May 2013	Consultant
Tim Nutbeam	Plymouth Hospitals NHS Trust	May 2013	STR
Louisa Mitchell	Plymouth Hospitals NHS Trust	May 2013	Locum consultant
Matthew May	Plymouth Hospitals NHS Trust	May 2013	STR
Roderick Campbell	Plymouth Hospitals NHS Trust	May 2013	—
Robert Darren Reid	Defence Medical Services	June 2013	Consultant
Matthew David Boylan	Defence Medical Services	June 2013	STR
Jon Walker	Defence Medical Services	June 2013	STR
Mohit Arora	Leeds Teaching Hospitals NHS Trust	April 2013	STR
Alistair Rennie	Central Manchester University Hospitals NHS Foundation Trust	May 2013	STR
Lisa MacKenzie	Central Manchester University Hospitals NHS Foundation Trust	May 2013	STR
Emma Farrow	North Cumbria University Hospitals NHS Trust	May 2013	—
Geraint Evans	Hywel Dda Health Board	June 2013	Consultant
Witold Liskiewicz	Hywel Dda Health Board	June 2013	—
Sherif Hemaya	Sheffield Teaching Hospitals NHS Foundation Trust	July 2013	Consultant
Hasan Qayyum	Sheffield Teaching Hospitals NHS Foundation Trust	July 2013	Locum consultant
Thomas Mitchell	Gloucestershire Hospitals NHS Foundation Trust	May 2013	SPR
John Joseph McInerney	Jersey Health and Social Services Department	May 2013	Consultant
Sarah Horne	Croydon Health Services NHS Trust	April 2013	Consultant
Laura Balica	The North West London Hospitals NHS Trust	May 2013	Locum consultant
Tamer Sharaf	The North West London Hospitals NHS Trust	May 2013	STR
Shafi Khan	Mid Yorkshire NHS Trust	July 2013	STR
Andrew Pountney	Mid Yorkshire NHS Trust	July 2013	Consultant
Rosie Furse	Royal United Hospital Bath NHS Trust	June 2013	Consultant
Chris Peter	Royal United Hospital Bath NHS Trust	June 2013	STR
Teresa Bentley	Royal United Hospital Bath NHS Trust	June 2013	Consultant
Raluca Ciornei	South Tyneside Foundation Hospital	June 2013	Consultant
Mir Saaduddin Ahmad	Barking, Havering and Redbridge University Hospitals NHS Trust	June 2013	Consultant
Atif Latif	Great Western Hospitals NHS Foundation Trust	June 2013	STR
Dimitrios Kontogeorgis	Royal Berkshire NHS Foundation Trust	July 2013	STR
Cliona Magee	Sandwell and West Birmingham Hospitals NHS Trust	July 2013	Consultant
Dilip Dacruz	Sandwell and West Birmingham Hospitals NHS Trust	July 2013	Consultant
Thomas Massey Odbert	Northampton General Hospital NHS Trust	June 2013	STR
Sarah Vince	Northampton General Hospital NHS Trust	June 2013	Consultant
Mike Pearce	Northampton General Hospital NHS Trust	June 2013	STR
Leesa Parkinson	Betsi Cadwaladr University Health Board	July 2013	STR
Helen Salter	Betsi Cadwaladr University Health Board	July 2013	Consultant
Thomas O'Driscoll	Betsi Cadwaladr University Health Board	July 2013	STR
Mark Witcomb	Western Sussex Hospitals NHS Trust	June 2013	—
Sarah Hall	Western Sussex Hospitals NHS Trust	June 2013	Consultant
Colin McDewar	Western Sussex Hospitals NHS Trust	June 2013	Consultant