

Clinical Simulation News

SPRING 2012

Welcome to the first edition of Clinical Simulation News!

Dear Colleagues,

Welcome to our first NHS South of England (Central) Clinical Simulation newsletter. We'll be sending it out quarterly, the content is very broad and hopefully has something for everyone.

Thank you to everyone that has contributed to this edition, we have been (almost) overwhelmed with the response to our call for articles. In fact Carl Read from Southampton sent so many useful tips that we've decided to make him a regular columnist with Carl's Column!

We are also featuring one of our current Clinical Simulation Fellows in each edition and this time I am delighted to introduce you all to Dr Andrew Vaughton from Dorset County Hospital.

We would really like to hear from you with any other ideas or articles for future editions or indeed feedback from this one!

Very best wishes,
Denise Greenspan
Clinical Simulation Lead

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Dates for your diary

19 - 20 June 2012

UK Simulation in Nursing Education Conference 2012
'International Simulation Standards: The Impact on Educators'
<http://www.hpsn.com/event/uk-simulation-in-nursing-education-conference-2012/87/>

6-8 November 2012

ASPIH Conference 2012
'Broadening Education Horizons: Translating Learning from a Simulated to a Work Environment'
<http://www.aspih.org.uk/conference>

29 November 2012

Fifth Annual Clinical Simulation Conference 2012
Venue to be confirmed

Tragic story hammers home patient safety at clinical simulation conference

This article was first published in exchange, the workforce development newsletter for NHS South of England (Central)

Improving patient safety through embedding simulation training in organisations across NHS South of England (Central) was the key theme of the region's fourth annual Clinical Simulation Training Conference in November 2011.



The importance of this principle was hammered home by Claire Bowen who told the story of how her daughter Bethany died aged five, during what should have been a straightforward operation to remove her spleen. Neither the trainee surgeon performing the operation, nor the supervising surgeon had had the manufacturer's recommended training for the piece of equipment that they had decided to use at the last minute.

This was South Central's fourth Clinical Simulation Training Conference and was attended by 80 clinicians and managers from across the region. The main purpose of the event was to showcase six projects which are being led by trust-based clinical simulation and patient safety fellows.

If you would like to contribute to future editions of this newsletter please contact Denise Greenspan at the following email address: denise.greenspan@oxforddeanery.nhs.uk.

The fellows are highly qualified clinicians recruited to develop clinical simulation education packages to address the issues raised from the five most frequently occurring serious untoward incidents, both regionally and nationally. The sixth project is a cost-benefit analysis on the use of simulation training to achieve high quality, safe care.

“Our strategy has been to improve patient safety through direct investment in clinical simulation training using patient safety fellows working in trusts,” said Denise Greenspan, Clinical Simulation Lead at the South Central Strategic Health Authority. “Delegates were keen to understand the learning from these projects and hear how we will be sharing and disseminating the findings.”

Key note speaker at the conference was Professor Sir Bruce Keogh, Medical Director NHS England, and local expert speakers were Debbie Rosenorn-Lanng, Consultant Anaesthetist and Director of Simulation, Royal Berkshire Hospital; Helen Higham, Director, OxStar Centre (Oxford Simulation, Teaching and Research) and Stuart Carney, Department of Health Senior Clinical Advisor, Medical Education and Training Programme and Chair of the DH Technology Enhanced Learning Committee.

For the past three years NHS South Central has been a leader in the development and implementation of a clinical simulation training strategy. Simulation training is a broad term that includes any educational experience that simulates reality. NHS South Central investment has included high fidelity equipment across all Trusts including mannequins that can exhibit symptoms such as the rapid deterioration of patients. Simulation centres can replicate an operating theatre, a bay on a ward, or even a GP surgery.

“Simulation is a training method that can help trainees and experienced clinicians become more competent with unfamiliar procedures or equipment more quickly,” said Denise. “For many clinical procedures it is now possible to gain skills for safe practice before working on a patient so we have better quality and safer patient care. Some professions, such as dentistry, have used simulation for a long time and trainees need to demonstrate competence on a “phantom head” before they practise on a patient. Student nurses and midwives can have up to 300 hours (almost 7% of their training) in a simulation environment and in medicine the changes arising from Modernising Medical Careers (MMC) have brought increased focus on the benefits of using simulation training.”

While NHS South Central has focused on developing and delivering a simulation strategy founded on improving patient safety, other SHA regions have focused on different aspects and Denise is currently working across England to share learning from NHS South of England (Central) and adopt initiatives from other areas. For example, the next step for all regions is to develop and adopt an education quality framework for simulation training such as the one that has been initiated by Yorkshire and Humber SHA.



Right: Bruce Keogh, Medical Director of the National Health Service in England

Clinical simulation extranet now online!

You can access the latest clinical simulation news and resources through our brand new extranet site.

This is a fantastic way to get up-to-date information on the newest developments in clinical simulation and to share your thoughts and ideas directly with us. On this site you will find:

- Reports and documents relating to research conducted by our fellows
- Presentations, resources and posters from our latest annual clinical simulation conference and details on how to register for next year's conference
- Forums where you can leave messages relating to clinical simulation for other professionals in the area
- Useful links to other sites of interest in clinical simulation

If you would like to contribute any material to the extranet site, please contact Denise Greenspan at the following email address:

Denise.Greenspan@oxforddeanery.nhs.uk

You can register for access at: <http://www.wessoxdeanery.nhs.uk/users/Account/Register>

New Clinical Simulation Fellows 2012

Dr Tania Davison

Buckinghamshire Healthcare NHS Trust



Assigned area of interest:
End of life care

The project will improve end of life care for children and their families. This will be achieved by using simulation, in the form of role play, to enhance the professionals' communication skills.

NHS South Central (England) has identified seven areas for improvement in the region and recruited seven highly qualified clinicians to develop clinical simulation education packages to address these areas. Our new Clinical Simulation Fellows started their projects earlier this year and are making excellent progress. Here is a guide to the individual projects being developed which will ultimately be used throughout the region and indeed the wider NHS.

Dr Karen Edwards

Oxford Radcliffe Hospitals NHS Trust



Assigned area of interest:
Medication Errors

This project aims to create a robust culture of safe sedation practise and ensure staff are trained to proficiently assess and provide pain relief and safe sedation to children in pain.

Ms Kirsty Harris

Portsmouth Hospitals NHS Trust



Assigned area of interest:
Improving patient outcomes in stroke care

This project is divided into two parts:
1) Improving Public Awareness, and
2) Increasing thrombolysis rates with multi-disciplinary simulation training - improving door to needle times.

Dr Andrew Vaughton

Dorset County Hospital NHS Foundation Trust



Assigned area of interest:
Improving patient outcomes in reducing deaths after surgery

This project is aimed at improving recognition and management of the high risk emergency surgical patient, thereby reducing morbidity and mortality in this group.

Dr Niamh Feely

Heatherwood and Wexham Park Hospitals NHS Foundation Trust



Assigned area of interest:
Mapping the Foundation Curriculum

Some areas of the Foundation curriculum cannot be easily mapped to individual clinical posts. This project is designed to identify these areas and deliver a bank of simulation resources to ensure comprehensive coverage of the curriculum.

Dr Prad Shanmugasundaram

Royal Berkshire NHS Foundation Trust



Assigned area of interest:
Anaesthetic curriculum mapping

This project is aimed at improving anaesthetic, intensive care and ACCS training by providing a resource library of standardised, curriculum-based scenarios that will be freely available to faculty delivering simulation training across the region.

Dr Helen Wilson

Southampton University Hospitals NHS Foundation Trust



Assigned area of interest:
Patient safety in neonatal care

This project will improve management of neonatal emergencies through creation and delivery of a standardised regional multi-professional simulation training programme thereby improving patient safety and the family experience of neonatal care.

Featured Fellow

Dorset County Hospital 
NHS Foundation Trust

By Andrew Vaughton, ST5 Anaesthetist at Dorset County Hospital and Clinical Simulation Fellow 2012

Day Surgery Simulation Training (ran in conjunction with Susie Baker, Consultant Anaesthetist, Dorset County Hospital)

Day Surgery Units provide ambulatory surgery to generally fit patients. Complications although rare are potentially devastating, so it is important that staff are able to respond appropriately and in a timely fashion to reduce morbidity and mortality. Integrating the use of live simulation and Sim Man 3G scenarios within the Day Surgical List provides increased exposure to these infrequent complications.

The Day Surgery Simulation training looked at exposing multi-disciplinary staff to adverse anaesthetic incidents. The simulation was run as a "normal" list involving 4 patients in the DSU. Staff were familiarised with SimMan 3G equipment before the list commenced. Local anaesthetic toxicity, Malignant Hyperpyrexia and Anaphylaxis scenarios were performed. Staff were expected to react in real time and use all necessary resources within the department, thus testing clinical, non clinical skills and highlighting latent threats within these processes.

Debriefing involved the whole team and the observing staff, any problems and solutions for change were noted. Each scenario was closed with a brief overview presentation highlighting the key learning points. Feedback was extremely positive. 94% of the attending staff indicated that the simulation was relevant, realistic and made them more aware of how to deal with such emergencies. 82% felt more confident about managing them as a team.

Integrating simulation scenarios within the Day Surgical environment is an innovative and highly effective educational tool, providing increased exposure to infrequent emergencies enabling the rehearsal of delivering high quality care. To our knowledge this multidisciplinary approach to day surgical theatre simulation training is unique.



Carl's Column

By Carl Read, SimCentre Manager at University Hospital Southampton

SimMan to checkout No. 4 please!

The sim room becomes a bit hectic sometimes and a number of the staff who control the software running simman / simbaby asked me for a way of ensuring that they are responding to any therapies given in the room.

I bought a USB bar code scanner from eBay for £25 and found that it would transfer whatever it was reading on a barcode straight into a word document, as though entered by a keyboard. I then discovered that the Smart label printer used in the department could print barcodes. I simply printed a load of barcodes with the names of drugs on and now the candidates are briefed to flash the barcode of the drug under the scanner head in the simroom when the manikin is given the drug. This information then pops up on a pc screen in our control room and we can make the manikin respond appropriately.



Focus On...

Sharing Good Practice

Sanjay Ramamoorthy and Lisa Morgan
Clinical Simulation Fellows 2011

Sanjay and Lisa presented at the 15th Ottawa Conference in Kuala Lumpur on 10-12 March 2012. Sanjay, a Consultant Anaesthetist at Southampton University Hospital, gave an oral presentation on his Fellowship project: The Rapidly Deteriorating Patient. Lisa, a Clinical Simulation and Resuscitation Tutor at Hampshire Hospitals, presented a poster on her project: A Cost-Benefit Analysis of Simulation Training.

What they learned

The Ottawa Conferences on the Assessment of Competence in Medicine and the Healthcare Professions were set up by Professor Ian Hart (Ottawa, Canada) and Professor Ronald Harden (Dundee, UK) in 1985. Held biennially, they provide a forum for medical and other healthcare professions educators to network and share ideas on all aspects of the assessment of competence in both clinical and non-clinical domains, throughout the continuum of education.

(Continued on page 5)

Clinical Simulation Fellowship Project: Simulation Training in Fetal Monitoring

Royal Berkshire NHS Foundation Trust



By Stathis Altanis, ST6/7 in Obstetrics and Gynaecology at Royal Berkshire Foundation Trust and Clinical Simulation Fellow 2011

Misinterpretation of the fetal heart rate in labour is one of the leading avoidable factors of substandard intrapartum care. Training in electronic fetal monitoring has been mainly didactic. Until last year the web-based training packages in fetal monitoring provided limited interaction and feedback.

This format of training was by no means replicating the dynamic and frequently demanding environment of a labour ward. Improving current training in fetal monitoring is essential. As there are different types of learners, it is logical to employ different types of training. Simulation training in other obstetric emergencies such as shoulder dystocia and postpartum haemorrhage has resulted in better management of these cases in clinical practice. Adding simulation training to the existing fetal monitoring training programme has the potential to produce similar results. The aim of the project was to improve recognition of pathological traces and reduce variation in the interpretation of intrapartum cardiotocographs (CTGs) by means of simulation.

Fifty-six midwives in groups of 4-6 attended eleven half day simulation sessions in fetal monitoring. The simulation training consisted of three clinical scenarios with pathological traces. The midwives did one scenario in pairs and observed the other two. The scenarios lasted for 10 minutes and they were followed by a 30 minute debriefing. The midwives were asked to interpret pathological traces before and after the training and complete a feedback form. The inter-rater agreement was assessed by calculating Kappa. A retrospective review of forty deliveries with pathological trace was employed in order to explore whether the training resulted in better interpretation of traces in clinical practice. Twenty deliveries had been conducted before the training and twenty after. We used a modified version of the Fetal Safety Failure to Rescue Process Tool for the review of the cases. We evaluated the quality of the traces and whether the interpretation was systematic, structured and accurate. The majority of the participants (80%) found the sessions extremely useful.

More midwives classified the traces as pathological after the training (see table).

The inter-rater agreement in decelerations was improved from poor (Kappa=0.13) to fair (Kappa=0.41). The inter-rater agreement in the classification of CTGs was improved from poor (Kappa=0.23) to good (Kappa=0.61). The score of the interpretation of CTGs in clinical practice increased from 0.6 before the training to 1.2 (p<0.05). The maximum possible score is 2.

Classified as pathological	Before training	After training
Trace 1	38%	79%
Trace 2	67%	88%
Trace 3	47%	73%

This project demonstrated that simulation training in fetal monitoring was a well received and effective way of improving interpretation of CTGs. It can augment the current training in fetal monitoring and if it is included in the regular mandatory training programme, it has the potential to increase the safety and quality of intrapartum care.

Overall Impressions

This was a truly international conference, although the UK, Canada, USA and Australia were heavily represented amongst the delegates and speakers. This year in total there were approximately 1200 delegates representing over 50 countries. Attendance at sessions required careful planning, as there were several simultaneous tracks. The conference centre was excellent, and made switching from room to room easy. The overall standard of the oral papers was average. There were one or two well planned studies, but most had major flaws. The same applied to most of the posters. There was a sense that the authors of many of the studies were far removed from clinical practice, which in turn meant that some of the concepts presented were difficult to translate to real life clinical practice. However, most of the plenary sessions, and in particular Brian Hodges, were outstanding.

Applications to Simulation

- To engage the unengaged with simulation activity is sometimes a challenge, but has been addressed through the use of technology based feedback systems. This is a process that has been trialled and is now well used within a long established simulation centre in the USA. It is a simple idea of using a checklist type assessment on an iPad by using specific software (or by becoming an accustomed user of Google forms), whereby the observers of the simulation activity would use the checklists to assess the participants, which would then form part of the debrief. This was a really interesting concept and actually needn't cost the earth to set up. It obviously has limitations as checklist approaches to assessment within simulation activity are not always appropriate.
- Using simulation for high stakes assessment is a well-documented concept that is proving to be difficult to implement. This workshop presented by a team of people from the south west of the UK proposed a system of assessment of non-technical skills. This was compared to the use of the checklist type approach which, it quickly became apparent, is not appropriate for the assessment of non technical skills in the simulated scenario.
- The issue of authentic assessment was debated by a simulation educator from Canada. A lot of the assessment practices that had been discussed were about 'scoring' people's performances and obtaining quantitative data. This workshop addressed the issue of what constitutes 'authentic assessment' and whether it is necessary to collect quantitative data. The presenter used examples from an in-situ (at point of care) simulation training package. It was argued that the authentic assessment of participants is made through qualitative data collection through facilitator observations and active observers. The authentic assessment is delivered through the debrief of the simulated scenario which must be consistent in structure. The structures of this debrief were discussed and examples were given.
- A further 12 presentations were attended whereby the argument for the use of checklist vs. qualitative assessment were continued through the use of simulation. Alongside this, components of authentic assessment were also discussed. The take-home message was to ensure the objectives of the session are clear as this will steer the assessment process to be used. Quantitative data collection in assessment is not always appropriate as non-technical skills are often assessed through simulation. Conversely, checklists are often useful when assessing the participants in algorithmic knowledge such as resuscitation.
- The final closing plenary of the conference by Professor Cees van der Vleuten (Maastricht University, Netherlands) further explored these issues and concluded that the qualitative assessment is now more widely used and accepted as authentic but needs further development.



Simulation Specialty Spot

Orthopaedics, Rheumatology and Musculoskeletal Sciences

Oxford Orthopaedic Simulation & Education Centre (OOSSEC)

Nuffield Orthopaedic Centre

By Claire Pumfrey, Education and Research PA to Mr Jonathon Rees, Nuffield Orthopaedic Centre

Visit from Sir David Nicholson, NHS Chief Executive

Sir David Nicholson, Chief Executive of the NHS, visited the Nuffield Orthopaedic Centre on 21 October, 2011, to meet staff and see the work of the specialist orthopaedic hospital.

Sir David spent an afternoon at the Oxford hospital where he was shown round ward areas and also the skills laboratory where orthopaedic trainees learn new surgical techniques. The skills laboratory has been fitted out with arthroscopy equipment and surgical simulators. Sir David was given a demonstration of keyhole surgery using one of the knee simulators before testing his own ability in arthroscopic skills!



Development of a virtual reality training platform for knee replacement surgery

We have developed a virtual learning platform for teaching the unicompartamental knee arthroplasty procedure. Pilot studies have demonstrated that this educational software is more effective than the traditional teaching methods with regards to improving the cognitive skills necessary for this procedure. We are now conducting sawbone studies to determine whether this software can also enhance the technical skills necessary for unicompartamental knee arthroplasty.

Swap Shop

If you have any simulation products or services that you are looking to sell or buy, why not advertise them in this newsletter?

Examples may include:

- Simulation equipment
- Simulation training courses
- Educational resources related to simulation

Please contact Denise Greenspan for further details at the following email address:

Denise.Greenspan@oxforddeanery.nhs.uk

Clinical Simulation Fellowship Opportunities for 2012

NHS South England (Central) is offering a number of Clinical Simulation Training Fellowships starting in September/October 2012 for up to six months. These Fellowships represent an exciting opportunity to influence the direction of clinical training and have a direct and measurable impact on improving training outcomes. All those working in the clinical arena can apply, whatever their professional background.

The closing date for applications is Friday 11 May, and interviews will be held on Tuesday 15 May (Oxford Deanery) and Thursday 31 May (Wessex Deanery).

For further information on this opportunity, please contact:

Denise Greenspan denise.greenspan@oxforddeanery.nhs.uk, tel: 01865 740 603, or
Liliane Johnston simulation.admin@oxforddeanery.nhs.uk .