



Welcome to the 16th edition of our Newsletter. Innovative practice in simulation continues to inspire us and we are pleased to report on some of the highlights so far this year.

My thanks go particularly to Dr. Ralph MacKinnon of Royal Manchester Children's Hospital for hosting and organising the National Inter-Professional Paediatric Simulation Symposium in February. As you will see from the article, this meeting featured a highly diverse range of prominent speakers across multiple paediatric care settings and in response to feedback from delegates, we will look forward to facilitating another meeting next year.

Stuart Cox et al from CEGA Air Ambulance have provided our leading story showing close collaboration between the medical and flight crews in simulation training. We are of course all familiar with the extensively referenced analogies between aviation and medicine and these insights are most welcome.

I would also like to thank Virginia Minichiello from Sandhills Community College, North Carolina for her contribution to this newsletter sharing with us her Nursing Programme's experiences in preparing first year nursing students for their clinical placements.

There are many interesting articles here for you to peruse. Please continue to share your experiences with us but in the meantime, we have a number of exciting events coming up, so please note the 'Dates for the Diary' on the back page and we will look forward to seeing you there!

Rosie Patterson
Managing Director
Laerdal Medical UK



The Safety Culture

Translating the Lessons from Aviation to Medicine

Stuart Cox, RN, BSC (Hons) - Senior Nurse, CEGA Air Ambulance, Bournemouth, Dorset
Dr Alistair Johnstone MBChB FRCA- ST6 Anaesthetics, Severn Deanery

On March 9th 2012, CEGA Air Ambulance brought together its medical and aviation crews for a simulation training day in a fixed wing air ambulance.

CEGA, which has a dedicated fleet of fixed wing air ambulances and carries out global repatriations 24 hours a day, 365 days a year, had conducted a literature review prior to the training day. This revealed that there was no documented evidence of simulation training programmes for multi-disciplinary fixed wing air ambulance crews - despite the fact that simulation training is mandatory for pilots at least 6 monthly, and that it can, according to reports by the Patient Safety First campaign (NPSA, 2008), develop a positive patient safety culture.

There is significant interest in translating the lessons learned from aviation into medical training. Professor Gaba, a doctor and a private pilot, has written articles discussing the analogies between education in medicine and the aviation industry. He believes lessons learnt from simulation training in the aviation industry can benefit patient safety by teaching consideration of human factors, such as decision making and teamwork in critical situations. Simulation training has been extensively validated as an education tool for medical crews (Boulet and Murray, 2010).

Training for CEGA Air Ambulance medical crews has previously been classroom or lecture based with additional, paperwork based, skills competency assessments. CEGA has always looked to enhance its aeromedical training for both medical and aviation crews outside this environment. With this commitment to improvement, a collaborative simulation training day was developed, based on the premise that simulation training is part of a pilot's mandatory competency, and should be extended to medical crews. The primary aims were to enhance patient safety by training in the air ambulance environment and to allow crews to develop their clinical experience, knowledge and skills through multidisciplinary working between aviation and medical crews.

The day was developed by Dr Johnstone and RN Stuart Cox, who wrote a series of realistic patient scenarios, covering a range of core medical emergencies and competencies. These included advanced resuscitation skills, intubation, utilising immobilisation and resuscitation equipment, and rapid disembarking of a patient. They were then enacted with the use of a high fidelity simulator (SimMan, Laerdal UK) that responds to clinical intervention and has respiratory functions, palpable pulses, a blood pressure and an ECG trace with the ability to pace and defibrillate.

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Emergency disembarking from the air ambulance

Each scenario was explained to both medical and aviation teams and the simulator was set up in CEGA's air ambulance, which was essential to the creation of a realistic working environment. The physical space, engine sound and location of medical equipment all enabled crews to improve their situational awareness. As one participant stated: "It's easy to undertake defibrillation in a classroom, but on an air ambulance it's more challenging, especially given the communication also required with the flight crew."

"The physical space, engine sound and location of medical equipment all enabled crews to improve their situational awareness"

The simulator was remotely controlled, while a live camera and audio feed transmitted events to the crews outside the plane who were not taking part. This allowed them to critique, analyse, and learn from the scenarios; supported by a facilitator who provided a running synopsis, covering both clinical and aviation physiology.

After each scenario the medical and aviation teams were debriefed together, leading to wide ranging but focused discussions; emphasising key learning points from each scenario and allowing time for reflective practice.

Core themes highlighted in the debrief for multidisciplinary crew development included communication, prioritisation inflight, clarity of roles, procedures for defibrillation, and

flight diversion with the deteriorating patient. Simulation allowed CEGA to demonstrate and discuss these in a safe environment. As a secondary benefit the crew offered input on changes to the layout of equipment and the development of cognitive aids for medical and flight crews, which will enhance both aviation and patient safety.

The simulation session was formally evaluated and enthusiastically embraced by all participants. Their anonymous feedback presented an overwhelmingly positive response, with 100% stating they would attend again. CEGA's Chief Medical Officer, Dr Tim Hammond, also provided feedback after the

day, saying: "Simulation training in an aircraft can provide medical crews with valuable hands-on experience in a safe and controlled environment; both by promoting a positive patient safety culture, and assisting crews to develop teamwork and communication." Crews were so positive about the session that they have submitted ideas for situations that they would like to see simulated during future training days.

Following a formal review, simulation training will now be a frequent part of CEGA's mandatory training program and multifaceted educational strategy, and will expand on skills gained from the initial session. Additionally, a new induction course has been designed to include simulation training, so as to prepare crews for the work undertaken on air ambulances. This will be rolled out to crews caring for the wide range of patients repatriated by CEGA Air Ambulance; from neonates to adults.

This simulation day has inspired a new learning culture at CEGA Air Ambulance and is testament to CEGA's commitment to be at the forefront of innovative patient safety and aviation initiatives; developing effective multidisciplinary crews.

References:

Patient Safety First (2008) National Patient Safety Agency.
 Gaba, D (2011) Have we gone too far in translating ideas from aviation to patient safety? No BMJ; 342doi: 10.1136/bmj.c7310 (Published 14 January 2011)
 Boulet, R., and Murray, DJ (2010) simulation based assessment in anaesthesiology. Anaesthesiology 112 p1041-1052

Top 10 downloads

- Confidentiality Agreement
- SimMan 3G - Recorded FEMALE vocal sounds and speech
- SimMan Maintenance Checklist
- Dinwiddie - Alcohol Intoxication Scenario - SimMan 3G Paramedic and EMT
- Dinwiddie - Anaphylaxis Scenario - SimMan 3G Paramedic and EMT
- Dinwiddie - CHF Scenario - SimMan 3G Paramedic and EMT
- Arterial Blood Gas Template
- Dinwiddie - Foreign Body Airway Obstruction Scenario - SimMan 3G Paramedic and EMT
- Dinwiddie - Asthma Scenario - SimMan 3G Paramedic and EMT
- Scenario Programming

Forum Topics

- General
- Discover Simulation
- SimStore
- Events
- SimMan 3G Functional
- SimMan 3G Technical
- SimMan/SimBaby Technical
- SimMan/SimBaby Functional
- Patient Cases and Senarios
- SimNewB
- ALS Simulator



<http://simulation.laerdal.com>

Top line-up for National Inter-professional Paediatric Simulation Symposium



Speakers from left to right : Fiona Horrox, Ralph MacKinnon, Simon Newell, Jonathan Cusack, Charlotte Bennett, Joe Fawke, Suzanne Gough, David Grant, Patricia Weir, Steve Hancock, Kathryn Claydon-Smith, David Rowney, Kate Parkins and Tobias Everett.

More and more eminent healthcare professionals are working together to help embed simulation training within the paediatric healthcare curriculum. Seventeen UK consultants at the forefront of paediatric healthcare came together at the Royal Children's Hospital in Manchester on 6th February 2012 to deliver the latest findings at the national inter-professional paediatric simulation symposium.

Over one hundred nursing, medical and allied healthcare professionals from around the country converged to listen to an impressive programme of presentations about how simulation is being used to hone communication, clinical and social skills in all situations ranging from birth and uncommon treatments to palliative care and death.

Introducing the symposium on behalf of the Inter-professional simulation network, symposium organiser Ralph MacKinnon stated how rapidly interest in simulation has grown in recent years. He encouraged delegates to take home inspiration from the emerging 'showcase' material and help increase the use of simulation across all paediatric-training disciplines.

Throughout the day, common themes included the merits of using simulation to improve understanding of roles in inter-professional teamwork at all levels and in all disciplines. Many agreed that although simulation training was making a difference, one of the biggest hurdles to overcome was the problem of releasing nurses for training.

Accelerated learning

Simon Newell, Royal College of Paediatrics and Child Health, opened the presentations by discussing the use of simulation in training and assessment. "Twenty years ago, it was necessary to have 45,000 hours of training experience before going into practice. Now, the number of required hours has been reduced to only 15,000 hours of training. To improve and sustain patient safety, we need to develop different training methods, such as on-site training facilities so that it can become easier to release staff for regular training during working hours," he said.

"Inter-professional communication problems are the root cause of term perinatal mortality. Simulation can be used very effectively to give people experience in uncommonly encountered clinical and emotional situations, and can dramatically help people understand the need for improved communication and assertiveness. This kind of experience helps people deal with incidents safely, efficiently and with confidence. Unless you are already seeing the benefits of using simulation training, it is impossible to understand how it can accelerate skills learning. The use of simulation is increasing but to reach the stage at which we can embed it in the curriculum, we need everyone to be aware of what's on offer."

Talking about the possibility of simulation being used for assessment purposes in the future, Mr Newell mentioned the new START assessment for level 3 candidates, on which David Grant is leading on simulation. He explained, "Simulation is perfectly suited to being a formative tool. Here in the UK, we are lucky that the NHS system allows many of us to develop progressive networks,

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come to meetings of this type and drive new ventures to help embed simulation into the curriculum. Once simulation's validity, reliability and feasibility and a framework of standards have been measured and fully evidenced, it may well be used widely as an assessment tool."

The current employment of simulation in inter-professional training

Suzanne Gough, Manchester Metropolitan University, is looking at current drivers, innovations, challenges, barriers and research gaps in order to evidence the importance of using simulation to improve inter-professional teamwork. She is in the process of studying local, regional, national and international projects, particularly at collaborative nursing projects in America and in physiotherapy across Australia. "Simulation has an increasingly important role in bridging the gap between university-based education and clinical placements in undergraduate healthcare programmes," she said, "but providing either inter-professional simulation or clinical placements are often difficult due to the variability of different professions' programme requirements."

In simulation, no two experiences are the same. It is unlikely in some countries that simulation will replace clinical placement experience due to cost issues.



Simon Newell, RCPCH

"It is possible that the use of simulation could be used to accelerate experience, and there are positive, qualitative results. But there is still a way to go before it is embedded in the curriculum the world over. Right now, in most cases, it's being used as a bolt-on or short course. Evidence is lacking in the impact of simulation in under-graduate

and paediatric healthcare training, but we have narrowed down a hundred and twenty studies to look at processes and products used in eighteen international projects. These range from national disaster training in Canada to sustaining skills in rural healthcare provision in Tasmania. Very few of the articles relate to paediatrics, but across the board we are finding that there is a lack of patient safety training and human factor training, and that one-off training is much less efficient than regular training. There is a lot of good information about the power of debriefing after a scenario, but we need to further explore the consequences of regular simulation training. To achieve better documentation, we need to support objectives and define some goals."

The use of simulation in logistics

It's not just in the hospital setting that inter-professional teamwork training is crucial to patient safety. Steve Hancock, from Embrace Yorkshire & Humber Infant & Children's Transport Service, explained the merits of using patient simulators such as SimBaby within a simulated ambulance or helicopter scenario. "In order to control an effective handover, our first step is to establish leadership and define roles," he said.

"Simulation is ideal for creating unexpected scenarios where teams have to work closely and quickly in uncommon situations. We can introduce all aspects of events into a handover or journey, such as cardiac arrest, vehicle crash and loss of power. Simulation helps to deliver practical experience in critical thinking, verbal and written communication, teamwork in emergencies and clinical skills."

"It is possible that the use of simulation could be used to accelerate experience, and there are positive, qualitative results"

Embrace uses one of their four emergency ambulances to run scenarios with high and low fidelity simulators that can be packaged realistically in harnesses and baby pods. A variety of kit and techniques are used to enable students to practice realistic transfer processes and emergencies, and to identify and manage physiological changes in the patient in different environments. Dr Hancock described how students experience practicing preparations such as calculating gas supply and ensuring the right kit is on board, and practice procedures so they would be prepared should any systems fail. Scenarios, which were showcased from across the UK, can include ambulance, helicopter and aeroplane simulations. "Teamwork is of the essence," he said, "especially with minimal human resource, clinical isolation and restricted space. Although standards for simulation training are progressing slowly, we recognise the need for more research and shared experience to enable us to maximise the potential to train for excellence in transportation professionals."

Simulation in Intensive Care Unit training

From the South Thames Retrieval Service and Evelina Children's Hospital, Sara Hanna runs training courses that aim to address competency and inter-professional issues largely encountered through the restructuring of intensive care units.

Ms Hanna explained how the initial courses incorporated very high fidelity patient simulators and focused on the recognition of symptoms in children, and how to resuscitate a child. Following discussions and reports after the course, it was apparent that the people attending the course generally already had plenty of experience. For those who didn't have the experience the course fell short because the simulation centre environment wasn't true to their own. In short, Ms Hanna found that the course was not reflective of the requirements of different hospitals, so decided that the course would be better run as a funded outreach programme - in situ - for those who needed it.

At no cost to the hospitals, Ms Hanna ran twenty to thirty minute, clinically important scenarios based on real cases; for example, a six year old boy who was suffering appendicitis and needed treatments including blood tests, gases, resuscitation etc. Three and a half thousand individuals whose disciplines have included nursing, anaesthesia, consultancy and allied healthcare have now taken the in-situ course. Between 50% and 90% of the people who experienced the scenario had had no previous experience of training for this uncommon situation.

"After the course, most people felt their knowledge and experience had improved and that they would be able to cope in a real-life situation," said Ms Hanna. "The key performance indicators were practical, technical

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and communication. The uptake of the course has been extremely positive, but unevenly spread. Some hospitals have had several training sessions whereas others have only had one. To increase the regularity of training across all hospitals we need to continue to network and drive simulation training into the curriculum.”

Simulation training in situ

Joe Fawke and Jonathan Cusack from the Leicester Neonatal Simulation Team are keen advocates of point of care simulation training and have run scenario-based neonatal healthcare training on the neonatal units in Leicester for around four years.

“We should train people in skills they need to do their job,” said Dr Fawke. “By training people in their actual place of work, we can identify realistic needs. We deliver one-hour sessions to a team of a senior doctor, a junior doctor, a senior nurse and a junior nurse. The session includes a fifteen-minute introductory lecture to familiarise the participants with the scenario and to clarify that this is training, not assessment, followed by a fifteen-minute high fidelity simulated scenario and a thirty-minute debrief. The session is run by two instructors and if necessary, an additional person taking on the role of the parent.”

“The advantage of using this kind of training is to see how the team dynamics work with the people who would actually be working together. There is nothing hypothetical about the teamwork. Sometimes the scenario will end well and sometimes it will end in death, but we are always clear that it is not an assessment and there is no ‘fail.’ It’s a learning process; an educational tool. We have run so many scenarios now that people expect to partake in regular simulation training. It’s not an add-on. It’s part of the working week. The only difficulty we find is releasing nursing staff from duties, but the problem isn’t insurmountable. Quite a lot of nurses come along for a course in their own time, but are given time in lieu. Alternatively, with buy-in from matrons, cover can be arranged.”

Dr Cusack added, “For multi-disciplinary scenario training, we often use the expertise of senior nurses or doctors to debrief certain actions as they are much more in-tune with the relevant requirements of each individual role. It adds credibility to the debrief. Nurses in particular appreciate the additional training as it helps to break down protocols and improve communication in the traditional hierarchy of the medical profession. Although we are well practiced in running good scenarios now, we are focusing on outcomes. Factors such as institutional and staff buy-in will lead to the development of more in-house facilities and training that will deliver training solutions for localised problems. In-situ simulation training can deliver real value for money. It is more cost-effective than releasing people for training courses, will increase the regularity of training, and will help standardise training across departments.”



Mobile Clinical Skills Unit, Scotland

Simulation on the Move

One in five of Scotland’s five million inhabitants is a child. There are fourteen health boards and forty acute hospitals. North of the border, two hundred children a year become critically ill each year and rural areas present massive issues in terms of human resource and transportation.

In 2008, after delivering national healthcare training on a shoestring for a number of years, the Scottish Government initiated a scheme to deliver paediatric healthcare training more locally. This led to the introduction of a Mobile Clinical Skills Unit that would visit the more remote areas of Scotland to allow those unable to travel for training, to engage in specialist training on site. The ‘skills bus’ was built to a bespoke requirement, so that it would fit on island ferries as well as enable a vast range of equipment and space to be employed. The size of a small double garage, it can accommodate a scenario for up to sixteen people.

“In the first two years, we delivered twenty courses in nine locations. We have just completed our third year,” said David Rowney and Dennis Kerr, Royal Hospital for Sick Children, Edinburgh. “We have trained anaesthetists, GPs, physicians, paediatricians, emergency services, nurse practitioners, nursing students and allied healthcare providers. Courses have evolved to include checklists, action cards evaluation forms. Over eighty per cent of participants have agreed that their skills and confidence levels have improved and a hundred per cent have told us that the course has had a lasting impact on their practice by giving them a better understanding of complicated child retrieval issues, inter-professional roles, drug guidelines, better communication skills and a greater understanding of the care of an injured or critically ill child. SimBaby has been the star of the show! It has really made a difference to what we are aiming to do. We were fully booked for 2011, so the system is obviously working!”

Using simulation to hone skills and deliver new experiences

Kate Parkins and Kathryn Claydon-Smith run paediatric healthcare simulation training courses for the North West and North Wales Paediatric Transport Service. Kate runs between eight and ten full-day courses a year. High dependency courses for nursing staff are run between two and four times a year and there have been three inter-professional study days in the last twelve months. A recent study day focused on skills that anaesthetists and consultants need in the care of a sick child. The format of the day - which can be tailored for any

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discipline and multi-disciplines - includes case discussions, scenarios, debriefs and supporting actors. The next course, in May 2012, will centre on how to manage and cope with the death of a child.

Discussing the set up of the training, she explained how educators have used simulation to build stronger team relationships. "The key is not be too ambitious," she said. "Simulation is as important for allowing students to apply their theoretical knowledge, as offering new experiences. Attention to detail is very important. A realistic environment is a must, medical props help and if a patient (for example SimMan) is breathing or talking, it enhances the realism. After delivering a course tailored for High Dependency Unit skills-learning, participants said the experience brought home to them that they had more skills than they had previously realised. Many participants gain a lot from the multi-disciplinary learning, with key learning points for better team-working drawn from reflection in the debrief. The retention rate for lectures is 10%. The retention rate for simulation is around 90%. It makes sense to run more simulation courses."

Simulated death and palliative care for children

In the UK, one hundred and fifty children are newly diagnosed with cancer each year. Thankfully, seventy per cent are cured. In 2011, there were thirty-three deaths of children requiring palliative care for cancer-related illness or terminal tumours. Ralph MacKinnon and Andrea Stevenson from RMCH are ensconced in a project that delivers training in the care of the dying child. "Gaining experience in palliative care in the case of children is particularly challenging," explained Mr MacKinnon.

"End of life care requires clinical skills and a social, spiritual and practical understanding of the death of a child. The families of 60% of children in palliative care choose for them to die at home. In the Manchester area in 2011, nineteen community teams were involved in home deaths of eleven children. The average career span of a GP includes palliative care of only one child with cancer. We are privileged to have tremendous support from three specialist children's hospices in the North West, but even so, 93% of medical and nursing staff within our paediatric oncology units said they would like to receive more training in symptom recognition and control, pain management and care of the deceased and their families in the community environment."

Simulation provides a bubble of safety in which to learn

"It was a personal driver to improve training in palliative care of the dying child," Mr MacKinnon said. "I had a lot of help the first time I had to deal with a child's death, but I believe that better training should be given to anyone who is likely to be involved with the death of a child. Simulation training provides a bubble of safety so that students can learn best practice without the emotional involvement of a real-life death."

Keen to collaborate on a research pathway, Mr MacKinnon and Ms Stevenson have secured funding from their local health authority, and are piloting a paediatric death scenario in April 2012.

"Our aim is for every healthcare professional to know a good death," said Ms Stevenson. "Having no experience of death is frightening when family members expect you to be in control of the situation. Practitioners should be able to identify and be one step ahead of

every single symptom - whether this is pain, respiratory distress, excessive secretion, or reduced conscious level. Fear of the unknown is the biggest barrier to confidence. Having the experience to control pain, avoid unnecessary medication and transport, and be able to deal with issues as they arise enables the practitioner to give the best possible care to the dying child and support families through the ordeal without fear."

Mr MacKinnon and Ms Stevenson have contacted twenty-seven cancer and paediatric palliative care networks to identify any gaps in current training standards, the most experienced trainers and best simulation centres for mimicking the home, ward and hospice environments, and are planning to talk about their pilot scheme in a national symposium in the summer of 2012.

A pilot scheme for a competency assessment package

As a Consultant in Paediatric Anaesthesia and Intensive Care at Bristol Royal Hospital for Children, Patricia Weir is active in the integration of simulation into the Severn School of Paediatrics. She is working on a pilot of competency assessment package at ST1-3 level, and the department is hoping to validate it.

Through research into core competencies and skills gaps, Patricia has led the development of a 'Key Competencies' course and a 'Step up to Registrar' course. The latter gives ST3 level students who are in preparation for being middle grade trainees or registrars, the experiences of handling situations as a senior.

"The Severn School of Paediatrics bought into the idea of using simulation in education in 2009," she said. "Since then we have run six courses a year for Level 1 and Level 2 students. More and more students are agreeing that simulation exercises could be used in assessment. The fear is being dissipated! Our Paediatric SHOs have had simulation embedded into their curriculum and they have therefore had a lot of exposure to this kind of training. It has definitely made a difference to their mind-set. It has given them an appetite for more!"

"The retention rate for simulation is around 90%. It makes sense to run more simulation courses"

Simulation exercises help improve infection control processes

Among her many credentials, Fiona Horrox, Senior Lecturer, Paediatric Nursing, LSBU belongs to the International Paediatric Society of Simulation and educates both pre-registration and post-registration nurses in care of the acutely ill child. In a project that aims to link simulation training with increased patient safety, Ms Horrox is looking at increasing the competence and confidence of nurses. This is with the learning objective of assessing and escalating treatment for children who are deteriorating using ABCD assessment, implementing patient warning systems and communicating effectively utilising initiatives such as SBAR. Constructively aligning the curriculum, culminating in a simulated scenario exam has seen over eight hundred post registered paediatric nurses undertaking this process over a six year period.

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“Two research papers, twelve years apart, analysing children who have become critically ill or died through mismanagement of severe sepsis, have shown little improvement,” she reported. “It is worrying that despite being cognisant of human factors that contribute towards failing to recognise serious illness, escalating appropriate management and communicating concerns effectively, there are still errors causing the death of a child and costing the NHS millions per annum. It is thought that many of these deaths could have been prevented. Simulation training is an excellent way of giving nurses the experience of situations they will encounter regularly. “We run numerous simulation sessions finding nurses evaluate them as one of the best ways to learn, develop and reflect upon human factors and clinical skills. With the help of simulation, we are looking at improving systems that provide opportunities to instill cognitive, affective and psychomotor skills in our nurses.”

After undertaking one of four, eight-week modules with Ms Horrox and other team members, the simulated exam centres around a scenario. SimBaby or SimJunior is assessed using the ABCD model, immediate interventions are given, findings communicated, evidenced-based rationale for clinical interventions and altered pathophysiology stated and clinical questions answered. Early evaluation of fifty-four nurses undergoing a simulation assessment shows a significant improvement in confidence. Trust managers are noticing increased competency in practice, which helps secure further contracts for the modules. The next area of development is inter-professional courses with medical schools starting this later year.

A case for better support

Charlotte Bennett, Neonatal Consultant at the John Radcliffe Hospital, has a long-standing interest in resuscitation training and has been Course Director for the Resuscitation Council (UK) Newborn Life Support Course (NLS) since 2001. She has developed and run a wide variety of courses that integrate simulation, founded a multi-professional collaborative group ‘NeoSim’ to advance neonatal simulation training in the UK, and has been awarded an ‘Innovation in Care’ grant from Bliss to establish a national ‘advanced’ neonatal resuscitation training course, ‘ARNI’. Dr Bennett is also trying to develop scenario-based learning in India.

“We need better support to keep the momentum going,” said Dr Bennett. “On-going training is vital to improve patient safety through team working. Simulation provides a perfect platform for learning new skills and refreshing existing skills - for students through to experienced consultants. We are all working towards the same goals. We have had a lot of success with our Oxford programme and are happy to share material and software/scenario resources on NeoSim and the Laerdal SimStore, so that we can continue to provide simulation centre, point of care and outreach education for primary healthcare teams, community nurses and midwives. Working together, we can create exemplars of excellence that push forward standards for training that will make a difference to patient safety.”

MEPA bridges the skills gap with simulation network

David de Beer is a consultant anaesthetist and the anaesthesia lead for simulation at Great Ormond Street Hospital. He is also involved in other simulation networking groups, including MEPA (Managing Emergencies in Paediatric Anaesthesia). The mission of MEPA is to

give all anaesthetic trainees the opportunity to develop management strategies for emergencies in paediatric anaesthesia using high fidelity simulation. The group is based primarily in the UK but new groups are developing MEPA courses in Canada and the USA.

“People expect to partake in regular simulation training. It’s not an add-on, it’s part of the working week”

Owing to a change in paediatric anaesthesia training with less exposure to clinical cases, simulation may be useful tool in bridging the resulting skills gap. “MEPA was developed as a national collaborative venture from the outset, which makes it unique,” said Dr de Beer. Consensus agreement was reached regarding the content, structure and educational goals of the course and evidence-based, peer reviewed management strategies developed for a number of important paediatric emergencies based on the competency-based training requirements of the Royal College of Anaesthetists (RCoA). First piloted in Bristol in 2006, MEPA has expanded nationally and more recently internationally, with on-going collaborative research focusing on the reliability and validity of simulation-based learning.” Following on from the success of MEPA for trainees, MEPA for Consultants has been developed to provide simulator training as part of the continuing education of consultants who do not anaesthetise children on a regular basis as recommended by the RCoA.

Keeping it real

In a series of short break-out sessions at the end of the day’s presentations:

- Tobias Everett from Bristol Royal Infirmary and Anna Johnson from Derriford Hospital in Plymouth discussed scenario development.
- Suzanne Gough from Manchester Metropolitan University and Will Marriage from Bristol Paediatric Simulation Programme discussed the power of debrief using different debriefing techniques and technologies.
- David Grant from Bristol Paediatric Simulation Programme and Ralph MacKinnon from Royal Manchester Children’s Hospital held an interactive workshop on asking the right questions during a debrief.

Talking about the best methodology for debrief, Dr Grant suggested that learners tend to find their own solutions through shared exploration of their scenario. “Mistakes are often the result of intentionally rational actions,” he said. “If the facilitator is able to lead the learner in exploring the rationale behind the action, then the learner and the team involved are more likely to develop a deeper understanding of the principles governing their actions, correct them and change their critical-thinking process.”

Talking about the structure of a typical scenario, Dr Grant discussed the importance of being clear about learning objectives. He pointed out that if it is not the objective of the scenario to manage death, it is detrimental to the learners to allow the patient to deteriorate to the point of arresting. It is much more powerful to pause the scenario, review the issues and then restart the scenario. This allows the learner to manage and address the problems related to the intended learning objectives rather than fixating on a sense of failure related to the death of a patient.

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Dr Ralph MacKinnon and Dr David Grant

“Simulated scenarios can really empower students with skill, confidence and knowledge,” he said. “However, simulation does have limitations. It is beneficial to identify at the beginning of the scenario that although the realism isn’t perfect, it is as close as it can be, so that this does not become the excuse for poor performance. The real key is for the relationship between student and facilitator to be comfortable and for the facilitator to be assertive and to acknowledge mistakes with good

judgement whilst maintaining a stance of curiosity. As long as the debrief discussion is open, safe and confidential, it will be an extremely valuable experience.”

Closing remarks

Thanking delegates, presenters and Laerdal for their support of the networking meeting and their interest in simulation, Ralph MacKinnon urged everyone to collaborate further to accelerate the speed of uptake for more simulation within the curriculum for paediatric healthcare.

Sarah Wimlett, Consultant Paediatric Anaesthetist from Derriford Hospital, Plymouth, commented, “We have just taken possession of a SimJunior after using SimBaby and SimNewB. This is the first simulation symposium I have attended and have found it very useful for information and for establishing links.

Sue Langworth, Paediatric Unit Manager at Withenshaw Hospital, University Hospital South Manchester agreed, “We have a clinical skills unit but it is mainly used for adult patient education. We need to start utilising the facility and want to develop multi-disciplinary training using low and high fidelity patient simulators. The timing of this symposium was just right for us. It was interesting to hear how others run scenarios and about the development of courses.”

Meet ‘The Sims’ helping to train our doctors and nurses

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Davina, a 24-year old motorcycle victim has been brought into Accident & Emergency. She has head injuries with a possible neck fracture, is semi-conscious and tachycardic. The team get to work assessing and managing her injuries. But Davina is no normal 24 year old – she is the patient simulator manikin in the new Simulation Suite at Northampton General Hospital.

The suite is being used to train all levels of medical staff and students in non-technical skills which help them manage and deal with life-threatening emergencies. The simulation training room and adjoining control/debriefing room are based in the Training Centre and have been largely funded by a generous grant from the East Midlands Workforce Deanery.

Clinical simulation coordinator Vicky Garrod said: “We have a full range of patient simulators which we use to test learners’ critical thinking and clinical decision-making skills. All of them can be used to demonstrate a wealth of clinical conditions. They realistically

respond to challenging simulations, and their vital observations can be altered remotely at the touch of a button, depending upon the performance of learners.

“Our adult simulator can be adapted to be male or female, and is called Dave or Davina, depending on the scenario. Sam is our infant simulator. He is six years old and also responsive to learners’ interventions. He breathes, cries, laughs and his lips turn blue if he does not have enough oxygen. And Alex is our 14-month-old baby.

“We have a full range of patient simulators which we use to test learners’ critical thinking and clinical decision making skills.”

“The main emphasis of the simulation suite is to provide clinical staff with non-technical skills focusing on human factors such as

communication, delegation, prioritisation and teamwork. Gaining experience in managing different scenarios enables staff to improve patient safety and the patient experience. The training can also be very rewarding and often fun, improving staff morale in addition to improving their skills.”

Simulated patients help students learn key skills

A brand new state-of-the-art training suite which will help prepare the doctors and nurses of the future has opened at Northampton General Hospital.

The NGH Simulation Suite has the ability to replicate any clinical area within the hospital or community environment, providing realistic facilities so that all grades of staff and students can receive training and practise their skills in simulated settings without compromising patient safety.

The suite boasts three life-size patient ‘manikins’ which can breathe, bleed, blink, react to medicine and even speak. They can simulate life-

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threatening medical conditions and can also be cannulated, catheterised and intubated.

The manikins enable trainees to carry out a wide range of procedures including emergencies such as a tracheostomy (creating an opening to the windpipe). The simulation can be video recorded so that team members can view and comment on their performance. Following this, a facilitated debriefing session allows candidates the opportunity to learn through reflection, mutual support and shared skills.

“The simulation suite is such a great resource, and all of our group had an excellent training session.”

Dr Andrew Jeffrey, consultant physician and director of medical education, said: “The opening of this new facility is a big step forward for NGH, and enhances our ability to provide the best learning experience possible for the doctors and nurses of the future. The manikins don’t just teach our students how to diagnose and treat patients. This is important, but they also teach key skills such as communication, delegation, prioritisation and teamwork to ensure patients receive the safest and best possible care.”

The new facility gives students including trainee doctors, nurses, physiotherapists and midwives the chance to treat a lifelike manikin, and hone their skills, carrying out a diverse range of procedures and treatments before using them to treat actual patients.

Practice development midwife Linda Matthews said: “The simulation suite is such a great resource, and all of our group - midwives, obstetricians, anaesthetists, and operating department practitioners - had an excellent training session. It provided us with a great opportunity to practice together as a team and gain a greater understanding of our specific roles and responsibilities in an emergency situation. Everyone involved was very positive about it.”

The development of the suite, which has been in use since last October, was made possible through a generous grant from the East Midlands Workforce Deanery, who funded

almost all of the £250,000 build and setting up costs.

An existing area within the training centre has been converted into two simulation training rooms with adjoining control and debrief rooms. The larger simulation room can be used to replicate a theatre, ITU, A&E or ward area, and the smaller room is used to represent a GP surgery or hospital consultation room.

The simulation training is remotely managed via computers based in the control room. Trained facilitators watch the training through a oneway mirror and can communicate when necessary with learners by telephone. The whole experience can be witnessed by other learners in the debrief room and is an essential part of the simulation where team performance

can be discussed by all learners as a group. Debriefing is a powerful learning tool aimed at promoting positive human behaviours and is undertaken only by trained facilitators.

Clinical simulation coordinator Vicky Garrod said: “Gaining experience in managing different scenarios will enable staff to improve patient safety and the patient experience. Simulation training can also be very rewarding and often fun, improving staff morale in addition to improving their skills.

“We are planning to run specialist scenarios with groups of staff including obstetric, paediatric, accident and emergency, intensive care, theatre and respiratory ward teams. We also hope to be able to offer the use of the simulation suite to other hospitals and outside agencies where appropriate.”



Clinical simulation coordinator Vicky Garrod with 'The Sims' Davina, Sam and Alex.

Taking the SUN meeting to a new level!



Neal Jones, St Helens and Knowsley Teaching Hospital

On 15th March, Laerdal joined forces with simulation experts in the North West to deliver a vibrant Simulation User Network (SUN) meeting at St Helens and Knowsley Teaching Hospital in Prescott. The meeting was attended by over 70 healthcare practitioners and educators from a range of disciplines. The no-holds-barred symposium provided delegates with the opportunity to watch a typical scenario streamed live from the hospital's accident and emergency department, discussed stakeholder buy-in and the pros and cons of in-situ and simulation centre based training. For the first time, Laerdal also provided an open technical forum for users of patient simulators and associated software.

Ten years' collaboration

Neal Jones, Head of Clinical Education at St Helens and Knowsley Teaching Hospital, and Jeff Goulding, Manager of the Cheshire and Merseyside Patient Safety and Simulation Centre, are firm advocates of embedding simulation training into the working week to enhance patient safety.

The Whiston Simulation Centre runs several weekly in situ simulation scenarios across its various hospital sites and in two purpose-built simulation suites at Whiston Hospital. The Cheshire and Merseyside Patient safety and Simulation centre provides training to hospitals and universities across the region and has been at the forefront of simulation training for over 8 years.

Both teams are keen to share their knowledge and experience and collaborate with other educators to drive simulation forward. Stakeholders, staff and students have all bought into the benefits of simulation training, and the results speak for themselves.

An essential learning experience

Training for healthcare professionals and students is regular, concise and valuable. Chairing the SUN meeting, Neal explained how scenarios take place on the ward, theatres, in the A&E department and in the simulation suite. Everyone gets involved. "When trauma teams receive the live bleep, they respond to the call as if it were a real life patient" he said. "Everything must run as it would in real time, with administration teams, doctors from across multiple specialities, nurses and other healthcare professionals all taking on their normal roles and responsibilities."

"Simulation training is an important educational tool in promoting patient safety" says Jeff. "The fact that we are able to utilise video footage of simulated scenarios allows students to reflect more accurately upon their performance. The post scenario debrief are so crucial to the learning. While scenarios enable participants to practice skills, and rehearse clinical management, debriefs can highlight human factor issues and offer strategies to improve leadership, teamwork and communication, which are the main causes of patient error on the ward or in a clinical emergency."

"Stakeholders, staff and students have all bought into the benefits of simulation training, and the results speak for themselves."

"We use simulation to recreate actual incidents from clinical practice; to allow people to experience errors in a safe environment. It is important to give students more than one scenario where possible, as this helps them to try out strategies that have been discussed in the debrief and demonstrate an improvement in their performance. Through developing simulation at our centre over the last ten years it is our hope that we are helping to develop safer practitioners in healthcare in our region."

In situ or in a simulation suite?

Discussing the benefits of in-situ or simulation centre training, Jeff explained that each have their roles. Scenarios delivered in the clinical area enable participants to identify and find solutions for real environmental issues such as reaching patients in time-critical situations, testing systems and equipment usage. The fidelity is excellent as it utilises all of the hospital's systems and processes, providing a true dress rehearsal for real life patient care. In situ simulation is utilised as a mechanism for identifying and removing latent errors, which previously could have gone unnoticed in healthcare until a real life error occurred.

In the simulated environment, with a facilitator to address any environmental unfamiliarity's, the team can focus on the clinical requirement, communication and their role within multi-professional teams. With a little imagination, any environment can be created, and any clinical scenario can be run.

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A live scenario

After an explanation of how a typical scenario runs, delegates were invited to watch a live simulation training exercise that was taking place in the hospital's emergency department. Streamed live to the auditorium, the scenario involved a trauma that required an anaesthetist, a radiographer, nurses, a ED doctor, a surgeon, blood tests, Xrays and plenty of communications relating to patient history, cultural issues relating to transfusions, direction, decisions and teamwork. After a ten minute stabilisation scenario, the debrief opened up discussions relating to roles, processes and equipment placement, which transpired as a valuable learning curve for experienced and novice participants.

"It's not just financial investment. It is investing in education with a strong focus on patient safety"

Learning from experience

Joining the delegates and presenters from the live scenario, Head of Simulation and Clinical Skills, Nick Bennett explained the processes that the team have gone through to bring their simulation training up to such a high standard. "SimMan 3G has dramatically enhanced the fidelity of simulation exercises as the wi-fi capability ensures it is able to be wheeled in and out of environments," he said. "We utilise the real clinical areas equipment to ensure that all members of the health care team are fully prepared for real life practice. In some disciplines, we find that didactic teaching to familiarise participants with the concept of simulation training has a better success rate than expecting them to engage with the fidelity of simulation from the outset. We have also learnt to be prepared for the unexpected. For instance, we were running a scenario that involved SimMan being wheeled into the hospital from an ambulance. It was pouring with rain, so we had to get a body bag to protect it!"

Technical requirements

In terms of debrief, the St Helen's team started with low budget camcorders but now with a world class IT infrastructure in place, has since developed a highly efficient and cost-efficient bespoke audio visual system that allows HD video and audio to be streamed to any location within the hospital or even globally. Nick added, "Equipment doesn't have to be complicated, although if you are running scenarios regularly, it helps with the fidelity to have non-intrusive video capture and effective playback."

Patient Simulators - an open forum

With a focus on the technicalities of simulation training, Robert Murray led the Laerdal team in a Q&A session that included hardware and software issues relating to SimMan and SimMan 3G and audio-visual requirements. This was a transparent forum that discussed issues such as pulse rates, eye functionality, wi-fi issues and software updates, and aimed to address any queries encountered by users.

Achieving amazing results

St Helen's and Knowsley teaching hospitals trust is a truly innovative organisation with Neal and Nick receiving tremendous support from executives. They are always looking ahead to expand their educational offering. "It's not just financial investment. It is investing in education with a strong focus on patient safety," concluded Neal.

"Simulation training is achieving amazing results here. People who take part in simulation training appear to retain knowledge and skills far longer than those who take part in traditional, didactic learning. Our aim now is to collaborate with other hospitals and educators to broaden our offering and help others with advice on running scenarios. We have a wealth of experience that we are keen to share, and that is key to the future of embedding simulation with Healthcare."

"SimMan 3G has dramatically enhanced the fidelity of simulation exercises"

Comments from delegates included,

- "I was very impressed by the openness and transparency of the support available."
- "Excellent speakers – the live scenario and Laerdal's open forum were particularly useful."
- "An excellent event – managing to show how you can use simulation rather than talk about how to do it."
- "The day was very interesting, seeing how simulation is moving forward and seeing real benefits of dealing with latent errors and improving team working."
- "Good to network. It was an excellent day and very well organised. It was extremely useful to meet other users in the North West and brainstorm ideas with them."

Please contact Laerdal for dates of a SUN meeting near you.



News FROM ABROAD

Putting Nursing Students Through Their Paces



A report from Sandhills Community College, North Carolina, USA



physical assessment skills. The objective of this simulation exercise was to be assured that the students had confidence and competence in performing a beginning patient assessment prior to entering the clinical areas.

The faculty had discussed and decided that it would be very helpful to students, given the time constraints and the fast and furious pace of the program, if they could view a mock patient assessment done by faculty. Never lacking in volunteers, our faculty rose to the occasion and thus a video was produced showing a full physical assessment done in the manner that we teach. This provided a basis for the student to incorporate all the elements considered essential in a beginning nursing students patient assessment. The students had access to this weeks prior to the simulation and had ample opportunity to come to lab to practice on each other with feedback from faculty. As is typical with beginning nursing students, they sometimes tended to focus on the 'tools' forgetting to look either at the patient or the environment.

“We added in a little measure of competition. A golden bedpan trophy was created.”

Preparation

In the planning stage, many faculty members shared their concerns, fears, ideas and experiences with other simulations. Knowing that timing is an incredibly difficult thing to estimate, the faculty came up with several activities to help 'stagger' the number of students to be tested as outlined above. A rubric was developed to determine how well the physical assessment was performed. (Figures 1 & 2)

Time restraints and Faculty shortages are all too common challenges both sides of the pond, which is why we welcome the following article from Virginia Minichiello and Heather Cox of Sandhills Community College, North Carolina, USA. Optimising the nursing curriculum timetable to progress first year students to appropriate competency levels prior to their clinical placements has been achieved through a new simulation programme. Designed not just to ensure students perform confidently and competently on day one when assessing patients in a real care setting, but to do so in a time efficient manner, thereby enabling them not only to maximise their own learning on placement but to be a valued member of the nursing team.

Today's teaching environment in nursing education has many challenges. Some are lacking adequate lab space, some have a limited number of faculty and others are dealing with the changing student profile. As a community college facing some of these same constraints today, calls for a great deal of ingenuity, imagination, and improvisation. One of the ways to address these issues is the use of Simulation. Nursing education has incorporated Simulations for more than 10 years (Decker et al. 2008). Nursing not unlike Medicine, has incorporated Simulations as a means to meet the 'new' students learning needs as well as to supplement decreased access to clinical sites (Cant & Cooper 2009, Paulson, C. 2011).

In our prelicensure nursing educational program, the first year students had an opportunity to demonstrate, experience, practice and refine their observational and

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For the assessment part of the simulation, the faculty decided that the students should work in pairs of two students and intentionally assigned them so that they were not with members of their clinical groups. The rationale behind this was that they could appreciate working with someone they were unfamiliar with and had to gauge their abilities as well as understand we don't always know our peers in the clinical area.

The faculty also decided to add in a little measure of competition by having the teams rated with their assessments scores and thus the higher scorer would be declared the winner. A "golden bedpan trophy" was created to be the award.

For the physical assessment part, 5 electronic manikins were utilized for this exercise. Some were Caucasian, some were African American, and both female and male gender. Students were given a profile of the patient that included past medical history, diagnosis on admission, lab values and the vital signs at the beginning of the shift. The students then entered the 'patients' room' and proceeded with the assessment. Two students worked together as one recorded the findings while the other did the assessment. Part of the exercise was to be sure the students noticed what else was happening with the patient such as the O2 was on, but the nasal catheter was under the pillow. Or the IV was not running and they had to determine where the problem was. Urinary catheters were in place with bags either overfilled or empty, requiring them to determine when the bag was changed. When the student was given the patient report, vital signs were reported but as they went through their assessment, the values would be electronically changed by the observing instructor. In this way, the student had to keep observing their patient as they progressed through the assessment. A timer was used to help keep students on track as to time. The expectation was that the students complete their assessment within 15 minutes. At the end of the lab simulation day, the students and faculty participated in a debriefing of approximately 30 minutes to assess the overall experience and how the students felt it helped their assessment skills.

"The students felt this activity provided them with a means to practice physical assessment in a standardized format. It helped the students assimilate the techniques and content. They were then able to perform their physical

assessments in the clinical setting with more confidence. The competition to win the "golden bedpan" helped motivate them to perform to the best of their abilities to show both their fellow students and the faculty how well they could do." (Lead Instructor).

Summary

As is often the case in simulations, there was an underestimation of time needed for the physical assessment part of the exercise. Due to this, there was a backup of students. This illustrates the need for other activities to be incorporated into the time frame as a means to decrease the possibility of 'down-time'. In our program, as in others, the simulation is

weighted as clinical time in the curriculum. Utilizing simulations in nursing education meets the needs of students today as their methods of learning are very different than past students. Students today have access to a variety of electronic media and are for the most part very familiar and comfortable with it. In the patient care setting, access to Electronic Healthcare Records requires that students understand privacy regulations and restrictions to access that information. Often referred to as 'Millennials' their learning styles vary greatly and as faculty, the challenge is to keep up with the changes as well as to integrate them into the curriculum. (Pardue and Morgan 2008). In the NLN

SCC 1st Annual Physical Assessment Guidance	Student Score Place check mark in this box	Possible Score	Scenario bites: This area will be for judges and will be their uniform answer to student questions to the manikin
Handwashing and introduction		2	
Patient Identification times TWO-		2	
Vital Signs plus Sats/ APICAL RATE		2	
Pain Scale		2	
HEAD			
Oriented to person, place & time		2	
Eyes (external structures) lids, sclera, conjunctiva, Iris		2	
Mouth - lips, tongue, teeth, gums, mucous membranes		2	
Speech		2	
Pupils (PERRLA)		2	
Carotid Pulse (no simultaneous palpation)		2	
O2 therapy-type and flow rate/ percent O2		2	
Psychosocial			
General observation (dress, hygiene, posture)		2	
Do you live alone?		2	
Do you use assistive devices?		2	
Do you use any community services?		2	
Chest			
Respirations - character & rate		2	
Lung sounds (6 sites/anterior & posterior, lateral)		2	
Sacral Assessment - edema & skin breakdown (with posterior assessment)		2	
Heart - rate, rhythm, normal and abnormal heart sounds		2	
Sputum production - amt/color, consistency		2	
Incentive Spirometer (amt, pt. education)		2	
Cardiac monitor - lead placement & rhythm strip		2	

Figure 1

Continued from page 13

Position Statement (2008) on Preparing the next generation of nurses to practice in a technology-rich environment....it is essential that nursing graduates know how to use the technology and tools available in an ever-changing healthcare environment with the caveat that safeguarding the patient and patient information is paramount.

Conclusion

Some of the favourable comments from students in debriefing were that it was creative, and they enjoyed the competitive aspect as well as the mixing up of their clinical group. Some of the suggestions were that more faculty be involved in the simulation and that more time be spent on feedback. Having the opportunity to do a complete physical assessment in a defined time without the stress of a 'live' patient provided for better learning for some, yet others stated that they would like to have real patients. Our plan is to continue adding this to the first semester curriculum with modifications for timing and flow.

“The students felt this activity provided them with a means to practice physical assessment in a standardized format.”

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SCC 1st Annual Physical Assessment Guidance	Student Score Place check mark in this box	Possible Score	Scenario bites: This area will be for judges and will be their uniform answer to student questions to the manikin
Abdomen			
Wounds, dressings, drains		2	
Distention		2	
Bowel Sounds		2	
Tenderness/Firmness		2	
Stool Consistency/date/color		2	
Urine/Foley/color		2	
Arms			
Nail Beds/ Cap refill and color		2	
Movement and strength		2	
Hand Grips		2	
Radial and Brachial Pulses		2	
Skin Turgor		2	
IV Assess site/dressing/date/fluid type		2	
Lower Extremities			
Nail Beds		2	
Pulses DP/PT		2	
Condition of Heels		2	
Presence of edema/symmetry		2	
Homans Sign		2	
Movement and Strength		2	
TEDS/SCDS/Foot Pumps		2	
Safety			
Bed Low position		2	
Call bell at side and talks about how to use it		2	
Bed Table beside bed in pt reach		2	
Bed Locked		2	
Side Rails Up		2	
Education			
Specific related to scenario		2	
Critical Clinical			
Maintains Privacy during exam		2	
Positions patient for nurse ergonomics		2	
Demonstrates ability to organize assessment		2	
Time 10-15 minutes			No score received for this box as it is mandatory
		2	
		100	

Figure 2

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Product FOCUS

Laerdal On-Site Services ... for all your product support needs



We have learnt that as new technologies offer greater learning opportunities in healthcare education, greater customer support is needed to ensure that you get the most out of your Laerdal products. It would be disingenuous of us not to acknowledge that in our efforts to apply advances in technology to our simulator portfolio, we have faced a few challenges along the way. We welcome your feedback from our Customer Satisfaction Surveys and overcoming these challenges has been a top priority for us. We are pleased to report that the creation of our new Field Service Division is already making a difference for our customers. Some of you may already have met members of the team, but if you haven't, let us introduce you now.



Tony Skehan

Tony Skehan is our Technical Services Manager and oversees this important service to our customers with 34 years of engineering experience to call on. This accumulated experience has been built from a wide range of sectors including television, radio, IT and manufacturing.



Mark Birch

Covering North England and Scotland, Mark is qualified in mechanical, electrical and electronic engineering with 25 years of experience in the field. A keen interest in both building and repairing computers, Mark has now been with Laerdal for 10 years.



Ian Cooper

Covering the London and South East region, Ian began his engineering career in the television and video industry before spending 20 years in the oil industry.



Dilip Pancholi

Covering the Midlands and North Wales region, Dilip is an apprentice trained Workshop & Field service engineer with over 30 years of experience in Servicing, Repair, Preventative Maintenance and Sales support of wide variety of Electrical / Electronic products.



Ian White

Covering the West Country and South Wales region, Ian comes to us with extensive engineering experience from the Royal Air Force, the Sultan of Oman's Air Force and the Oil industry. With 35 years in the engineering world, Ian brings a versatile knowledge to the Services team.

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Our recently launched Helpdesk is where your product support begins. It may be that you need to organise a Bench Repair or a visit from one of our Field Service Engineers, or you might just need some quick help with troubleshooting or have a product specification query that can easily be resolved in a phone call or an e-mail.

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EDUCATION THROUGH Simulation *News*



Laerdal
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Dates for your diary

29th June 2012

Laerdal Product Exhibition
Hilton Hotel, Swindon

12th - 14th July 2012

SITI - Diversity Across Europe:
Implications for Nursing
Maldron Hotel, Cardiff

10th - 11th September 2012

BACCN Annual Conference
Brighton Dome

27th September 2012

RCUK Scientific Symposium
National Motorcycle Museum, Birmingham

7th - 8th November 2012

ASPiH Conference
Kassam Stadium, Oxford

For more information about these meetings, please contact our Customer Service Department on 01689 876634 or customer.service@laerdal.co.uk

Reader contributions



If you would like to contribute articles to this newsletter that relate to simulation we would be pleased to hear from you. Please contact martin.clarke@laerdal.co.uk or helen.crofts-bolster@laerdal.co.uk



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