EDUCATION THROUGH Simulation and Resuscitation News
Issue 18 - Summer 2013

Welcome to the 18th edition of our Newsletter. I am pleased to report that we will now be including a dedicated Resuscitation section in future issues to cover and share some of the great work we are seeing in this field both in education and training as well as new therapy developments.

We have some interesting articles for you in this issue and I would like to thank Kirsty Harris from Portsmouth NHS Trust for sharing her work in exploring simulation in stroke care, which has taken her into multi-agency collaboration, no small task, when considering growing NHS pressures on staff release time.

My thanks also go to David Haliwell et al for the valuable insights into improving paramedic practical examinations. We include here a synopsis of the full article which can be downloaded from our website. Full details of this can be found on page 11.

Please continue to share your experiences with us but in the meantime, 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

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Now including Resuscitation News

Can Simulation in Stroke Care Improve Patient Outcomes?

Kirsty Harris, Simulation Fellow 2012, (ICU Nurse), Portsmouth Hospitals NHS Trust

The World Stroke Organisation '1 in 6' Campaign (2012) emphasises one in six people in the world will suffer a stroke in their lifetime. Stroke and TIA (Transient Ischaemic Attack) are medical emergencies but unless this is recognised by all healthcare professionals along the multi-agency care pathway, delays in symptom recognition and the resulting potential for compromised treatment and management of the stroke patient will continue to have a detrimental effect on outcomes. Kirsty Harris, Simulation Fellow 2012, (ICU Nurse), Portsmouth Hospitals NHS Trust gives us a compelling insight into how simulation has been utilised to better improve outcomes for stroke patients as well as promote a greater awareness of stroke recognition among the general public.

The South Central Strategic Health Authority's (SHA) clinical simulation fellowship projects 2012, aim to improve patient care by developing leaders of the future who will develop and lead simulation and patient safety projects. Improving the outcomes of patients suffering a stroke was one of the topics assigned and financially supported by the NHS South of England (2012) formerly known as the South Central SHA.

The Department of Health (2007) released the National Stroke Strategy, a 10 year development plan, to provide a quality framework to improve stroke services. I collaborated with the Trust's stroke team to develop a stroke simulation course. The area the stroke team wanted to address most was to improve door-to-needle time. In order to design and develop the course, all multi-agency teams involved with the stroke patient's pathway were included to ensure accuracy and relevancy of the course. The course received endorsement from the UK Stoke Forum.

Baker et al (2005) recognises simulation training to improve team performance and may help reduce human errors and organisational failure. In mapping the patient journey, I identified the need for multiple stakeholders within the pathway; in Portsmouth Hospitals NHS Trust they included: ambulance staff, emergency department staff, radiologists and stroke thrombolysis teams. At this point, I decided

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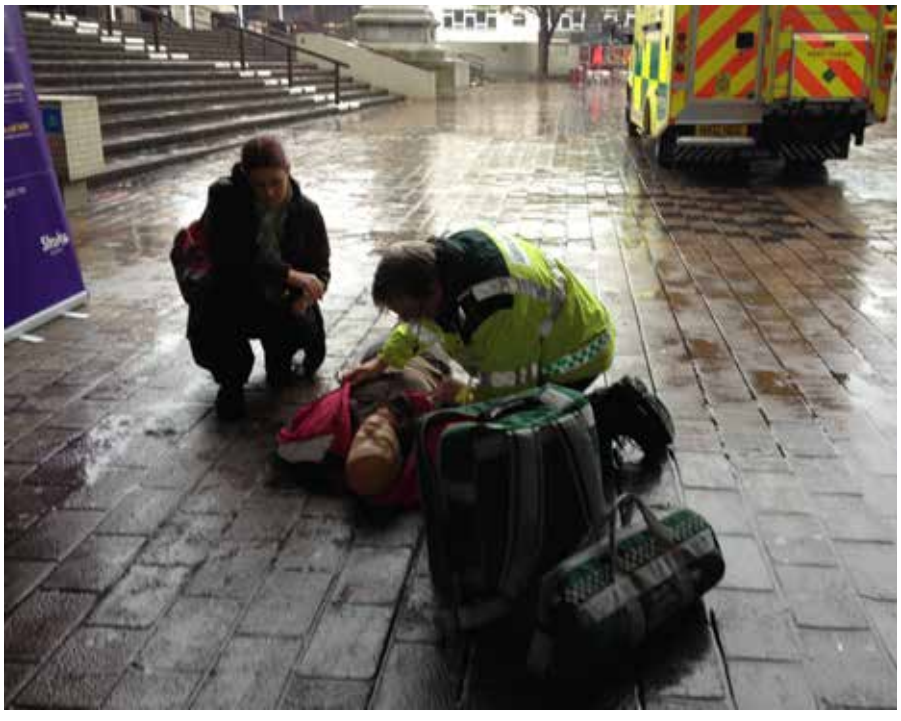
to break the project into two parts; the first part involved simulation training of medical, nursing and paramedical staff, and the second part was to enhance public awareness.

"During a 6 month period we managed to train 89 members of the multi-disciplinary stakeholders"

Thrombolysis treatment, also known as a "clot-busting" anticoagulant, is an emergency drug treatment that thins the blood and restores blood flow to the affected area of the brain. Both the National Stroke strategy (2007) and NICE stroke guidelines (2008) emphasise raising awareness as "time is brain"; for each minute of an ischaemic stroke, approximately 2 billion neurons in the brain are destroyed, so delaying emergency treatment can have a detrimental effect on the stroke patient outcome. The aim is to treat Stroke and TIA (transient ischaemic attack) as a medical emergency; therefore it is crucial that the emergency services need to identify, respond early, recognise and manage the stroke patient effectively. In order to assess the impact of the course I utilised the FAST campaign to reinforce the FAST message and encourage the public and healthcare professionals to reflect upon the previous stroke awareness campaigns. Stroke costs the NHS £7 billion a year. Early treatment could potentially save the NHS £1.8 billion in rehabilitation costs (DOH, 2005). The aim of the course was to allow the participants to rapidly assess and prioritise the needs of the stroke patient by: pre-alerting the hospital or the stroke team, fast tracking a computerised tomography (CT) scan of the head and mobilisation of specialist thrombolysis nurses to review the patient.

The method I used to design the stroke simulation course involved collaboration with the stroke team and utilising the National Stroke Strategy framework. Together we designed scenarios specifically targeted at stroke patients which were not always straight forward to assess. The consensus was to deliberately make the scenarios complicated to ensure good history taking and communication skills as this appears to be the common failing (National Patient Safety Agency, 2007).

The stroke course consisted of four scenarios with a pre and post simulation test. Preceding the introduction, I gave the group a test paper with 10 related stroke questions to assess prior knowledge of stroke. I timed the group for two minutes. I started with an introduction, including to the team (myself, a doctor or a nurse consultant, a thrombolysis nurse and a radiologist available on the telephone), and an orientation to the simulated manikin. The course lasted 4 hours, with each scenario lasting 10-15 minutes and a debriefing around 30-45 minutes. There followed a post-course test. The test results show a clear indication of knowledge learnt from the simulation training.



Ambulance staff completing a neuological assessment on SimMan

During a 6 month period we managed to train 89 members of the multi-disciplinary stakeholders. I felt it was important to train the healthcare professional first to recognise the early signs and symptoms of stroke and then improve public awareness. The reason I choose to train the staff first was to allow the healthcare professional to recognise the signs and symptoms of stroke so when the patient or relative identified the fast symptoms they would know what to do. The reinforcement of the FAST message would alert the ambulance staff to contact the hospital in advance via telephone/mobi-med/tele-medicine depending on the regional protocol. The next stage of the scenario was assessing the patient with altering physiological parameters and transferring the patient to hospital.

"Stroke costs the NHS £7 billion a year. Early treatment could potentially save the NHS £1.8 billion in rehabilitation costs (DOH, 2005)"

Once the stroke patient arrives in the hospital the ambulance crew need to handover the patient to the emergency staff. The National Patient Safety Agency (2007) identified communication and handovers "between the healthcare professionals can cause inappropriate treatment and potential harm to the patient". So I had to ensure good communication by emphasising two different communication tools. The communication tools used in the stroke simulation course were a combination of ATMIST recognised by the Regional Networks for Major Trauma (2010) as a standard checklist with a structured handover and RSVP communication tool to enhance communication skills between the healthcare professionals (Featherstone et al, 2008).

Communication is focused very highly in the stroke simulation training and this could be one of the weaknesses why the stroke patient is missed or not referred early enough to have the important CT scan to distinguish if the brain injury requires emergency thrombolysis treatment for an ischaemic stroke (National Stroke Strategy, 2007). The telephone call to

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the radiologist was an integral part of the course to emphasise the need for an emergency CT scan within an hour of admission to hospital.

After each scenario we conducted a debrief with all the candidates in which we discussed all aspects of the stroke patients care. We gave every member of the group the opportunity to verbalise what they had learnt from each scenario, what went really well and what they would do differently if they had another opportunity. The feedback forms from all the sessions were extremely positive and the majority had found the course a good positive learning experience which they would utilise in practice.

The public awareness campaign with SimMan took a lot of time to organise, particularly with the Trust's communications team and agencies external to the Trust. I took SimMan out of the simulation centre to the ambulance station, the emergency department and Portsmouth town centre to provide training on early response and recognition of a stroke patient.

Ambulance staff, Emergency Staff and Thrombolysis Nurse assessing SimMan for Thrombolysis treatment.

All the simulation fellowships had a clear project outline which aligns with the national QIPP agenda (Quality, Innovation, Productivity and Prevention) with clear goals and measurable outcomes. These fellowships are designed to help individuals implement and embed simulated clinical scenarios in training, everyday clinical practice and improve patient care and safety. The fellowship included monthly study days to develop leadership skills, project guidance and strategic strategies to embed simulation.

The project has been a major learning curve professionally and personally. I have learnt methods and techniques to improve my leadership skills and help move simulation training forward within the Trust. The most important lesson I have learnt from this project is to inspire and motivate others to work with me by developing and improving the stroke patient's journey. I have met some fantastic role models and mentors that have encouraged and supported my personal and professional development.

Adapted from the ATMIST - NHS Clinical Advisory Groups Report (2010)

	Yes	No	Other Comments
Assessed for FAST			FAST
Age DOB Time			
Exact time? Witnessed? Last seen?			
Mechanism of injury: Brief clinical features Injuries Signs (Vital signs) Treatment required? Problems with Mobi-med call the Acute Stroke Unit? ETA to ED			

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An International Buzz at National Paediatric Simulation Symposium

Interest in the progression of simulation training in paediatric healthcare was evident at the busiest ever National Inter-professional Paediatric Simulation Symposium, sponsored jointly by Laerdal and ASPiH on 8th March 2013 in Manchester.

Thanks to the growth in global collaboration over the last few years, more and more inter-professional training programmes are being embedded, documented and shared in UK healthcare practice. The symposium, chaired by Professor Ralph MacKinnon, Royal Manchester Children's Hospital, brought together eminent keynote speakers from the UK, France and the US, workshop presenters from the UK and over 150 healthcare professionals seeking to further develop effective and consistent use of simulation in paediatric healthcare education. The day's presentations, workshops and poster walks provided the ideal platform for networking and knowledge-sharing. The event was alive with ideas, insight and collaborative plans for the future of simulation training in the workplace to improve patient outcomes.

In his research role Professor MacKinnon is currently the Research Group Chair for the Royal College of Paediatrics & Child Health Technology Enhanced Learning Committee with collaborative simulation research interests that include: inter-professional, in-situ (point of care) simulation; application of debriefing strategies from other industries and validation of simulation assessment and debriefing tools.

Welcoming the partnership of industry and the ASPiH community in organisation of this third national event, Prof. MacKinnon expressed his appreciation to Laerdal's MD Rosie Patterson of how the symposium numbers had tripled over the last three years. From the outset, Prof. MacKinnon set the tone for a vibrant and interactive symposium. Inviting collaboration on projects that would drive forward standardisation of simulation to help improve patient care, he urged delegates to immediately communicate their preferences for development of national simulation programmes.

The Road to Transformation

Dr Chris Kennedy, MD, Center for Excellence in Pediatric Resuscitation, Children's Mercy Hospital, Kansas City, Missouri, USA

Dr Kennedy is a paediatric emergency medicine sub-specialist and spent fifteen years as a simulation programme director in this discipline. Six years ago, he started the Centre for Excellence in Paediatric Resuscitation. His passion and experience in inter-professional simulation training shone through in a creative presentation of a series of programmes he had instigated. The facility, which serves a population of six million in the Midwestern United States, uses its 10,000 sq foot simulation centre for a number of uses.

> *"Now is the time for everyone to collaborate on a series of simulation programmes"*

"Five years ago," Dr Kennedy explained, "we identified the need to address a skills gap in team working.We had been carrying out twice-monthly training sessions that we thought were well-designed, but progress wasn't as expected. There was no standardised collaborative approach to situations that were outside of role responsibility; for instance obstetricians dealing with a sick newborn, or paediatricians dealing with a sick mother. We developed a new system with intensive focus and deliberate practice and invited leadership from the Department and the Institution to come and watch in order to gain buy-in and

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funding. We then began a new programme of in-situ training. The programme focused on situational awareness, quality and consistency of care of mother and baby, faculty design, roles and human factors as well as clinical knowledge and skills. We extended sessions into weekends and nights. Bringing students in for a training exercise at 4am has its benefits as emergency situations do occur in the middle of the night, and it's important to be practised in worst-case scenarios. Gaining acceptance was a difficult process but now students have been able to see the benefits of transferring learnt skills to the workplace, the training sessions are incredibly popular and are packed every time."

Simulating for Best Practice

Dr Kennedy also used the simulation suite to test the suitability of a brand new facility within the hospital. Three separate room designs were set up with different equipment placements. After thirty hours of trauma simulation, the most effective aspects of each set up were taken from the simulated environments and installed in the new room. This approach not only enabled most efficient room design but immediate staff familiarity for the actual facility.

"The team runs an extensive multi-disciplinary 'point of care' simulation programme and has trained over 600 staff using total immersion high fidelity simulation"

Talking about the value of debrief, Dr Kennedy stated that video was vital to determine skill gaps, reflect on performance, identify needs, learn from errors and reflect on inter-professional team and individual behaviours. To improve team performance and increase skills, abilities and confidence across all disciplines, the simulation team ran (and continues to run) a regular, inter-professional scenario based programme that affords students and practitioners the opportunity to practise advanced life saving skills such as airway management, shock recognition, transfer readiness and non-accident trauma recognition and management. Eighty percent of training is now done in situ.

"The value and regularity of these inter-professional sessions speaks for itself," Dr Kennedy added. "We have had a dramatic reduction in time spent on initial assessments and performance time for ABCDE checks and treatments. The success of the programme has led to another facility now having the ability to accept trauma patients, critical patients and ambulance handovers."

A Need for Published Data

Dr. Steve Hancock - Yorkshire & Humber Children's and Neonatal Simulation Network

Dr. Hancock has been a Consultant in critical care at Sheffield Children's NHS Foundation Trust for 10 Years with the last 3 years spent full time as lead consultant for Embrace, Yorkshire & Humber Infant & Children's Transport Service. Active in simulation education for 8 years, he is a co-chair of the International Paediatric Simulation Society education committee and a founding member of the Yorkshire & Humber Children's and Neonatal Simulation Network.

Referencing various current and past collaborations, Dr Hancock prioritised the need for more published data on patient outcomes to unlock NHS funding for inter-professional simulation. "We are required to demonstrate data that confirms improved practise and improved patient outcomes as a result of simulation training. As a result of our networking at symposiums and conferences such as this, there is a lot of work going on internationally. Industry is supporting focus groups and healthcare professionals to speed up the embedding of simulation training within all our work environments, and we are seeing results," he said. "It's fantastic to see the fruits of our labour and there is a real buzz about the future, but it's a slow process. Now is the time for everyone to collaborate on a series of simulation programmes, deliver a set of skills, transfer them into practice, document the findings and publish them so that we can all achieve our goals. However, we mustn't lose innovation through standardisation, so it's important for everyone to share best practice and then keep developing new ideas and ways of incorporating simulation into healthcare."

Workshops and Networking Platforms

A series of eight intimate and highly interactive workshops were held over the course of the morning and afternoon. The workshops were devised to share knowledge, answer questions and inspire programmes, taking into consideration a wide range of platforms, requirements, budgets and levels of experience.

'Simulation Instructor Training and Establishing Point of Care Simulation Programmes across Neonatal networks' was presented by Dr Jonathan Cusack and Dr Joe Fawke, Co Directors of the Leicester Neonatal Simulation Team. The team runs an extensive multi-disciplinary 'point of care' simulation programme and has trained over 600 staff using total immersion high fidelity simulation. They have run 18 of their popular neonatal simulation instructor courses and trained over 200 instructors from across the UK. This has included developing regional multi-disciplinary simulation programmes across 8 Neonatal Networks. The joint workshop covered identifying barriers and solutions to setting sustainable local simulation programmes, consideration of the training needed by high fidelity point of care simulation instructors, practicalities of establishing network-wide point of care programmes, funding issues and post-debriefing feedback.

Dr Chris Kennedy, MD, Center for Excellence in Pediatric Resuscitation, Children's Mercy Hospital, Kansas City, Missouri, USA

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Role play scenario in Making Simulation Sustainable workshop

Keeping it Real

A presentation on Ward Simulation was delivered by Neal Jones from St Helens and Knowsley Teaching Hospitals NHS Trust, Suzanne Gough from Manchester Metropolitan University and Mark Hellaby, North West Simulation Education Network Manager. Discussions included planning and facilitation of a ward based simulation exercise, the power of video in debrief, and tips for successful evaluation of a multi-professional simulation intervention.

"Talking about the use of high fidelity equipment, Mark Hellaby extolled the use of wi-fi manikins like SimMan, which can be wheeled into an emergency scenario as would a real-life patient"

During the session, Neal Jones advised that simulation exercises were excellent for learning others' roles and addressing practical facility problems in a ward based scenario but that trainers should be mindful of warning other patients and families of the training prior to the exercise. Talking about the use of high fidelity equipment, Mark Hellaby extolled the use of wi-fi manikins like SimMan, which can be wheeled into an emergency scenario as would a real-life patient, but pointed out that in planning stages, simulation leads must take into consideration use of consumables and equipment that may otherwise be needed on the ward. The power of video – with live tracking or in playback mode - in debriefs was high on his agenda for successful reflective training in clinical and non-clinical skills education and assessment, and when asked about data collection, explained that the culture of simulation training and video feedback has become so embedded within the training system that it was now widely acceptable.

Dr David Grant, Bristol Paediatric Simulation Programme and Professor MacKinnon delivered a workshop on Structured Approach to Successful Multi-professional debrief. In 2007, Dr Grant was appointed as Director of the Bristol Paediatric Simulation Programme and has led his talented team to develop the programme to one of the leading Paediatric Simulation programmes internationally. He is actively involved in International and National education and simulation through his roles as Vice President International Paediatric Simulation Society, RCPCH Simulation Lead, Associate Dean of Simulation, Severn Deanery, Co-Chair UK Paediatric Intensive Care Education and Scientific Committee and Chair UK Paediatric Intensive Care Education Learning Simulation Special Interest Group.Dr Grant's simulation interests are development of sustainable simulation networks, faculty training and development, curriculum development (particularly point of care curriculae) furthering international collaboration and research and translational simulation research Learning objectives in this workshop covered translation of objective performance gap, using good judgement, implementation of a safe structure that guaranteed confidentiality, the art of active listening and transition of learned skills and behavior to clinical practice.

The Power of Negotiation

Professor Debbie Rosenom-Lanng, Royal Berkshire NHS foundation Trust Informatics Research Centre, Henley Business School, University of Reading ran a workshop on 'Making Simulation Sustainable'. Her enthusiasm for simulation has led to the successful introduction of over thirty courses across the Trust. Other roles include: Director of Health Quality Improvement and Revalidation Lead, RBFT and Visiting Professor in Health Informatics, Informatics Research Centre, Henley Business School, University of Reading. Her main area of research is Human Factors, which is also the subject for her recently commissioned books with Oxford University Press (publication 2013).

Prof. Lanng's experiential workshop identified and aimed to familiarise delegates with the framework of negotiating skills, examine different ideas for recruiting a sustainable, multi-professional faculty, consider models for administrative and technical support staff and explore ways of securing funding for simulation. During a lively session, delegates were advised to consult with each other in a live scenario that would involve two people playing the role of a Director of Finance and two playing the role of Simulation Lead, requesting funding. Objectives were set with feedback and guidance on best practice in negotiation, such as using buzz-words including capital, one-off payment, revenue, savings, budget, income generation and she also recommended requesting immediate written confirmation that would secure the funding after the meeting. Re-enforcing the requirement for more published data to be available and shared, Professor Rosenon-Lanng said, "It's important to present information as finance departments and institution directors expect it be presented; so preparation on research, expenditure, desired outcomes and data provision is vital in order to secure the right level of funding."

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Children as Simulated Patients

'Engaging Clinicians in Improving Care for Severely Injured Children' was a programme facilitated by Phil Hyde, Carrie Hamilton, Kate Pryde, Kim Sykes, from the SNAPS group at the University Hospital Southampton. A workshop presented the successful use of children as simulated patients in a regional trauma education programme.

Kim Sykes explained, "Using children as simulated patients engages clinicians at a fundamentally different level than previously experienced in simulation, enabling clinicians to bridge the gap between simulation and real life clinical work." Participants brainstormed the opportunities and challenges in creating a similar hybrid simulation programme in their own environment. The workshop was extremely well received by the conference, with very many questions from the packed room.

Preparing for Bad News

In a workshop about multi-professional/inter-professional simulation in neonatology, Dr Charlotte Bennett, Neonatal Consultant, John Radcliffe Hospital, Oxford, and Dr Ruth Gottstein, Consultant Neonatologist, St Mary's Hospital, Central Manchester Hospitals NHS Foundation Trust engaged the audience in their experience and tips for curriculum mapping, responding to patient safety alerts or critical incidents, inter-professional simulation training with nursing, obstetric and midwidery teams and simulation in the transport environment. Dr Bennett extolled the provision of training that gives students experience of rare scenarios, including palliative care and the death of a child. "With high numbers of trainees, it's impossible to give everyone real life experiences of best practice in emotional scenarios. Simulation is crucial to teach these skills to give them the confidence and to give patients and their families the best quality of care."

Talking about the challenges of inter professional collaboration, Dr Gottstein said, "A recent study showed that 98% of doctors thought simulation was useful, whereas only 55% of nurses agreed, so we need to address that. Simulation exercises need to be geared with everyone's needs in mine. For example, in an NICU scenario, neonatal nurses are allowed to practise human factor and some clinical skills before doctors enter the room, when they then do an SBAR handover and continue to work as part of the team. It is important to include representatives from each learner group in the development of a simulated scenario and in establishing the learning objectives of each. When using simulation to assess pathways of care it is sometimes helpful to involve a wide range of professionals including ward clerks, porters, health care assistants, radiographers and blood transfusion labs."

"With high numbers of trainees, it's impossible to give everyone real life experiences of best practice in emotional scenarios. Simulation is crucial to teach these skills"

The OSAD System

Dr. Jane Runnacles, Paediatric Specialist, Registrar, Kingston Hospital NHS Trust and Dr. Libby Thomas, PhD student, Simulation and Education, KCL ED SpR, London, presented a workshop on a Practical Approach to Paediatric Debriefing, using the OSAD (objective structured assessment of debriefing) tool. The system provides a scoring mechanism for assessors and de-briefers. Key points included understanding the context of the ASPiH/HEA Simulation Development Project, appreciation of the progress and intended outcomes of the project, recognition and example sharing of good practice and identification areas for further development.

"Running a scenario is all about being a good facilitator. Learning objectives need to be set at the outset"

Amid a lively group discussion and debate, Dr Runnacles explained, "Running a scenario is all about being a good facilitator. Learning objectives need to be set at the outset, with confidentiality guaranteed, and then after the scenario, the whole group should be encouraged to reflect on decisions and actions. Then finally, learning should be applied in practice. The aim of the OSAD scoring system is to help standardise formative and summative assessment, but it can also be used in 'train the trainer' exercises. It takes a little getting used to, but it provides essential data for progression and improvements in practice and future scenarios. I would encourage everyone to share the system and send us feedback."

Poster Walk

New for this conference, a series of poster walks looked at successful schemes in various hospitals. Practitioners from a range of healthcare departments had anonymously submitted posters for discussion in front of delegates at the symposium, and the author of the winning poster – Child's Play from Coventry University was presented with a limited edition Laerdal neonatal simulation manikin trophy.

Sharing News from Paris

Flavouring the symposium with news from Paris, Dr Thomas Baugnon, Staff Anaesthesiologist, Anaesthesiology and Paediatric Intensive Care Unit, Necker Hospital for Sick Children, Paris gave the last keynote

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Ward Simulation Workshop

presentation of the day. As an anaesthesiologist, Dr. Baugnon's clinical activity is shared between anaesthesia in neurosurgery and paediatric intensive care. As a simulation instructor, Thomas works at the Simulation Center iLUMENS, Paris Descartes University.

"Bad news is subjective," he began. "It occurs daily for some physicians but for parents it's probably the first time. It is stressful, complex and for physicians, the sensitivities involved in delivering bad news to a parent of a child, are often a lot harder than in the situation of the family of an adult as parents can feel responsible or have unresolved feelings about their own death, let alone the death of their child, who they have expected to outlive."

"Students learn better when they are participating in active learning,"

A study of 104 resident post-graduates in Boston, United States showed that only 27% were confident at giving bad news to parents but 99% agreed that learning to communicate with parents was a priority. A similar study in the UK revealed a higher percentage of 55% but Dr Baugnon noted that this could be because in the UK, generally doctors are slightly older and therefore have more life experience.

"Students learn better when they are participating in active learning," he commented. "There is no specific model for delivering bad news in paediatrics. In real life, it's often unpredictable and errors often include poor communication. Using simulation, practising difficult news delivery is predictable, safe and reproducible. We can bring in actors, use high and low fidelity equipment and introduce all kinds of scenarios to help students learn. One good method is to simulate a simple scenario using a manikin, which helps to precondition students to what may happen in real life and standardise protocols, and then without a debrief in between, run a repeat scenario using actors as parents and other family members, which introduces the human and emotional element of the situation."

"After a scenario in which the child had fallen down the stairs and later become comatose, it was interesting for everyone in the debrief to see how different students dealt with updating parents of a child's condition – over the telephone and in person. When the father arrived in the family waiting room, some sat opposite him to break the news whereas some sat next to him and used touch for extra support, and we discussed best practice for this type of situation. In other scenarios, we used actors to glean information from nurses about the condition of the child after the doctor had left the room, which helps reinforce the importance of inter-professional training.

Closing the symposium with Ralph MacKinnon, ASPiH President Bryn Baxendale commented, "Today was a fantastic demonstration of collaboration between industry and ASPiH in support of an important and leading community of educators in healthcare."

Prof MacKinnon thanked everyone for attending and re-iterated the theme of the meeting to collaborate inter-professionally both in simulation education and research, to improve the quality of patient care and outcomes in the neonatal and paediatric patients we look after.

The ASPiH Annual Conference 2013 will be held at the Majestic Hotel, Harrogate on 19-21 November 2013.

Rosie Patterson, Managing Director, Laerdal (UK), Professor Ralph MacKinnon, and Dr Bryn Baxendale, ASPiH President

Pre Hospital use of Scenarios in Paramedic Education

David Halliwell – MSc. Paramedic, FIfL, Lizzie Ryan, MEd, MBA, MSc, RN, FIfL, Paul Jones, BSc (Hons) Cert Ed Paramedic, Rob Clark, MSc. Paramedic, Clinical Training Manager, South Western Ambulance Service NHS Foundation Trust

The Training Team in South Western Ambulance NHS Foundation Trust (SWAST) has evaluated various methods to decrease the numbers of failures within student paramedic practical examinations, and has developed strategies for enhanced student experience and performance. This model developed uses a case study approach, providing a new paradigm for teaching emergency care that ensures increased performance.

Pre-hospital care includes the movement of patients and creation of access to patients, who may be trapped or the practitioner may be required to work in a confined space when delivering care (fig. 1). The new model focuses on the increased role of tutor knowledge and the enhancement of the importance of understanding logistical concerns in pre-hospital care. It consists of four stages that should be considered by tutors before their students are exposed to clinical scenarios for educational purpose. The stages used in paramedic education are relatively unique since the teaching and understanding of logistical considerations are not necessarily a significant concern to other clinicians from wider health disciplines.

Stage One: Technical Competence

Before running any clinical scenario or simulation the tutor must ensure that the student has the technical competence and clinical knowledge to perform the skill or task, otherwise the scenario will be setting the student up to fail, which is a pointless exercise where we would not be achieving our objective. This can be referred to as the 'How', 'Why' and 'Who said' of healthcare. Understanding the 'how' and 'why' of healthcare is vitally important and the tutors' role in ensuring **accuracy of information** and having the **ability to transmit** the information in a method that is clearly understood by the student when teaching any information is key. The 'who said' of healthcare involves understanding the underlying and technical evidence that underpins the profession. This is sometimes lacking in UK pre-hospital care and it is only in recent years that UK Paramedics and ambulance practitioners have been undertaking clinical research. Advances are being made, however, and existing paramedic resources are now being updated to include evidence bases; for example, the revision of Caroline (2012).

The Tutors Technical Competence: Cascade training is often the method of choice in process changes because it is seen as an efficient way of delivering education or training without having a negative effect upon operational cover. New pieces of equipment are introduced using cascade type training with many other techniques employed that may fall short of current best practice, and not enough attention is given by tutors to actually take the time to understand the evidence base behind a particular skill that they are teaching, preferring to teach the information that they themselves were taught, causing classical communication and understanding issues. The pre-hospital environment is constantly evolving due to new technology and changing medical information and research and tutors need to identify their educational needs and then, using evidence-based practice, fill any gaps that they identify. They must be encouraged to attend conferences and network; however, opportunities for paramedics to learn skills from experts in their field are often limited due to lack of active researchers in the UK.

The Students Technical Competence: Competence in the pre-hospital arena is not just about knowledge and skills, it is about developing the ability to meet demands in complex situations that require the students to draw on psychosocial resources including the skills, attitudes, practical and communication skills required. The tutors need to consider the knowledge and skills that the student has

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using an individual training needs analysis approach, as well as the traits of the student, their attitudes (personal and social values), self-control and self-confidence. If the student does not believe they can do the task this could impact on their performance and its sustainability, and will impact on healthcare provision and adherence to guidelines etc.

"Pre hospital care is a unique part of medicine since it involves many logistical considerations"

No two students are alike, each will have their own individual levels of motivation and attitude and will respond differently to different methods of teaching; something the tutor needs to be aware of. The learning styles, the way the student synthesises the information taught, the approaches to learning (surface, deep and strategic) and intellectual development of the student must be taken into consideration (Ryan and Halliwell 2012, Felder and Brent 2005). The tutor does not need to individualise the learning but that they need to be aware of the differences and adapt to meet them using a balanced approach that can attempt to match the students' preferences.

Stage Two: Practical Application (Manikin Competence)

This involves reviewing the creation of muscle memory through skills practice. This concept is referred to as manikin competence, but this descriptor can change dependent on the task or activity being learnt. This occurs once the student has the technical ability and understanding, and it is preferable to allow them the opportunity to practice their technical skills on manikins or skills trainers. To achieve this stage the tutor must first ensure that they know how to use the simulation equipment. This stage creates physical dexterity, muscle memory (Krakauer and Shadmehr 2006), and assists with the building of mental bridges. It can be used to decrease the need for attention and creates maximum motor and memory system efficiency; for example, practicing Cardio-Pulmonary Resuscitation (CPR) in order to gain a feeling for the correct depth and rate of chest compression.

Common Problems with Practical Application Competence: There is often not enough time allowed for the preparation phase of practical application competence. Students are introduced to scenarios mirroring real life too early in the training process leading to student failure, as they still lack technical skills, haven't learned the practical competence and still lack the ability to put all the skills learnt into a skill set.

Simulation using manikins should offer the opportunity to gain and assess skills though repeated practice in a safe environment (Kneebone 2003), and there needs to be objective measures of the students' skills and abilities to test the skill in a safe environment where patient safety is not at risk. Simulation should offer a safe and student-centred approach to learning through repetition, but it must be underpinned with knowledge and a professional attitude, as well as knowledge of how to use the simulation equipment. Without time to practice skills muscle memory cannot develop (Krakauer and Shadmehr 2006), as this can only be enhanced with time and practice. In addition, the new skills need to be refreshed so they remain in the memory, and the learning process should involve a two way process where the tutor provides the conditions under which understanding is possible and the student takes responsibility for the learning opportunity (Rogers 1983). There needs to be a relationship between the practical training and real life application of clinical skills so the student can apply what they have learnt without having to 'unpick' it because it was too complicated or lacked reality (Kneebone 2003).

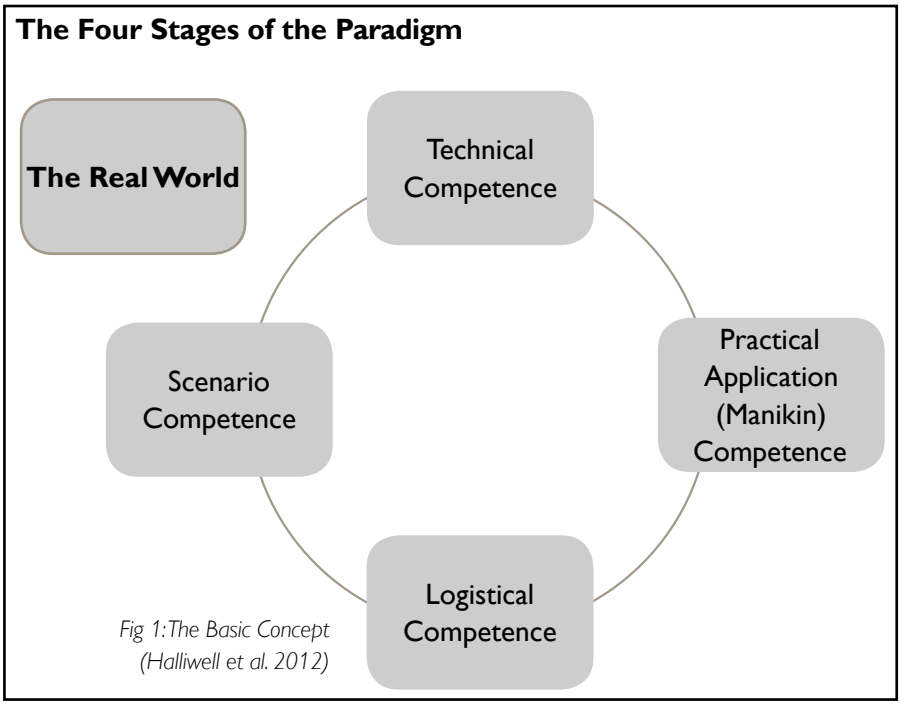

Fig 1: The Basic Concept (Halliwell et al. 2012)

Stage Three: Logistical Competence

Pre hospital care is a unique part of medicine since it involves many logistical considerations that students in other aspects of care do not need to worry about. They include: the need to create **space**; for example, the practitioner may need to **move** a patient out of the toilet where they have collapsed, creating **access** rather than trying to manage a cardiac arrest in a confined and dangerous space. There are a number of questions we need to consider including the facets of moving the patient as regards the patient's **physiological status**, and the **clinical effects** of moving the patient post arrest and should we sit a ROSC patient in a carry chair etc.?

Common Problems with Logistical Competence: Logistical issues are often used in scenarios to create difficulty and this can detract from the ability of the student to perform the skills that the scenario was set up to review. This area should be considered in all scenario teaching to support the student in considering and rehearsing the logistical considerations that may occur. These can be as simple as making more space around a patient or where to place equipment at a cardiac arrest, or can be as complex as how to extricate a patient from a given area.

A 2-3 minute review of logistics with the student prior to them entering any given training scenario is recommended, with a discussion about all logistical issues with the tutor before the actual scenario begins using a simple question: 'can you envisage any logistical problems with this scene'? A logistically 'SMART' process could be used as follows:

Continued on page 11

Continued from page 10

- **S**pace: Can more space be created?
- **M**ove: Can things be moved? Can the patient be moved?
- **A**ccess: How much of the patient do you need to access?
- **R**esources: Where are you going to place your equipment? Why?
- **T**ransport: What will your method of transport be? What are the clinical effects of moving the patient? How will movement affect the patient's physiological status?

"Simulation should offer a safe and student-centred approach to learning through repetition, but it must be underpinned with knowledge and a professional attitude"

Stage Four: Scenario Competence

Once the student has the technical and manikin competence or practice and understands the logistical aspects of patient care they are ready to face the more complicated aspects of scenarios. This involves being challenged by 'real world' factors (fig.1), such as environment; for example, light, dark, heat; the manikins being replaced by real people; delivering care whilst working at height or in low O2 atmosphere etc.

Common Problems with Scenario Competence: Scenarios are often set without a clear understanding of the actual learning objective (Riley 2008). Using observation and video review of over 100 clinical scenarios SWASFT has shown that the scenario often involves the assessment of a wide range of skills beyond those that were probably intended by the designer of the scenario, including assessment of clinical skills, communication, and decision-making. In many cases the scenario fails to have the desired result due to logistical reasons including: setting equipment up in the wrong place or not creating space sufficient to access the patient. Pre-hospital care covers 'any patient, of any age with any condition, in any environment and location'; often in scenarios students can face assessment in all of the above, which can be overwhelming for the student. By giving the student the opportunity to think through the logistics, as one would do in a 'seen examination' at university, they are better able to focus on the clinical aspects of delivering higher quality care.

Scenario Competence and the suggested application

As the tutor develops the scenario to practice a skill and develop the students' skills and performance they need to consider all the aspects discussed above. The scenario needs to have a structured approach that encompasses all the areas of concern as well as considering the:

1. **Technical Competence** ensuring that: the tutor has the evidence base required and the student has the skills, knowledge and aptitude for the scenario they are about to complete;
2. **Application (Manikin) Competence** ensuring that: the student has the time to develop the skills and coordination (muscle memory), required and that they have been able to familiarise themselves with the equipment they will be using
3. **Logistical Competence:** involving the creation of space to work in; ensuring that the patient and their surroundings can be moved to allow access to the patient; knowing the correct place for the equipment and how the patient will be transported.

In developing the scenario we need to consider the three modes of thinking (Dieckmann et al. 2007), and ensure that we can match the learning outcomes required to the 'Real World' (fig.1) including the:

1. **Physical Mode:** including the things that we can measure in fundamental physical and chemical terms, e.g. equipment, logistics. The tutor needs to adjust the scenario to include the potential external factors and to provide reality in a safe setting, allowing the student to develop their skills in a number of reality scenarios to develop their muscle memory with the support of the tutor.
2. **Semantical Mode:** encompassing: the technical aspects; the information provided as part of the briefing; the student's knowledge and concerns and concepts and their relationships; the application of theory to practice and the development of the decision making process (Ryan and Halliwell 2011). This includes the theory behind the practice and how it is communicated (the way the student does things like taking a pulse and what they do if it decreases). This includes the type of manikin required and whether the student has been trained in its use.
3. **Phenomenal Mode:** including the fact that the participant experiences the scenario as a complex real time situation (The Real World in fig. 1), interacting with it; but also accepting that it is an educational event set up to simulate a 'real time' scenario. The student is assigned their role within the scenario and feels confident about that role and the interactions involved in it, e.g. the assistant practitioner. They are able, with time, to develop their coordination (muscle memory) and hand-eye coordination, as well as their priorities about safe and unsafe, normal and abnormal; their values.

The tutor must accept that the scenario is dynamic and will change depending on the introduction of 'reality' and the form that it takes, the differing learning needs and knowledge base of the of the student, the stage in the student's learning process and so on (Dieckmann et al. 2007).

There is more information in the full article with a suggested model of application provided. The full article can be downloaded from the Laerdal website: ***http://www.laerdal.com/gb/News/49140852/Pre-Hospital-use-of-scenarios-in-Paramedic-Education***

"No two students are alike, each will have their own individual levels of motivation and attitude and will respond differently to different methods of teaching"

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Resuscitation NEWS

Realistic BLS and ILS Training on a Resuscitation Officer's budget

Rob Morrison, Resuscitation Services Manager, Darent Valley Hospital, Dartford & Gravesham NHS Trust

This article explores the possibilities of adapting a traditional resuscitation training room into a low cost simulation/skills suite.

We all now know the benefits of simulation in healthcare. Most NHS Trusts have invested considerable amounts of money into developing onsite simulation suites to allow more healthcare staff to have a simulation experience. Funding for these facilities is often heavily subsided by local deaneries and hospital charities. NHS budgets assigned to resuscitation services are usually not adequate to fund the traditional simulation suite that most of us are familiar with. Resuscitation Officers have excitedly watched or been involved with the development of their Trusts simulation suites but for routine training, we end up back in our training rooms, which for most of us are more like classrooms and do not represent real clinical environments like those that our simulation suites replicate.

Simulation experiences often involve many resources in the form of a faculty and clinical equipment but just being in a simulation room can make everything feel different and this is mainly due to the realistic clinical environment that the room represents. Evaluation forms from simulation suite courses showed me that staff found learning in this environment beneficial as it helped reinforce key skills and processes, making the whole experience clinically realistic.

I could see the benefits for performing routine resuscitation training in realistic clinical environments. To do this I started delivering more in situ resuscitation scenarios in clinical areas but this proved difficult due to the demands and interruptions that occur in real clinical environments. I then tried booking the simulation suite but struggled setting things up on my own because the traditional simulation faculty could not help me with the routine resuscitation training. I was now becoming frustrated with the inability to deliver my training to the standards I now wanted. It was at this point I started to look at my own training facilities, which consisted of a smart board, posters, chairs, resuscitation trolley, bed and manikins. I decide to adapt these facilities.

My aim now was to make part of my room look like a resuscitation bay in our Emergency Department. The problem was I only had a limited budget. The next problem was I only had one room and a stock room. I could not lose aspects of the traditional classroom because it is needed

for theoretical teaching and debriefing. I started to think about a dual-purpose room and divided my room into two sections. Half would be clinical the other half a classroom. To make the clear divide carpet was laid on one side and a vinyl floor used for a ward area was laid on the clinical side. Then I needed to make the wall behind the patient look real. Installing real piped gases was financially out of the question but I contacted the company that installed the real hospital systems and they were happy to install a mock set up that looked identical to the real thing. The price for this was very reasonable and the result was fantastic. Staff could now simulate the pulling of an emergency buzzer, attaching oxygen or air and suctioning at a required pressure setting. Just this was a good starting point and it helped reinforce the basics during training. It highlighted that staff often forget things under pressure. For example, sometimes no one pulled the buzzer even though they were on their own in a side room and sometimes they did not connect oxygen or they connected it to air. When highlighted to the staff they were surprised and commented that they would now always remember this point as it was reinforced in such a real way.

"I could see the benefits for performing routine resuscitation training in realistic clinical environments"

I started using my Laerdal Resusci Anne Simulator as my routine manikin for training staff. This manikin is perfect for basic and advanced resuscitation scenarios. Most of my simulated scenarios required a cardiac arrest and only a brief period of the patient being acutely unwell pre or post arrest. The Resusci Anne Simulator does everything that I want and more. My Laerdal regional manager explained that additional extras could be added to become a near high fidelity style manikin. For example purchasing a simple wireless microphone allowed me to talk through the microphones in the manikins head and act as the patient. Buying a simple high street compressor and connecting a piece of tubing allows continuous spontaneous breathing.

To increase the realism of my scenarios further using my Resusci Anne Simulator, I am in the process of upgrading the VitalSim unit to the new SimPad, which is a much more advanced operating system giving me greater control and flexibility in running scenarios. SimPad will control simulator vital signs, give me real time CPR feedback and many other functions relevant to resuscitation training. Additionally, running the scenarios with the SimPad patient monitor will complete the student's learning experience making them much more independent in managing the patient. I view the patient monitor as an essential bit of equipment. I have previously used downloaded applications on my tablet device. These can make tablet devices appear as patient monitors but the downside is these cannot link up with the manikin. This makes simulations confusing because you will require two separate control panels. For resuscitation purposes this upgrade will make my manikin as good as the high fidelity manikins but at a much lower cost.

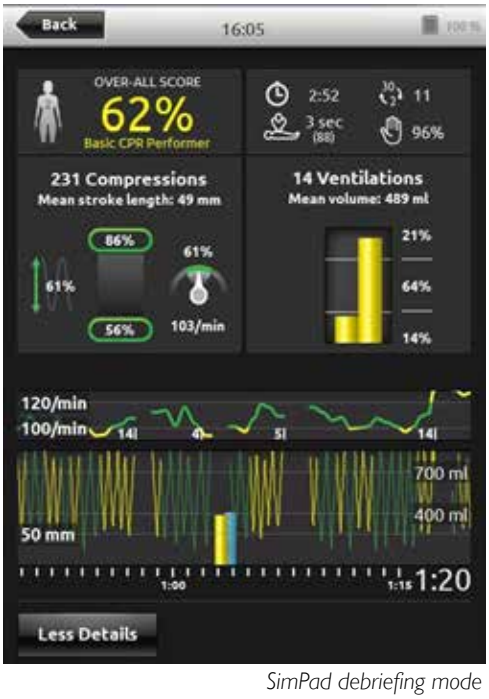
"My classroom has become a purpose built resuscitation/ simulation room and I enjoy every minute that I teach"

I have started to devise high fidelity simulation enhanced ALS scenarios for staff that require this level of training and whenever possible integrate the technology into the more basic training sessions. Everyone comments on how much better the training is.

Finally, to improve my advanced course and make it similar to a real simulation lab I have spent a little more money. My building colleagues have cut out a hole in the wall and added a one-way glass between the training room and my stock room. This allows me to leave the room and watch on the other side, which stops me spoon-feeding everything to the candidates. My stock room has now developed into a mini control room. A baby monitor helps me continuously hear exactly what is happening on the other side of the wall as I use my manikin and monitor remote controls. If a candidate needs expert help, they call me on a two-way intercom that I answer in my control room. We then have a detailed debrief in the classroom section of my training room.

I now feel that my classroom has become a purpose built resuscitation/ simulation room and enjoy every minute that I teach, especially when I see how the candidates respond and learn. I have found some candidates are volunteering to help on my courses because they enjoy what the room has to offer and the fun of role-playing different clinical roles on my advanced clinical resuscitation course, which I now run.

SimPad CPR main screen



SimPad debriefing mode

Product FOCUS

CPRmeter™

... for quality CPR every time

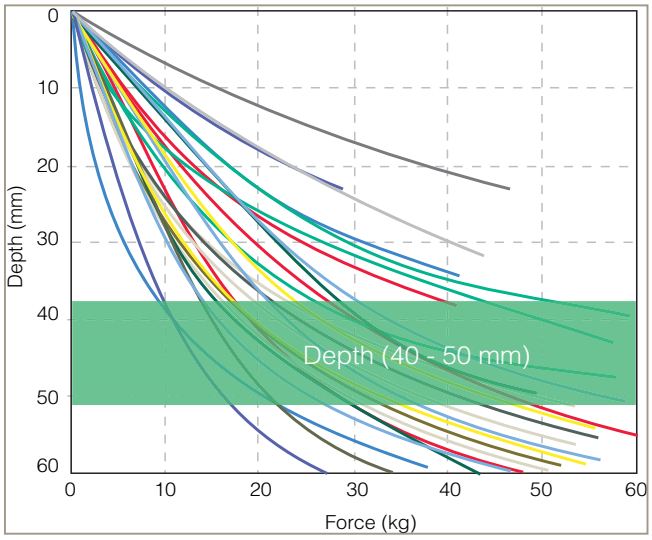
It is widely accepted that well performed external chest compression (ECC) is pivotal for improved outcomes in cardiopulmonary resuscitation (CPR), yet data continues to be published showing performance to be universally variable and often poor in terms of compression depth, release and rate - the key parameters which define Quality CPR.

Quality CPR matters

With lack of practice, CPR skills retention fades and yet the trained rescuer knows that when faced with a sudden cardiac arrest patient, time and optimal therapy is critical for survival. Quality CPR combined with early defibrillation is essential to improve survival.[1-3] Guidelines[4-5] provide direction on a number of parameters that define Quality CPR. However, the challenge for all emergency healthcare providers remains.

How can guidelines compliant CPR be delivered consistently throughout the whole chain of survival?

Patients Vary[6]



The 2010 Guidelines recommend compressing the patient's chest at least 5cm. However, knowing when you have reached 5cm is difficult. As **chest stiffness** varies, some patients need much more compression force to meet the same guideline. This complicates matters even further. In fact, Tomlinson et al (2007) showed that patient's chests require a compression force ranging from 10-55kg force to reach the minimum compression depth. [6]

The CPRmeter™ has two embedded sensors: one measuring acceleration and another measuring force. These advanced measurement technologies guide and help the rescuer to deliver guidelines compliant chest compressions regardless of the chest stiffness of an individual patient.

Good depth release and rate

The CPRmeter™ helps to ensure Quality CPR

Regular CPR training will always be important to prepare the trained rescuer, but when the real emergency situation can be both dramatic and stressful, how can optimal CPR be assured? The CPRmeter™ helps to guide the rescuer to deliver quality CPR by providing dynamic real-time feedback on the essential parameters of CPR. Max Skorning et al. concluded that the visual feedback of the CPRmeter™ device significantly improved ECC performance (compression rate and depth) by healthcare professionals in simulated cardiac arrest and that most participants found the device easy to use. [7]

While survival rates from sudden cardiac arrest have remained virtually unchanged for 25 years, recent studies have shown that significant improvements in patient outcomes are possible when healthcare organisations implement systematic QA and QI initiatives.[8-9]


Compress deeper


Release between compressions


Compress slower

Inactivity time

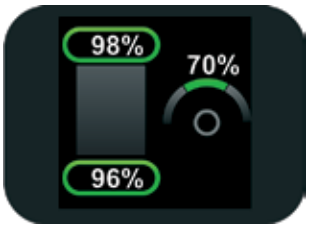
Compression counter

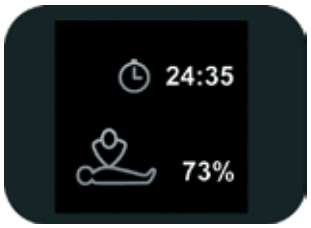
Quality Assurance + Quality Improvement = Improved Patient Outcomes

Using Laerdal's latest generation of Q-CPR technology, the CPRmeter™ records and documents CPR performance. This opportunity to debrief events objectively is essential to improve and establish best practice to help improve patient outcomes.[8-9]

Q-CPR Quick Review

The opportunity for trained responders to immediately self-evaluate their CPR performance is both an empowering and motivating feature of the CPRmeter™. This can help reassure that optimal CPR has been delivered or highlight areas for improvement for discussion during the de-brief.





Q-CPR Quick Review events statistics

Q-CPR Review

An optional Micro SD card can capture comprehensive CPR event statistics for in-depth evaluation and debriefing. A quick download into the Q-CPR Review software enables the user to:

- Create a graphical view of a CPR case for debriefing
- Create and print an individual CPR Report Card
- Compile CPR event statistics for multiple cases

The Q-CPR Review software provides the foundation for a successful CPR quality improvement programme.

For further information about the CPRmeter™ or to arrange a demonstration, please contact our Inside Sales Team on 01689 876634 or email sales@laerdal.co.uk

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EDUCATION THROUGH
Simulation
and Resuscitation
News

Dates for your diary

16th September 2013
York and Humber Clinical Skills Network Conference
Bradford Royal Infirmary

25th –26th September 2013
The Emergency Services Show
NEC, Birmingham

3rd October 2013
SUN Meeting: The transition from simulated practice to clinical practice in nurse education
Northumbria University

19th – 21st November 2013
4th ASPiH Annual National Conference
Majestic Hotel, Harrogate

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: helen.crofts-bolster@laerdal.co.uk

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