Breaking New Ground 2014

10 years
celebration overview

Interview
with Andrew Heasley

Earth
our next
CSDS Central
The Clinical Skills Development Service (CSDS) would like to introduce the first edition of the Simulation Training and Research (STaR) Magazine. Each edition will endeavour to provide readers with valuable simulation-based information and will explore various facets of CSDS business. We would like to highlight our stars and acknowledge the people that provide continued support to the service, allowing us to evolve each year.

We wish you all a safe and happy festive season and look forward to working with you all in the New Year.

A/Prof Marcus Watson
Executive Director
# Breaking new ground

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The Clinical Skills Development Service (CSDS) recently held an open day in celebration of these 10 years of service. The CSDS opened its doors to VIP dignitaries, the general public and the many simulation education providers who have been involved with the centre. It was an opportunity to reflect on 10 years of progress, as CSDS has developed into an international leader in healthcare simulation.

The day started off with a literal ‘bang’, as a scaffolding collapse scenario interrupted a speech by the Director of CSDS, Mr Dylan Campher. With simulated blood everywhere, moulage so real people were squeamish, and a few patients in need of treatment, help was not far away via the Metro South contingent of the Queensland Ambulance Service (QAS). QAS arrived in full flight just in time to help treat the patients.

The VIPs were ushered inside to find that the action had only just started. They were immediately immersed in the scenario, some providing urgent CPR and surgery to the patients, getting a first-person insight into the realism and high fidelity that has made CSDS very successful over the last decade.

Along with the scenario, there were plenty of other activities that intrigued and entertained the public and really showcased CSDS. A treasure-hunt-style ‘Quest’ gave people the opportunity to tour the centre and gain insight into some of the day-to-day systems. Participating visitors had to complete a variety of challenges including: using moulage to fake a wound; identifying medical equipment; honing their laparoscopic skills; and providing life-saving CPR. CSDS services, training and achievements were also brought to life in an interactive timeline on touch screen monitors, where people could navigate through time via an array of media, pictures and videos.

The celebrations wrapped up with praise for the service from Dr Paul Alexander AO (MNHHS Board Director), highlighting the importance of standardised healthcare education. The day as a whole showed what CSDS is capable of, and provided a great foundation for another 10 years of innovation in healthcare simulation.
AN INTERVIEW WITH DANIEL HOST SIMULATION EDUCATOR AND TECHNICAL SERVICES SUPERVISOR

You’ve been working with the Clinical Skills Development Service (CSDS) for 10 years now, what’s one of your earliest memories of CSDS?

I remember meeting with the CEO Phil Diver in block 9 at the “_kills Development Centre” someone had stolen the “S” from their signage.

Who do you look up to in the simulation industry?

Dr Richard Morris from the Sydney Clinical Skills and Simulation Centre. Richard is a true pioneer of Healthcare Simulation and Innovation in Australia.

He sparked my interest in simulation when he demonstrated a METI HPS manikin at a Royal Brisbane and Women’s Symposium 12 years ago. Richard’s clever innovations are available at SimCentral, Tools for Healthcare Learning.

What ‘top 3 tips’ would you give to someone starting out in the simulation industry?

1. Keep calm and stay curious.
2. Be innovative and look for opportunities to modify or create simulators to improve functionality.
3. Reflect and learn from your mistakes and don’t be afraid to share them.

You were a part of the move from the Hyperbaric chamber, can you explain some of the challenges you faced with this move?

We moved the equipment by loading up patient trolleys and pushing them across the connecting walkways.

The greatest challenge was setting up the METI HPS (Human Patient Simulator) in the new operating theatre. We needed a unique cable and equipment modification to link from our control room under the building and into the theatre. BOC had to install gas scavenging at my request as no one had considered that real anaesthetic gases would be used.

What aspects do you think have attributed to your success in simulation? Mentors, risks you have taken innovation?

I enjoy exploring, fixing and modifying technology and having the freedom to create, improvise and being ‘intrapreneurial’.

What do you see in the future for simulation?

I think the future lies in enhanced realism with innovative technology.
A FRESH LOOK FOR CSDS

Administration team, CSDS

In August this year, the Clinical Skills Development Service (CSDS) underwent a significant refurbishment to prepare for course demands into the future and complete some long overdue repairs.

It had been 10 years since any refurbishment work was undertaken at the Herston Skills Development Centre, so it was great to freshen up the centre. With a growing number of external companies regularly hiring our venue, we needed to provide increased seating capacity and maintain a professional image.

Audio/visual capabilities were enhanced, enabling complete live streaming between rooms across CSDS. This, along with the new layout of our breakout areas, gives us greater flexibility in room allocation.

We have also completed a number of repair jobs that were in need of attention across the Centre – years of wheeling beds, manikins and trolleys through our hallways had really left a mark on the Centre so we’ve been working with RBWH engineers to protect walls and other furniture and equipment in high-traffic areas.

If you haven’t been along to see the changes to our Centre recently – come on down soon! We’d love to catch-up with you and talk about training needs in your workplace.

EXTERNAL CLINICAL BOOKINGS

Administration team, CSDS

In the last quarter we have hosted events including the following organisations:

University of Queensland
Baxter
National Health Education and Training in Simulation
Australian College of Emergency Medicine
Queensland Department of Health
Royal Australian and New Zealand College of Obstetricians and Gynaecologists
Ikaria Australia
Play TV
WHAT’S NEW AT THE RECEPTION DESK?

Administration team, CSDS

At the Clinical Skills Development Service (CSDS), we are always looking for ways to make our courses run as smoothly as possible. To this end, we have been trialling iPad registrations for all course participants. So far it has had three distinct advantages:

1. Simplified record keeping - Using the VPass app we are able to record participant check-in times and keep their signatures as confirmation of accepting our terms and conditions. Using the reporting features on the back end of the app we are able to run attendance reports, review arrival times of participants and keep important information safely secured online.

2. Environmentally friendly - Many businesses today are becoming paperless and electronic registrations are helping us reduce our carbon footprint. For a one-day course with 12 participants, we used to print out privacy declarations for each participant, as well as a sign-in sheet. And that’s not to mention the filing and document control procedures that go behind record keeping. Now with an iPad – all that paper is gone and we still meet legislative requirements.

3. Relevant - Technology is everywhere at CSDS and it makes sense that our reception service is no exception. As tablet technology improves, we’re excited about the opportunities this may bring for our registration process. At the end of the day, we want all administrative processes as user-friendly as possible so you spend less time signing in and more time simulating.

If you’re interested in incorporating these services in your workplace, contact CSDS and we can help you on your way.
Simon, you’re the new face of the Clinical Skills Development Service, or as we often call it, CSDS. When did you start?

I started around the middle of the year. Before I landed this job I was an extra in a small animated film out of Colorado, so this is a real step up for me.

So tell me about this movie you’ve starred in for CSDS.

It’s an introduction to the centre that gets played before each of our courses. It’s something I’m pretty passionate about. People think it’s just about where toilets are… but it’s so much more than that. There’s important information about security, emergencies and that crucial reminder to turn off your phone. It’s got a bit of everything really: drama, comedy. Not so much romance, but that’s ok. I don’t know if I’d be comfortable with that kind of thing anyway.

Speaking of that, what’s the most embarrassing thing you’ve ever had to do on film?

Well, there’s this bit in the movie where everyone thinks I’m using the toilet… but I’m not. It’s pretty funny. I still laugh every time.

How do you feel about your new-found stardom?

I guess I don’t mind too much. Being recognised is both a blessing and a curse. People offer me things. Just last week I was offered a free pen. It was a shame to turn that down, but I don’t like to abuse my fame.

What’s your favourite thing about working for CSDS?

There’s too much to list really. The people. The state-of-the-art centre itself. But if I had to pick one thing, I guess it’s working in a place where innovation is valued and supported. That’s the icing on the cake for me.
What are the best things about your job?
The variety! Simulation can be applied to multiple contexts and training requirements. [My job] isn’t similar to a simulation centre where I would be running the same course over and over. I’m trying to meet the needs of the organisation, so there is always something different going on.

What aspects of your role do you find challenging?
Being under-resourced, from a human resource point of view. There are so many things that I would like to do and we have more than enough equipment it’s just finding the bodies to deliver the training that is difficult. It’s frustrating not having the human resources available.

Do you think that’s why CSDS have been such pioneers and why simulation is such an innovative field?
Yes, whenever I go to CSDS with a project, for example simulating the inside of a helicopter, they always come up with solutions to help me achieve the objective.

Do you agree that simulation has come a long way in the past few decades?
It has, it is certainly more mainstream now and has come a long way in the technical aspect, but I think that some of the main principles have always been there. The methodology and the foundations are much the same. It has changed a lot in how widely it has been adopted.

Name your top four simulation resources?
CSDS would be my top resource as far as equipment, expertise and technical help and support. Another great resource are the clinicians working in the hospitals, they can certainly provide a lot of useful expertise, which enhances the simulation training. Also the wider simulation community, talking to people at conferences and meetings and hearing about what other people are doing. Sharing ideas is very valuable. The inpatient population of a tertiary hospital like the Mater Children’s Hospital is also a smorgasbord of potential scenarios.
If you could go back in time, would there be anything you would do differently?

Yes, I underestimated how traumatic simulation training could be (to the participants). When we started we were so keen to do as much as possible and didn't realise how stressful it would be for people. Participants weren’t used to the scrutiny. We all thought it was good fun but underestimated how the participants were feeling.

I used to put a lot of emphasis on technology but now I realise that the instructor training is much more crucial than the technology. Being properly trained is way more useful than having the latest technology. I had my priorities around the wrong way, thinking that having the best technology would guarantee the best training but now I know that it’s the opposite. You need to have the expertise to guarantee the best training.

You moved Paediatric Cardiac Services from the Prince Charles Hospital to the Mater Hospital in 2008, what were the successes and challenges that you faced with that move?

Successes were that we made the service much safer and identified lots of risk[s] that wouldn’t have been identified with conventional planning. Simulation has been able to identify the risks before they were able to affect real patients. I feel confident that we prevented a lot of significant clinical incidents, possibly even death.

Challenges were that we did a lot of simulation training in a short amount of time to a population that weren’t really used to it. There was no graduated entry, which a lot of people found intimidating and threatening.

You are in the process of moving to the new Lady Cilento Children’s Hospital (LCCH), did you take any lessons learned from previous moves to assist in the process?

Yes absolutely. No matter how well planned things are on paper, you can't underestimate that there are always things that pop up that people haven't thought about or small risks that are apparent. It doesn't matter how long you sit down and talk about risks, the only way you find out is either with a real patient or by getting in and doing the simulated scenarios first. That was the main lesson; until you really test things properly with a clinical scenario you just don’t know those hidden risks. There are things that often get forgotten.

Are there any additional lessons learned with this move?

Yes, this is a much bigger scale. The Cardiac Services was only ten beds, where this is 100’s of beds. One of the challenges faced with this move is that we were doing a lot of the simulation testing without all of the equipment and consumables there. We still plan to get in and do a lot of training when it’s all there. Also because we are running two fully functional hospitals at the same time it has been very tricky trying to get the clinical staff over to LCCH to do orientation and familiarise themselves and then run scenarios, due to the scale of 1000s of staff.

What are your hopes for the future of simulation at the LCCH and across Australia?

My hope for simulation is that there will be less emphasis on technology. It’s come to the point where simulation has been made out to be very complicated and clever; to do it all well, you need huge amounts of money and technical expertise. I would like to get back to the methodology and the principle. I would like to see it integrated into every facet of training and a much stronger link between simulation-based training and patient safety, rather than education and safety being separate.
Laerdal Resusci Anne® & Resusci Baby® QCPR® Models

Resources team, CSDS

There are many factors that contribute to survival, but none are as powerful as receiving high-quality Cardiopulmonary Resuscitation (CPR). Laerdal’s new manikin line with QCPR® is designed to measure the core components of CPR skills. Intuitive graphics and easy-to-follow guidance indicate:

- compression rate and depth
- complete release
- limited interruptions
- appropriate ventilation volume.

Recently the Clinical Skills Development Service (CSDS) purchased a fleet of both the Adult Resusci Anne® QCPR-AW and the Resusci Baby® QCPRS which have been utilised in both our Basic Life Support and Advanced Life Support courses. The CPR feedback takes the guesswork out of CPR training. Objective measurement enables objective assessment. Results are logged and stored for comparison and tracking of CPR competence development over time. Real-time feedback enhances performance, both during training and debriefing.

Both of the trainers feature:

- realistic anatomy including head tilt, chin lift, compression depth, compression force and chest rise
- sensors indicating correct hand placement
- ventilation system providing realistic chest rise with Bag Valve Mask (BVM) and Mouth to Mouth (MTM) and measures volume and rate to help train correct ventilation technique

- enhanced measurement and feedback capabilities
- wireless connectivity with SimPad SkillReporter or Resusci Anne Wireless SkillReporter software
- wired connectivity with SkillGuide or SimPad SkillReporter.

They are both compliant with Australian Resuscitation Council (ARC) Guidelines.

If you would like to know more about the QCPR® manikins and how they could benefit your education, or would like to request the loan of one, please contact us directly at CSDS-Equipment@health.qld.gov.au or visit our sim shop on www.sdc.qld.edu.au
Pocket Centres

Pocket Simulation and Skills Centres (Pocket Centres) originated from the need for a standardised model for delivering simulation-based training across Queensland, through the Distributed State-wide Simulation Delivery Model. This initiative aims to improve patient outcomes by supplying the clinical workforce with high-quality, readily accessible, simulation-based education.

Each Pocket Centre is developed and operated locally with access to ongoing support from the Clinical Skills Development Service (CSDS). By using the combined resources of CSDS and individual Hospital and Health Services (HHSs), Pocket Centres provide training specific to local requirements. This often occurs in the clinicians’ own working environment, and with minimal disruption to patient care.

There are currently 56 Pocket Centres throughout Queensland. The location of each Pocket Centre is marked on the map with a star.
### Pocket Centre Profile

The Pocket Centre Profile will be included in each edition of the STaR Magazine. This profile will provide information on one or more of our Pocket Centres starting from initial engagements through to the day-to-day delivery that takes place within the Pocket Centre.

<table>
<thead>
<tr>
<th>Site Name</th>
<th>Thursday Island</th>
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<tbody>
<tr>
<td>HHS</td>
<td>Torres and Cape Hospital and Health Service</td>
</tr>
<tr>
<td>Site Location</td>
<td>Learning and Development Unit, Thursday Island Hospital</td>
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<tr>
<td>Centre Type</td>
<td>AV: Full EQU: Full Body Manikins and Part Task Trainers</td>
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<td>Application Form</td>
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</tr>
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<td>Pocket Agreement</td>
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<tr>
<td>Accreditation</td>
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</tr>
<tr>
<td>Audio visual</td>
<td>Full AV Install, equipment provided and supported by CSDS.</td>
</tr>
<tr>
<td>Simulation space</td>
<td></td>
</tr>
<tr>
<td>PROFESSIONS</td>
<td>Medical Nursing</td>
</tr>
<tr>
<td>SIMULATION TYPE</td>
<td>Immersive Pause and discuss Skills stations</td>
</tr>
<tr>
<td>COURSES</td>
<td>Human factors Technical skills ALS/BLS</td>
</tr>
<tr>
<td>Comment:</td>
<td>Thursday Island also regularly deliver:</td>
</tr>
</tbody>
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- A wound management day with the graduate nurses, where they practise ANTT and wound dressings; |
- One-on-one sessions with nurses - insertion of IDC; |
- Monthly neoResus (first response) occasionally advanced when a Medical Officer is available to facilitate; |
- BLS/ALS to Ward Staff on a weekly basis – we use SimMan in this training and find that this manikin is great to provide feedback re: compression and ventilation effectiveness.

### CSDS Simulation Provider Training

<table>
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<tr>
<th>COURSE</th>
<th>NUMBER OF STAFF ATTENDED</th>
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<tbody>
<tr>
<td>IST</td>
<td>Four</td>
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<tr>
<td>SCT</td>
<td>Four</td>
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<tr>
<td>FDC</td>
<td>One</td>
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<tr>
<td>SEED</td>
<td>One</td>
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<tr>
<td>Graduate Certificate in Healthcare Simulation</td>
<td>NA</td>
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</tbody>
</table>
SINGAPORE LEARNINGS: ANAESTHETISTS ARE SHOWN NEW SKILLS TO DELIVER SCENARIOS

Davin Arthur, Simulation Educator, CSDS

It was with much excitement that Sandra (Sandy) Thornton and I boarded flight SQ235 bound for Singapore. Sandy and I are Simulation Educators at the Clinical Skills Development Service (CSDS) and this trip had been planned for well over a year.

Our five-day trip to Singapore comprised of two components. First we were to assist local simulation practitioners in the delivery of the ‘Baxter’ course, a simulation education event for anaesthetists based on the safe and efficient use of Desflurane. The second part of our program had me teaching on the operation of Laerdal’s 3G manikin and Sandy facilitating a moulage workshop. The day would culminate in participants delivering scenarios incorporating these new skills.

The simulation centre at Singapore General Hospital (SGH) has only recently been built and is filled with the latest simulation equipment. I lost count of the number of simulation rooms after the fourth, all of which had control rooms equipped with the latest audiovisual gear. In terms of manikins, 3G was the centre’s workhorse but I also spied manikins from CAE and Gaumard.

The team at SGH had done a wonderful job setting up and with a few tweaks we were ready for delivery the next morning. The staff structure was very similar to our own and consisted of a Simulation Manager, two Simulation Coordinators and an audiovisual technician.

Over the next two days we delivered the training to a group of 25 very enthusiastic anaesthetists. Feedback from participants was very positive, all saying the Baxter course had improved their knowledge and would increase their use of Desflurane and the second day of simulation training had made them more confident in their ability to deliver effective simulation training.

Sandy and I would like to thank Queensland Health and Baxter for the opportunity to visit and work in an overseas simulation centre. This opportunity provided valuable learning not only to course participants but also to CSDS and the simulation staff at SGH.
Breaking new ground
WORTH THE WORK: A PERSONAL PERSPECTIVE ON THE VOCATIONAL GRADUATE CERTIFICATE IN HEALTHCARE SIMULATION

Tracey McLean, Simulation Coordinator, CSDS

When I was told I had funding to do my Vocational Graduate Certificate in Healthcare Simulation (GCHS), I must admit I felt both excitement and trepidation. Having done a Graduate Certificate in the past, I knew the quantity of work that would be required of me, but I was new to the simulation circuit, and felt excited to broaden my knowledge.

Working within the Clinical Skills Development Service (CSDS), I had the benefit of drawing on an extensive amount of knowledge from people who have worked in the simulation industry for many years. The information I gained from them gave me a solid foundation to commence work on the GCHS. Reviewing the literature and reading numerous journal articles and books to answer the supplementary questions in the workbook took me into another world. It provided wide and extensive information based on the opinions and experiences of a broad range of experts. I found that my own preconceived ideas about what simulation is were challenged and I have since built a greater knowledge base.

Each of the face-to-face workshops introduced me to a different aspect of healthcare simulation. The first course was Introduction to Simulation Training (IST), which gave an overview of simulation. Second was Simulation Coordinator Training (SCT), an extensive four-day course which covered the technical aspects involved in providing a Simulation Education Event (SEE) including setting up a SEE using both part-task trainers and full body manikins. I also completed a Fundamentals of Debriefing Course (FDC) that taught me several debriefing techniques and also gave me the opportunity to practice debriefing whilst receiving constructive feedback. Finally there was Simulation Education Event Design (SEED), a workshop that provided the tools that I required to design, develop, implement and evaluate a SEE. Attending these workshops, I began to understand the many different facets involved in designing, developing, delivering and evaluating an effective SEE.

At first I felt overwhelmed; it was like being a new graduate again, tackling a steep learning curve. However, working within a simulation centre provided me with great opportunities to apply what I was learning as I went along.

Overall, I believe the process of completing the tasks, asking questions and attending the face-to-face workshops has given me a comprehensive understanding of healthcare simulation. I have now opened the door and feel there is so much more to learn.

So, was it worth it? I’d say, yes.
NEW PATHWAYS TO LEARNING

Curriculum team, CSDS

The Clinical Skills Development Service (CSDS) has been successfully delivering courses to clinicians for over 10 years. This has been achieved through the use of face-to-face, eLearning and blended delivery methods.

But CSDS is not known for resting on its laurels. The past 10 years have been marked by continuous improvement, adapting services and delivery methods to meet the needs of clinicians and in turn, their patients. This was achieved in 2006 when the delivery of face-to-face simulation training was decentralised and the ‘Affiliate’ organisations, now known as Pocket Centres, were enabled to locally deliver the CSDS face-to-face courses.

CSDS is now changing how it provides its services again, through the development of eLearning and the implementation of training pathways. Currently, all CSDS eLearning is designed and developed by CSDS experts at CSDS using content provided to them by subject matter experts. In 2015, this will change so that the subject matter experts from Pocket Centres will be able to add their own content straight onto the page, creating their own courses. CSDS will enable this to occur by providing quality assurance around the whole course and some up-skilling tools. These tools will include material on how to design and develop eLearning and how to add assets such as videos and photos without breaking copyright.

Depending on their content and focus, some of these courses may be selected to go on the CSDS course list and be delivered state wide, nationally or internationally, or they may be kept as a local resource. This change in how eLearning courses are designed and developed will certainly add value to the holistic manner in which eLearning is provided, and will also speed up the ability for clinicians to receive training in much needed areas.

Training pathways are the second piece of the puzzle. Most of the CSDS courses are currently delivered as stand-alone, and apart from a few (such as the Graduate Certificate in Healthcare Simulation) are not promoted as linking to others. Currently, participants are required to search through the list of courses offered to identify what is relevant to them. This can be a bit of a ‘hit-or-miss’ method and may result in them either not completing the ones that they should be completing or commencing ones that are irrelevant to them.

The promotion of training pathways will allow participants to quickly see what modules they should be completing and build on the courses that they want to do, or have done. The courses will be mapped out by CSDS, allowing participants to easily see the core and elective options for their chosen pathway. Rewards will then be allocated to those participants who have completed the pathways. As more courses are completed, so more pathways will be as well, therefore increasing the rewards.

More information on both of these will be available in 2015 on the CSDS website as well as in the next quarterly edition of STaR.
If you are like most people, then some of your strongest and most sincerely-held beliefs are probably wrong. For example, many clinicians insist that a hospital-patient’s blood pressure and heart rate should always be graphed together on the same axes, because they believe that this will make it easier for chart-users to detect clinical deterioration. However, a recent study by researchers from the Clinical Skills Development Service (CSDS) and The University of Queensland has challenged this view (Christofidis et al., 2014).

The rationale often put forward by clinicians who prefer overlapping graphs relates to the availability of a visual cue called the ‘seagull sign’ (or ‘Portsmouth sign’), which occurs when heart rate (represented by a dot) is plotted above systolic blood pressure (represented by a ‘v’ or ‘inverted v’). In this analogy, the ‘v’ is the seagull and the dot is something unpleasant falling from the seagull – if it is falling upwards, then there must be something wrong! Indeed, there are sound physiological reasons why heart rate is normally lower than systolic blood pressure, and there is even evidence that the presence of the seagull sign is statistically predictive of clinical deterioration (as are other measures of the relationship between blood pressure and heart rate). However, the belief that clinical staff can easily recognise the seagull sign and use it to detect deteriorating patients was, until recently, an untested assumption.

In the experimental study by Christofidis et al., clinicians were presented with 64 observation chart extracts containing blood pressure and heart rate data (spanning 13 time-points per extract), and asked to indicate whether any of the observations were abnormal. Half of the data (32 chart extracts) were presented on overlapping graphs, and half on separate graphs. In each case, half
of the chart extracts contained an abnormal observation and half of these would yield a seagull sign when plotted on overlapping graphs. Results indicated that participants were quicker and more accurate at detecting abnormal observations when blood pressure and heart rate were plotted separately. Even when the seagull sign was available, there was no advantage of overlapping graphs. Nevertheless, these participants had previously received formal chart training that emphasised the seagull sign (as well as refresher seagull sign training immediately prior to the experiment), and the vast majority reported using it in their current clinical roles.

These findings suggest that the seagull sign is ineffective as a visual cue for day-to-day use by clinicians (although it may be recognised retrospectively in clinical audits). Hence, ‘strong but wrong’ beliefs about its clinical utility should not be allowed to dictate observation chart design, and time and resources spent training clinicians to recognise it are wasted. More broadly, this illustrates the interaction between training and effective design, and the need for evidence-based (rather than eminence-based) training and practice. Belief in the seagull sign is also an example of a ‘performance-preference dissociation’, illustrating yet again that users of a system (in this case, observation charts) do not always prefer what is best for them (for many more examples, see Andre & Wickens, 1995). There are many clinical practices that are based on assumptions and not evidence; for example, it is a strongly-held belief that a patient's respiration rate will change if they are aware that it is being measured. This may well be true; however, until we have empirical evidence to support (or to challenge) clinicians' underlying assumptions, we do not know whether current practices are appropriate and effective. To this end, the CSDS will continue to conduct research on the fundamentals of clinical skills, tools and practices.

Key References


Print your own Manikin

Curriculum team, CSDS

It's an old story. You resurrect a manikin you haven’t used in a few months and while setting it up you notice a small part missing. You think 'no big deal, the manikin should still work'. But when running the scenario something just isn’t right. You realise the missing part is crucially important. You contact the manufacturer to obtain a replacement part, only to be told that the manikin you’re using is no longer supported and you will need to buy a whole new manikin... which is in the vicinity of $100,000.00. This is a familiar and certainly unwanted situation to be in.

The Clinical Skills Development Service (CSDS) stocks a large fleet of manikins and part-task trainers, which are used both at CSDS as well as in Pocket Centres and Skill Centres. Maintenance is a crucial component to the longevity of manikins, but parts commonly go missing, or break. In some cases the breakages are irreparable and the supplier can no longer replace the component. As a result, CSDS has been investigating the ability to use a 3D scanner and printer to print its own parts.

The process of 3D scanning and printing involves, firstly, taking a 3D digital photo of the object. The digital image is then loaded into the software where it is sliced into hundreds or thousands of horizontal layers. The printer is then utilised to read every slice and to create the object layer by layer, producing a seamless product.

In September 2014, CSDS used this method to successfully trial the printing of a paediatric rib for Sim Baby. Unfortunately, the process is currently labour intensive as it involves manually rotating the object during the scanning process. This causes some interference whilst scanning and requires some clean-up of the final product to create smooth surfaces. Therefore, the next step is a move to a more automated process of scanning objects.

CSDS will now be investigating and building an automated turntable that will be integrated with the scanner for an automatic rotation and consequently a cleaner final product. After this, CSDS will start to investigate increasing the size of the objects that can be scanned. Who knows, in the future we may even be able to print Simulation Coordinators!
INTRODUCING: CSDS CENTRAL - EARTH

Systems team, CSDS

Have you heard of CSDS Central? If you haven't, it's an online system that the Clinical Skills Development Centre (CSDS) uses internally, as well as a service CSDS offers to Pocket Centres. We use it to manage bookings, course delivery, Pocket Centres, payments and resources. It has been custom-built to suit our very specific needs. CSDS Central - Fire was the first of our element releases at the end of 2013 and we hope to launch further releases with additional features and improvements on an annual basis.

Each element released will have significant additions to the CSDS Central features. With Fire the update requirements were identified from feedback collated from CSDS Central users. The end result was the launch of a faster, more secure, more efficient and therefore more effective system.

The next release, Earth, will be the biggest and most complex one that CSDS has ever undertaken. CSDS is a service that is rapidly growing in size and achievements. There are currently 58 Pocket Centres that we train and share resources with, coordinating their equipment loans as well as their maintenance. As the number of Pocket Centres, and the size of equipment stocks grow, it's clear that we will need a secure, efficient and effective system to manage it. While there are prebuilt systems on the market, our very specific needs could not be met without significant quality sacrifice or compromise. Also, having one system that could achieve all requirements was more efficient than having several independent systems.

CSDS Central - Earth will be our solution to the effective management of the growing pool of equipment. It's not only aimed at improving workflow for CSDS staff but for the Pocket Centres as well. This next release will improve the way Pocket Centres request equipment, their ability to monitor their loans and will also reduce the amount of work and time required to complete usage reports, all accessible online or via a smart phone. Because of the enormous size of this system CSDS will be releasing functionality in three separate stages. The first will include how equipment is loaned and products are purchased on our website through our new SimShop. It will also include the product and equipment backend that allows CSDS staff to catalogue and track equipment/products and a task-driven order process that will enable both CSDS and Pocket staff to manage order requests and also delivery and return dates.

In this initial stage we’re offering a free smart phone app to all of our Pockets to assist them in completing their annual stocktake requirements. This app will significantly reduce the amount of time required to complete this task as it allows you to scan the barcodes on each item of equipment. While this app is specifically dedicated to this task, it houses functionality that will be available later on in a larger app. The details of the stocktake app will be sent out to Pocket Centres before Christmas, so keep your eyes peeled.
In the training environment, the continued advancement of this technology is paving the way for new ways to design, develop and deliver training. The range of uses is varied and can include providing a realistic clinical environment for learners to undergo training in clinical or non-technical skills. For example, a nurse in Roma could access realistic, fully-immersive scenario-based training and receive up-to-date, just-in-time training or training as part of continuous professional development. There is also the ability to provide familiarisation and visualisations of a clinical skill before a large-scale event or crisis.

Haptic technology increases the immersion of the wearer into a virtual environment. In healthcare, a surgeon-in-training can practise their skills in the safe environment of the virtual world where they can ‘feel’ what they are doing to the patient though the haptic feedback. The resistance that they would normally feel whilst making an incision will be duplicated through the haptic device. In the real world, its use can be linked to operations in rural and remote where a surgeon in one location can operate on a patient in another location, all through the use a robotic device linked to the surgeon’s virtual world.

Simulation through VR is just one avenue that is available in the healthcare environment to aid clinicians not only in their work, but in their training as well. As we move more and more into fully immersive training where the link to reality is often a grey area, the technical and non-technical skills of clinicians will increase as well. Here at CSDS, we’re excited by these developments and look forward to helping clinicians take the next steps into the future of healthcare.
LIST OF COLLEGES CSDS COURSES ARE ACCREDITED THROUGH:

Compiled by the Administration team, CSDS

- Australian College of Emergency Medicine
- Australian College of Rural Medicine
- Australian College of Anaesthetists
- College of Intensive Care Medicine of Australia and New Zealand
- Australian Physiotherapy Council
- Royal Australian College of Physicians
- Royal College of Nursing Australia
- College of Emergency Nursing
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