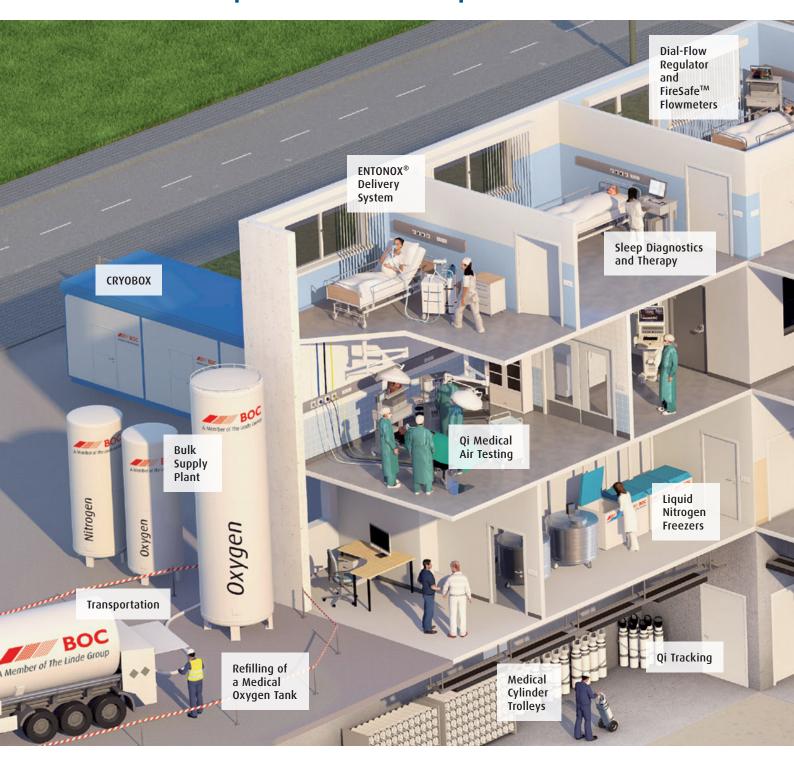


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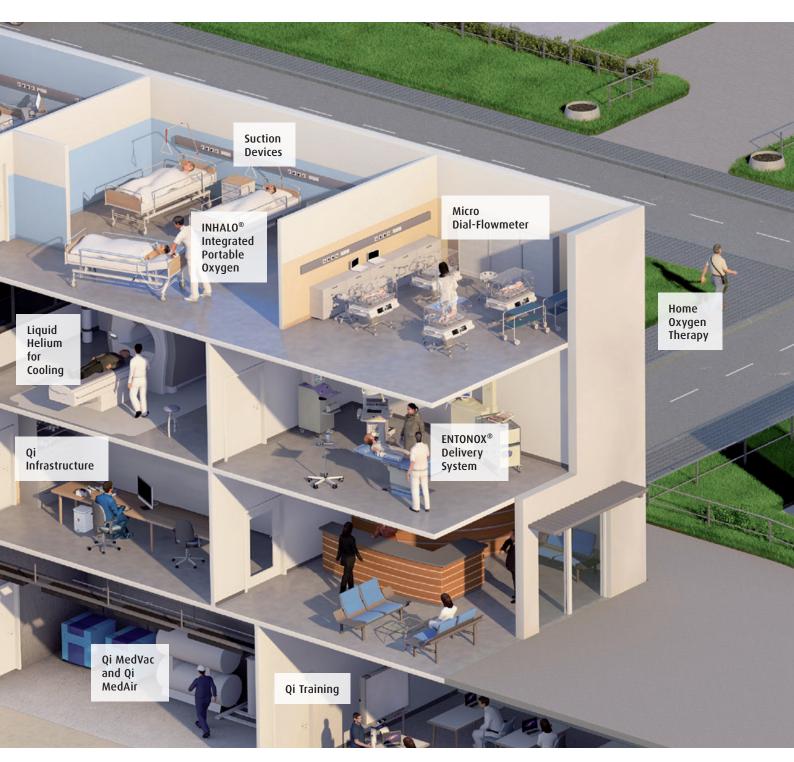
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## CONTENTS



#### **LEAD FEATURE EMERGENCY MEDICINE**



18

#### Heart attack or Heartburn?

*Dr Louise Cullen* explains how improved assessment of cardiac patients diverts resources to acute cases.



20

#### **Emergency Interview**

Danielle North from Ambulance VIC reflects on the changes in her profession and what it's like to work in this dynamic and critical sector.



24

#### National registration for Paramedics

- what lies ahead?

Dr Peter Hartley shares his perspective on national registration for paramedics.



28

#### 24 Hour ED Nurses

Dr David Green and Associate Professor Julia Crilly head up Australian-first research assessing the benefit of 24-hour emergency nursing care to police watch house detainees.

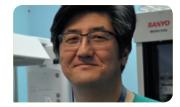
#### **LATEST FEATURES**



70

#### Panel of Experts

In this issue we invite three industry professionals to weigh-in on Penalty Rates - how important are they and are they sustainable?



95

#### In Conversation

Dr Yusuke Ueno gives us a glimpse into his life as an Emergency Medicine Physician.





44

#### Alarm Fatigue and Big Data

Dr Veena Goel cuts through the hype around Big Data and shows us how it can be used to achieve real results for patients and clinicians.



48

#### Big Data - A Surgeon's Perspective

Professor Andreas Obermair describes the challenges and opportunities for Big Data in providing insight for doctors into complication rates.



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## CONTENTS

#### REGULARS



**EDITOR'S WELCOME** Corin Kelly



56 AGED CARE Patrick Reid



82 **PHARMACY** Kristin Michaels



86 **IMAGING** Dr Christian Wriedt



88 NUTRITION Katherine Baqleh



90 eHealth Dr David More



92 **ETHICS** Prof Colin Thomson

#### **DAILY NEWS**

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LATEST NEWS 10

#### The Rounds

Breaking news and latest medical research.



32

INFECTION CONTROL

#### Infection prevention in 2016 - responding to new threats and challenges.

Professor Allen Cheng, talks infectious diseases and drug resistant organisms and the threats on our watch list.



72

MENTAL HEALTH

#### Nutrition in Mental Health - Sounding the Alarm

Dr Clayton Smith discusses the health effects of the modern Western Diet on our bodies and our minds.



80

#### Mental health and Epilepsy. What do we Know?

Professor Harry McConnell shares his views on how depression and anxiety need to be managed differently in patients with epilepsy.

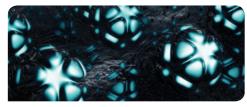


60

DESIGN IN HEALTH

#### Forward Thinking - Sunshine Coast University Hospital Program

Australia's first major new, tertiary teaching hospital for more than 20 years.



40

INFECTION CONTROL

#### Smart Bandages

- Taking Wound Management to a New Level

Professor Nicolas Voelcker explains how his research team is developing silicon-based nanomaterials that will change the way we manage wounds in the clinical setting.



76

MENTAL HEALTH

#### Sleep in a 24/7 World

Dr Maree Barnes, President of the Australian Sleep Association, presents the facts about the psychological impact of shift work on hospital personnel.



84

PHARMACEUTICAL

#### Medication Non-adherence and affordable, evidence-based solutions in chronic disease

Why aren't we taking our medicine? Tracy Laba talks about non-adherence and why is matters.

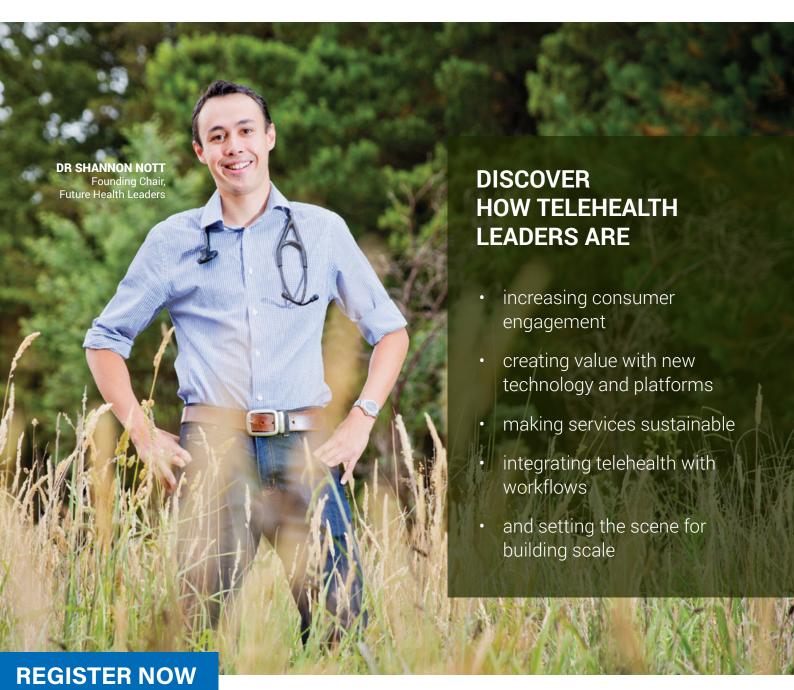


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## Getting to know you

When I slipped behind the editor's desk of Australian Hospital & Healthcare Bulletin last October, my first questions were, "Who are my readers?", "What challenges do they face?" and "What would make their professional lives easier?"

o answer these questions I needed to step out from behind my desk, so I accepted an invitation to spend a day at a major metropolitan hospital. Here I had actual conversations with real people across multiple departments and I came away with a clear wish list; workplace safety, access to case studies and information from large, well-resourced hospitals about their policies, procedures and procurement practices.

In this Autumnal issue we respond to these requests and more. Every day, 20,000 Australians present to an emergency department. We take a close look at where emergency medicine is heading and the changes that are taking place in this critical and dynamic sector. We hear from the Victorian and Queensland ambulance services and we follow the nurses involved in a watch house research program that offers 24 hour care to patients in police custody.

We showcase some of the most promising applications

and challenges for Big Data in healthcare including a case study from Dr Veena Goel describing her research that led to a procedural change now benefiting patients and nurses at her hospital. We look at the effects of shift work and nutrition on our mental health and host a lively debate on the subject of 'penalty rates' in our new column, 'Panel of Experts'.

No doubt, each hospital I visit over the coming months will deliver a different set of requests for content and I'd also like to hear from you. What issues are you coming up against in the health sector? Whether you have a story of inspiration or exasperation, drop me an email, give me a call or visit our Facebook page and let the Australian Hospital & Healthcare Bulletin be part of the solution.

(orin

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Want to contribute?

We welcome articles and research reports from health professionals across Australia for review for the quarterly print publication and our daily web page. If you have a story you think would be of interest, please send an email to ckelly@aprs.com.au.



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## The not-so-small print about keeping the public safe.

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Read the not-so-small print to complete the puzzle and keep the public safe. Go to www.notsosmallprint.com/bulletin or call 1300 419 495 to find out more.

## The Rounds Updates in Healthcare

NUTRITION

## Farting signals good health

Farting indicates that our bodies are hosting the right kinds of bugs, according to Dr Trevor Lockett, Head of the Gut Health and Nutrition Group at CSIRO Food and Nutrition. A component of high fibre foods known as resistant starch makes it through to the large intestine where it feeds healthy bacteria, producing gas and molecules such as butyrate, a short chain fatty acid that can reduce inflammation. Dr Lockett recently presented an update on his group's latest research at 'Bugs, Bowels and Beyond', at the Australian Society for Medical Research conference held in Adelaide, South Australia.

ONCOLOGY

## Cancer drug licensed in \$730m deal

A promising new cancer drug, developed in Australia with partners at the Cancer Therapeutics CRC, has been licensed to US pharmaceutical company Merck in a deal worth \$730 million.

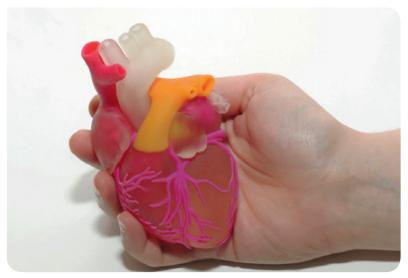
The drug, which was developed with support from the UK-based Wellcome Trust and Cancer Research Technology, has potential clinical applications in both cancer and blood disorders where there are no effective treatment options available.

GYNAECOLOGY

### **40% Risk Reduction for Ovarian Cancer**

A University of Queensland gynaecological researcher and cancer surgeon is urging women facing hysterectomy to consider removal of their fallopian tubes to reduce their risk of ovarian cancer. The Queensland Centre for Gynaecological Cancer(QCGC) Research Director, Professor Andreas Obermair, said women should be aware of the new option for preventing ovarian cancer. "Research emerging from the United States and Canada has shown that up to half of all ovarian cancers arise in the fallopian tubes rather than in the ovaries," he said. "This means that women who opt to remove their fallopian tubes can reduce their risk by up to forty per cent."

(UQ School of Medicine)



TECHNOLOGY

## **3D Bioprinting**- the shape of things to come

The severe shortage of donor organs and tissues is worsening yearly due to the ageing population. At the Medical Manufacturers Innovations conference in Florida, May 17-19, Dr Anthony Atala will present his team's latest work with stem cells and 3D bioprinting that is offering novel therapy potential for patients with tissue injury and organ failure. "The ultimate promise of regenerative medicine is not just to help manage disease but to really improve the lives or even provide a cure," Dr. Atala said.

- Wipo Magazine.



DATA

#### **New Australian Healthcare Atlas**

The Australian Commission on Safety and Quality in Health Care has released the first Australian Atlas of Healthcare Variation, identifying variation in health care provision in antibiotic prescribing, surgical, mental health and diagnostic services across Australia. It is the first time that data from the Medicare Benefits Schedule (MBS), Pharmaceutical Benefits Scheme (PBS) and Admitted Patient Care National Minimum Data Set (APC NMDS) have all been used to explore variation across different healthcare settings.

www.safetyandquality.gov.au



RESEARCH

#### **Reconnecting Communities**

How do we bring older people together and build community resilience? And how can we empower people who have been disconnected? Researchers from the UTS mHealth Lab, Associate Professor Valerie Gay and Dr Peter Leijdekers are developing Le Bon Samaritain, or SAM for short - a community-based care model supported by technology that integrates health, wellbeing, community and emergency services. It is designed to create an online community for people who live geographically close to each other either in their own homes or in a residential aged care or retirement village. Professor Gay and Dr Leijdekers will present their platform at The Digital Health Show, April 1-3, Horden Pavilion, Sydney.

www.digitalhealthshow.com.au



TECHNOLOGY

## **Condoms and gloves** as fine as hair

Fibres from the Australian native spinifex grass are being used to improve latex that could be used to make condoms and surgical gloves as thin as a human hair without any loss in strength. Researchers from The University of Queensland have developed a method of extracting flexible nanocellulose, from the grass. This means a supple, stronger and thinner membrane which is the holy grail for natural rubber.

www.aibn.uq.edu.au/spinifex-latex

INFECTION CONTROL

#### Is your Smartphone Sick?

Smart phones have changed how hospitals operate but they have a downside. A Tasmanian study reveals that doctors and nurses that share mobile phones in wards to get lab results and coordinate care are actually putting their patients at risk by spreading disease and infection. 5 percent of phones tested grew pathogenic bacteria. Tim Greenaway, president of the AMA said medical personnel should disinfect not only their hands, equipment and clothing but also their smart phones.

- Safety Culture, OHS News.

RESEARCH

### Fresh Science nominations open

Fresh Science is a national competition helping early-career researchers find, and then share, their stories of discovery. The program takes up-and-coming researchers with no media experience and turns them into spokespeople for science, giving them a taste of life in the limelight, with a day of media training and a public event in their home state. Nominations for Fresh Science 2016 are now open with the competition getting underway in May & June in May & June in every state where funding can be secured.

http://stories.scienceinpublic.com.au/submission

PAEDIATRICS

## High IQ kids improve with sleep

Parents are being encouraged to take notice if their child is snoring loudly at night. A study in the International Journal of Pediatric Otorhinolaryngology suggests doctors and parents should pay attention to symptoms of obstructive sleep apnoea in bright, high-performing children as well as those who struggle in school. Children with sleep apnoea can stop breathing for a few seconds or tens of seconds. This can happen hundreds of times during the night leading to sleepiness during the day. This study found that the behaviour of 147 children whose sleep apnoea was corrected by adenotonsillectomy, improved regardless of IQ and school performance.

(University of Michigan)

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#### COVER EX STORY

## Introducing HARU

#### Saving the lives of seriously injured patients

Based in Brisbane and the Gold Coast, Queensland Ambulance Service's (QAS) High Acuity Response Units (HARUs) are staffed by critical care paramedics using techniques and therapies pioneered by battlefield medics. Queensland Ambulance Service Medical Director, Professor Stephen Rashford discusses HARU and how it fits with QAS' commitment to providing the highest possible level of care to seriously injured patients.

ARU paramedics provide advanced interventions over and above the standard critical care paramedic (CCP) scope of practice.

"The only good thing about wars is that they result in medical innovation," Dr Rashford says. And this is where a lot of work has been done with the acutely bleeding patient. Trauma research tends to focus on the head-injured patient, which is obviously very important to us, but where the HARUs are making a huge difference is with that very small group of people who are bleeding to death," he explains.

"If you made it to hospital with vital signs, you had a 98 percent chance of survival in some of the medical units in Afghanistan. And HARU transfers some of these principles to the civilian arena like cutting edge procedures from a technical perspective but most importantly, the quality assurance programs which are second to none in the military," he says.

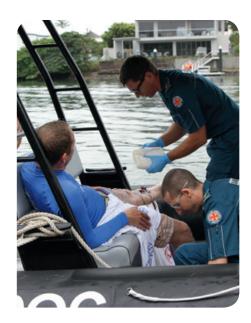
He adds, "HARU is a patient-centric initiative providing a seamless approach for people

with the most severe traumatic injuries from the time of the injury to when they receive hospital care and beyond," he explains. "These paramedics provide care at a level seen nowhere else in Australia, and this is supported by extensive training and very strong clinical oversight by senior trauma physicians."

"Several therapies used by the HARU team were developed in conflict areas in Afghanistan and they have been shown to have great value for patients with traumatic injuries. Trauma injuries represent a significant cost burden to the community and this very valuable intervention speeds the time it takes to get a person with traumatic injuries to definitive care, which improves their chances of recovery," he says.

According to Dr Rashford, the techniques used by HARU include being able to administer general anaesthesia before a patient reaches hospital and to conduct surgical procedures on the chest cavity to relieve the buildup of blood or air under pressure.

He explains, "Paramedics are also trained to use ultrasound to identify critical  $\rightarrow$ 



"The only good thing about wars is that they result in medical innovation."



→ internal bleeding, and this information can be quickly relayed back to doctors at the hospital to enable them to be better prepared when the patient arrives." He adds, "Often, our patients are taken from the roadside directly into the operating room, bypassing the emergency department and saving crucial minutes, ultimately saving lives."

Recently, the HARU team diagnosed a cardiac injury using ultrasound after a tradesman had a nail gun injury to his heart. Following direct transfer to the operating room, the man promptly underwent lifesaving heart surgery and was ultimately discharged from hospital only five days after arrival.

For those patients suffering critical bleeding, the HARU paramedics can administer blood transfusions en route to hospital. Dr Rashford noted that "The QAS has been at the forefront of aggressive blood transfusion therapy within urban environments, using minimal saline and maximising the early use of blood products. We are the only jurisdiction in Australia where this is readily available."

"The officers who join the HARU team are already very experienced paramedics," he explaines, adding, "They are Critical Care Paramedics with at least five years' experience, but most of them have 10-15 years of experience."

## To illustrate HARU paramedic's effectiveness in the field, Dr Stephen presents this critical care case study.

A 30-year-old male is struck by a car, lying on the road and extremely agitated. When HARU and CCP units arrive on scene the advanced care paramedic (ACP) crew is in the midst of placing an intravenous line into the highly agitated patient while a Queensland Fire and Emergency Services officer supports his spine.

The initial primary survey revealed the following:

• Airway – intact, cervical spine supported by manual midline immobilisation.

- Breathing respiratory rate 28/min, equal expansion, no chest crepitus, no subcutaneous emphysema.
- Circulation palpable radial pulse, heart rate 70/ min, soft abdomen, pelvis well-aligned and no significant external blood loss.
- Disability GCS 9 (M4), significant agitation, boggy haematoma to right occiput, blood from right ear, blood sugar level 7.7 mmol/l and moving all limbs.
- Exposure open right tibia/fibula fracture with significant exposure of displaced tibia.

The initial plan was to sedate the patient with ketamine to facilitate extrication to the ambulance, where a rapid sequence intubation (RSI – drug assisted intubation) would occur. The CCP undertook procedural sedation, using 10mg aliquots of ketamine to settle the patient. A total of 50mg of ketamine was administered.

Following completion of the RSI checklist, a further 100mg ketamine and 100mg



Rocuronium (muscle paralysis) was administered and the patient was intubated on first pass. No hypoxia or hypotension resulted. An orogastric tube was inserted and a heating blanket applied, with the patient then departing scene for hospital.

#### Audit findings

The scene flowed well because of excellent teamwork by ACP, CCP and HARU officers. The patient arrived in hospital 34 minutes post the Triple Zero (000) call, fully packaged allowing immediate transfer to the CT scan and reducing time to identification of critical injuries. Each officer contributed to excellent team work.

A pre-hospital ultrasound was not performed due to the relatively short scene time and haemodynamic stability. It was reinforced that such a scan should still be done, often undertaken whilst other procedures, such as limb splinting is being done. Although it was acknowledged the individual officer workload was intense.

Discussion regarding the option of titrated ketamine (10mg) versus a single 0.5mg/kg dose was debated at length in the audit. The HARU officer felt the small titrated dose allowed for observation of the haemodynamic and neurological response. This is especially important in the setting of potential significant blood loss. Despite ketamine usually resulting in a good haemodynamic response, when the patient has profound blood loss this effect is compromised.

#### Learnings

Each paramedic contributes to the outcome, no matter what clinical level. Appropriate task allocation and working in parallel optimises patient care and scene time. The paramedics attempt to think five to ten minutes ahead, to plan interventions proactively and not be reactive (e.g. ultrasound). Ketamine is a great prehospital drug but has limitations in certain circumstances. •

"Trauma injuries represent a significant cost burden to the community and this very valuable intervention speeds the time it takes to get a person with traumatic injuries to definitive care, which improves their chances of recovery."

#### Professor Steve Rashford

Professor Steve Rashford is a specialist emergency physician and medical director for the Queensland Ambulance Service. He has 25 years experience in major trauma resuscitation, including developing innovative prehospital techniques in anaesthesia, ultrasound, blood transfusion and surgical approaches to complex chest injuries.



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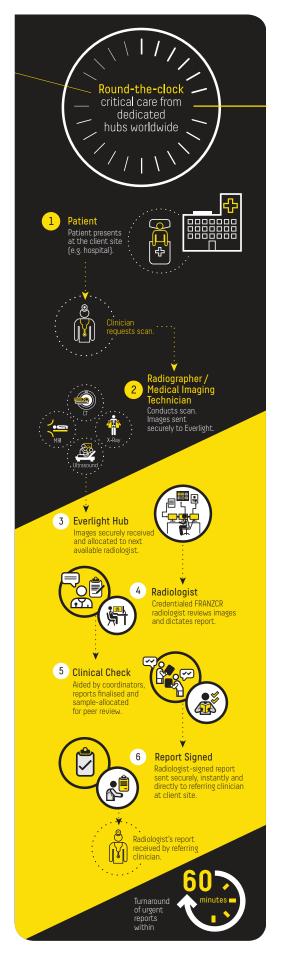
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Improved assessment of cardiac patients diverts resources to acute cases.

Chest pain is the most common complaint seen in adult emergency departments, with more than half a million patients presenting each year to hospitals across the country. Despite this large figure, only one in five of these patients actually suffers from an Acute Coronary Syndrome (ACS), a condition that includes heart attack and angina. The majority are diagnosed with indigestion, reflux and other less serious illnesses.

novel approach to assessing major cardiac emergencies within the hospital emergency department is seeing significant benefits for patients and medical staff. Queensland-based researcher and emergency medicine physician Associate Professor Louise Cullen and cardiologist Professor Will Parsonage are leading research in Accelerated Diagnostic Protocols (ADPs) that has the potential to change the way emergency patients are assessed not just in Australia but internationally.

A missed diagnosis of ACS can lead to further complications and even death, so patients with suggestive symptoms are often required to undergo lengthy assessment. Diagnosing ACS can be challenging due to its diversity in clinical presentation and the lack of one single diagnostic test. Current international guidelines for diagnosing ACS suggesting delayed serial blood testing, adds to the length of stay required for assessment.

Although the vast majority of these patients will be found not to be suffering ACS, the rigorous testing required to exclude it as a differential diagnosis often results in the patient being admitted to hospital for more than 24 hours. The challenge is to diagnose these patients in a safe, timely and cost-effective manner, so that emergency resources can be diverted to acutely ill patients.

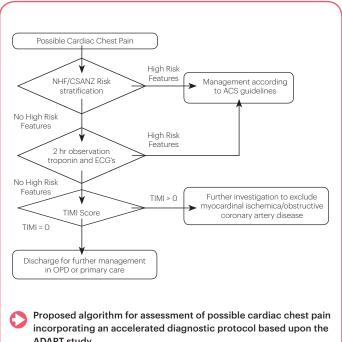
A/Prof Louise Cullen was awarded two research grants totalling more than \$1 million overall from the Queensland Emergency Medicine Research Medicine Foundation (part of the Emergency Medicine Foundation). This was part of the funding required to support her hypothesis that this assessment time could be reduced and in collaboration with New Zealand researchers two different strategies have been identified.



- A TIMI score is used to assess a patient's risk of death from a cardiac emergency.
- An ECG measures the electrical activity of the heart. In patients experiencing ACS there will usually be abnormalities in this exam.
- Troponin is a protein released by the myocardium when the heart is under stress and its measurable presence in blood can indicate a serious cardiac event.

#### **ADAPT**

The first strategy trialled was the ADAPT protocol (2-Hour Accelerated Diagnostic Protocol to Assess Patients With Chest Pain Symptoms Using Contemporary Troponins as the Only Biomarker).



ADAPT study.

To qualify for rapid assessment, patients were required to have a Thrombolysis in Myocardial Infarction (TIMI) score of 0 (reference range 0-7), a normal electrocardiogram (ECG) and a normal troponin. A second troponin reading was taken 2 hours after the initial result. Patients who met these criteria were considered suitable for rapid discharge from the emergency department with follow-up no later than 30 days.

Importantly, patients who were not low-risk according to the rapid assessment were managed in-line with current clinical care practices involving extended observation and/or admission.

#### Results

- A significant reduction in the length of stay for low-risk patients from 24.5 hours to 4.3 hours.
- Reduction in patient admission rates by 15-20% for ED patients with chest pain.
- Individual diagnostic parameters were not as effective as the combination used in the ADP.

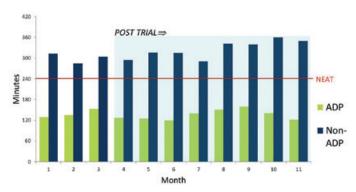


Figure: Analysis of hospital length of stay for ADAPT ADP vs non ADP in the first hospital that was trialled.

NEAT - National Emergency Access Target for assessing emergency department patients.

A pilot intervention project funded by Queensland Health assessing the translation of the ADAPT ADP in clinical practice commenced at a medium-sized hospital in 2012. On admission patients were assessed and received a TIMI score, an ECG and a blood test to analyse their cardiac troponin levels. The findings of this were in keeping with the original trial in that both safety was maintained and efficiency of assessment practices improved.

#### Implications for patients and the health system

The Queensland Government has since funded the implementation of the ADAPT ADP to 22 hospitals across the state. Known as the Accelerated Chest pain Risk Evaluation (ACRE) Project, early results to December 2015 are that 18/22 sites have implemented the strategy and 8,724 patients (23% of 37,418 cardiac chest pain patients) have been assessed using the ADP. If this protocol is adopted across the whole state of Queensland it could:

- Improve the assessment of more than 61,000 Queensland patients per year.
- Potentially release more than 1 million hours of patient admitted time or 42,468 bed days per year, allowing resources to be diverted to more acute cases.
- Potentially re-divert an estimated \$68 million per year to other areas within Queensland Health.

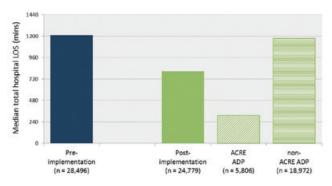


Figure: Interim analysis of the hospital length of stay for chest pain patients pre- and post-implementation of the ADAPT ADP in Queensland

Importantly, patients also benefit by either being discharged or admitted to hospital as quickly as possible, with minimal time in the emergency department.

If emergency departments are to meet the demands of a growing and aging population, new methods for reducing admissions, assessment time and outpatient care need to be investigated. The findings of this study are being closely monitored by the medical community with A/Prof Cullen's research being published in The Medical Journal of Australia, The Lancet and the Journal of the American College of Cardiology.

After the success of the pilot program A/Professor Cullen was awarded a second grant from the Queensland Emergency Medicine Research Foundation to review assessment times for other ACS patients that were not low risk. Although unpublished at this stage, she believes that the assessment process can be shortened for up to 70% of all ED chest pain patients. It is hoped these new results will be published in 2016. •



Or Louise Cullen

Dr Louise Cullen is an emergency physician and acute cardiac disease researcher at a large Brisbane hospital. She is now recognised as an international leader in chest pain research and is frequently invited to present her research at national and international conferences. She is aiming to make Queensland a world leader in cardiac research through testing new cardiac biomarkers, investigating novel strategies for risk assessment in the emergency department and translational research.

"Although the vast majority of these patients will be found not to be suffering ACS, the rigorous testing required to exclude it as a differential diagnosis often results in the patient being admitted to hospital for more than 24 hours."



## Emergency Interview -

#### Ambulance Victoria

Paramedic and Senior Team Manager, Danielle North, reflects on the changes in her profession and what it's like to work in this dynamic and critical sector.

#### What inspired you to pursue this career path?

I was always interested in being a paramedic, although I hadn't given it a lot of thought until an incident in which I was required to call an ambulance for a friend. The crew that attended were excellent, calm and professional. In observing them and their demeanour, I thought this might be a possible career option. With some further research around the inherent requirements and demands of the role, I decided becoming a paramedic was likely the career path for me.

#### Can you give me a run-down of an average shift?

The shift length varies from 8 to 14 hours, with most paramedics working a combination of day, afternoon and night shifts. The most interesting part of being a paramedic is the variety, and not really knowing what the day can bring. A typical day might include assisting elderly members of the community that may have had a fall or require support for their complex medical histories, anything from diabetes to heart disease and respiratory illnesses. We may be required to support people with mental health and drug and or alcohol-related issues. We also attend road trauma on a regular basis, and a variety of medical and trauma-related complaints. An important skill for paramedics is being adaptable, not only in managing patients with multi-faceted and complex presentations, but also the ability to manage a cardiac case, and then within minutes be required to deliver a baby, only to then be required to assist in road trauma.

#### Are there any times of year when you are busier than others?

I am based in Melbourne's outer south east. In my area the workload is generally consistent throughout the year, with the exception of days such as New Year's Eve. Periods of extreme heat also increase workload significantly across the state as can bushfires. Paramedics who work in coastal and holiday destinations see a significant increase in their workload during summer and school holiday periods and a reduction throughout the cooler months.

### What are some of the challenges that face you on a day-to-day basis? How do you overcome these?

You are continually learning as a paramedic. A busy workload means we are often out and about serving the community so it can be a challenge to keep up to date with clinical changes and updates. I like to allocate set time each week for clinical review and education.

Paramedic safety, particularly relating to manual handling and occupational violence, is a significant challenge that presents a risk to each staff member. We have continued training and zero tolerance to occupational violence. It is important paramedics remain alert and vigilant as well as continually undertake dynamic risk assessments to minimise the risk of being injured.

#### When do you find your job most rewarding?

For me, it's when you are able to make a positive difference to someone and their families, and they give you their heartfelt thanks. To me, it doesn't matter if it is a large case with significant clinical interventions or a lower acuity case in which someone requires your support and assistance. The ability to make a difference and improve what is often very difficult for the patient is the most rewarding component of the job.

### How important is it to take care of your own physical and mental wellbeing in this role and how to you do this?

It is critically important to ensure you are fit and well, not only to do your job well but also for your own health, wellbeing and happiness. A paramedic's typical day can be busy and the constant change from day to night shifts can be detrimental to your sleeping patterns. For me, it is important to maintain regular exercise and eat a balanced diet. I try to ensure I have some work-life balance and not take work home with me to my family. I engage with AV's SMART (Stress Management And Resilience Tools) program, which is a program designed to proactively review and monitor your mental wellbeing and allows for early recognition of signs of PTSD (Post Traumatic Stress Disorder), anxiety or depression. Early recognition and implementing strategies to reduce risk can have significant benefits in improving your

#### What are the main procedural changes that you have seen in recent times?

Ambulance Victoria is always looking at how we can continually improve clinical care and processes to advance our level of care and improve patient outcomes. I commenced as a paramedic in 2001 and I have seen a number of changes across the organisation over this time. We have seen the introduction of CPAP (Continuous Positive Airway Pressure) for both ALS and MICA paramedics and the provision of 12 lead ECGs for MICA paramedics, which assist with the early diagnosis of a STEMI (ST Elevation myocardial infarction). More recently we have also seen the introduction of pre-hospital thrombolysis for patients experiencing a STEMI in regional Victoria.

There have been significant changes to the way we treat road trauma patients. In November 2013 the Trauma Time Critical guidelines were updated to reflect the extended timeframe to triage patients to the highest level trauma service from 30 minutes to 45 minutes, and, as a result, more patients are being triaged to the highest level of trauma service. The introduction of RSI (Rapid Sequence Intubation) for MICA



paramedics, which has now been part of MICA practice for more than a decade, is also significant. Research has found in adults with severe traumatic brain injury, pre-hospital RSI by MICA paramedics increases the rate of improved patient outcomes at six months compared with RSI in the hospital setting. MICA flight paramedics can also administer blood to patients. More than 145 patients have received blood since the procedure started in April 2011, with the bulk of patients being road trauma patients.

Ambulance Victoria is also involved in several significant research projects. These include the Monash University-led POLAR trial, which is investigating if the early cooling of patients with severe traumatic brain injuries leads to better patient outcomes. We are also involved in the PATCH study, a multi-centre randomised placebo-controlled and blinded trial to assess the effectiveness of pre-hospital administration of tranexamic acid for severely injured patients at high risk of acute traumatic coagulopathy. The study aims to determine the overall benefits and harms of pre-hospital treatment with tranexamic acid, and whether it improves survival and recovery at six months.

In addition to the significant advances in clinical care, we have also seen changes in our manual handling practices, including the provision of several Complex Patients Ambulance Vehicles to assist with the transport of complex patients and the inclusion of several pieces of manual handling equipment to make it easier to move the patient while minimising the likelihood of injury to the paramedic.

Are you anticipating any positive changes in procedure or legislation that may be in the pipeline?

It is an exciting time for Ambulance Victoria

following the release of the Ambulance Policy and Performance Consultative Committee's final report in December 2015. The report flags several reforms, including increasing the use of our secondary triage service and improving community awareness about when to call Triple 0 for an ambulance.

The secondary triage service links people to alternative appropriate health professionals in order to ensure emergency ambulances are available for the sickest patients in our community.

Increasing the quantity and quality of training for operational staff is also a major priority over the next 12 months.

As outlined in the Ambulance Performance and Policy Consultative Committee final report, we are implementing 40 hours a year of continuing professional education for all operational staff.

The increased training is more than double the number of face-to-face training hours per operational staff member in 2014/15.

What are some of the challenges facing paramedics in the field? Where are the gaps that if filled, would make a real impact to how you deliver your service?

Non-urgent calls can impact our ability to respond to life-threatening cases. Whilst we always want people who are truly sick to call for an ambulance, it is important for the community to understand the impact non-urgent calls can have on resources. We need to make sure we keep our emergency ambulances available for the sickest patients in the community.

It can also be frustrating to attend call outs which may be avoidable, especially when there is a lot of public education and repeated warnings about them. For example, paramedics were called to 1433 cases of children locked in cars in the year to 31 August

2015. While many of these cases were accidental, some of them were deliberate. Leaving a child in a car is avoidable and can have potentially lethal consequences.

Alcohol is a significant issue in society and has obvious impacts on the work of paramedics. Paramedics were called to 12,482 alcohol-related cases in metropolitan Melbourne in 2013-14 and 4043 in regional Victoria. Many of these cases were avoidable.

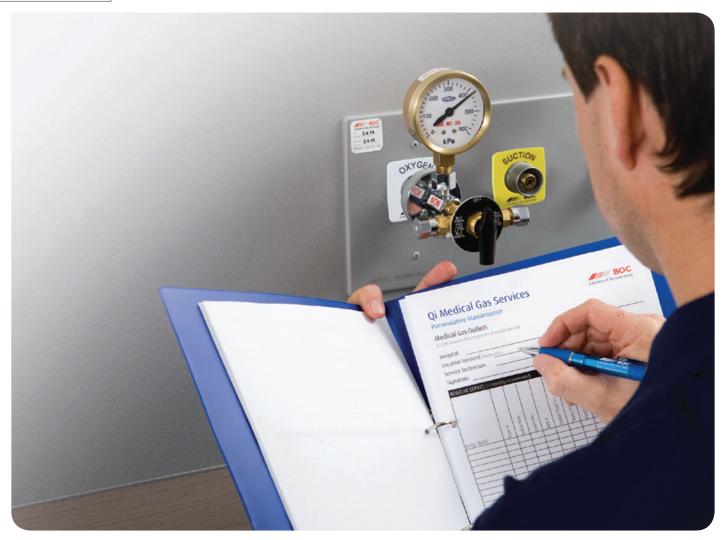
Can you give me any examples of how technology is helping your paramedics to improve patient outcomes and reduce job stress?

We have recently replaced our helicopter fleet. The new AW-139s are faster and can travel longer distances than our previous helicopters, meaning our MICA flight paramedics can provide even better patient care. MICA flight paramedics have also been trained to use an ultrasound machine, meaning they can better identify bleeding in the abdomen and can give the destination hospital early information about the patient's injuries and condition.

With the introduction of 12 lead ECG machines, we have also used technology to allow for the ECG to be transmitted before the ambulance arrives at hospital. This allows the receiving hospital staff to analyse the ECG and prepare for interventions prior to the patient arriving, therefore minimising the delay to the patient and improving their chance of a full recovery.

The provision of Mobile Data Terminals (MDT) with satellite navigation in metropolitan ambulances has improved communication with our communications centre and hospitals, while also providing additional guidance to locate a patient. This can be particularly valuable for students learning to navigate streets they may not be familiar with. •

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## Working in an ED?

These free online courses can help

www.acem.org.au/resources



First Shift in the <u>ED Orientation</u> Program



Best of Web



**Quality Standards** 



Indigenous Health and Cultural Competency (IH&CC)

A series of online courses designed to assist doctors and healthcare professionals working in Australian emergency departments (EDs) - or those who want to - to learn about the requirements and expectations of working in the ED environment.

#### First Shift in the ED Orientation Program

The First Shift in the ED Orientation program is a series of learning tools and resources relating to Australian emergency departments. It has been designed to introduce doctors new to the Australian healthcare system to the requirements and expectations of working in an Australian emergency department.

#### Best of Web

The Best of Web program has been designed to provide web materials relating to emergency medicine, with content assessment suggesting audiences which will most benefit from each resource

#### **Quality Standards**

The Quality Standards aim to provide guidance and set expectations for the provision of equitable, safe and high quality emergency care in Australian EDs and other hospital-based emergency care services.

#### Indigenous Health and Cultural Competency (IH&CC)

The IH&CC program is a series of culturally relevant learning tools and resources relating to Indigenous health and cultural competency. The program's aim is to support the continuing professional development of emergency medicine physicians and other ACEM members in their work in EDs across Australia.



# National Registration for Paramedics

- What lies ahead?

Paramedics Australasia, the peak body for paramedics in Australia and New Zealand, announced in December that a consensus of state and territory governments has now paved the way for national registration of paramedics - Australia's most trusted profession. Paramedics are set to become the 15th health profession regulated nationally.

ational registration follows a ten-year advocacy campaign by Paramedics Australasia to demonstrate to Australian Health Ministers that only national registration and an accreditation scheme for paramedics will provide a regulatory framework to protect the safety of the Australian public.

President of Paramedics Australasia Dr. Peter Hartley says, "Paramedic practice in Australia has evolved substantially over the past two decades from being primarily emergency care and transport providers to today performing an important role in the primary and emergency health-care system."

Paramedics have become an integral component of the Australian health workforce according to Dr. Hartley. "The clinical scope of practice for paramedics today includes critical interventions and invasive procedures such as the administration of thrombolytic medications for patients experiencing heart attacks and schedule 8 medications for analgesia," he says.

Extended care paramedics are performing a wide range of specialist primary care procedures that treat patients at home instead of transporting them to hospital. In addition, intensive care paramedics are providing critical care to patients in ground

ambulances and helicopters across the state. "We believe modern paramedics help to make healthcare more effective and more efficient, however, at the same time, this enhanced skill-set comes with a greater risk to patients," comments Dr. Hartley.

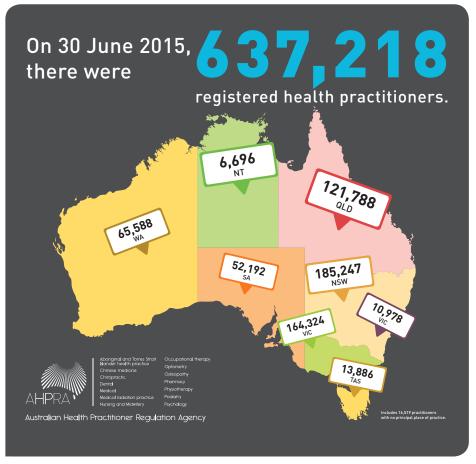
Paramedics Australasia demonstrated to the state and territory Health Ministers that there was significant risk to the public to warrant regulation of Australian paramedics under the National Registration and Accreditation Scheme (NRAS). Fourteen health professions are currently regulated nationally through the Scheme: Chiropractic, Dental, Medical, Nursing and Midwifery, Optometry, Osteopathy, Pharmacy, Physiotherapy, Podiatry, Psychology, Aboriginal and Torres Strait Islander health practice, Chinese medicine, Medical radiation practice and Occupational therapy.

The Australian Health Practitioners
Regulation Agency (AHPRA) administers
NRAS and supports the National Boards
in decision-making, administrating the
procedures for managing registration
and notification matters, provides legal
interpretation, makes recommendations to
the Board and committees and is a point
of contact for registration enquiries from
practitioners, employers, governments and
stakeholders.



#### Dr Peter Hartley

of Peter Hartley is President of Paramedics Australasia. He is Associate Professor and the Director of Learning and Teaching at Victoria University within the College of Health and Biomedicine. He has a multi-discipline background in health, sociology, education and had over 27 years ambulance experience in Australia. He commenced his career with the Metropolitan Ambulance Service in Victoria in 1986 and has worked as a paramedic in both metropolitan and rural locations. Peter has a long history as a paramedic academic lecturing in the discipline both nationally and internationally and has delivered numerous papers and courses throughout Canada, United States and Europe. His current commitment is focused on the advancement of paramedicine's recognition as a professional entity and working towards national registration of paramedics in Australia and New Zealand.



As at 30 June 2015, statistics produced by AHPRA show there were 637,218 registered health practitioners in Australia with most registered in New South Wales and the least in the Northern Territory. The largest registered health profession is Nursing and Midwifery with 370,303 followed by Medical at 103,133 and at the smaller end Aboriginal and Torres Strait Islander health practice at 391 and Osteopathy at 2,000.

#### **AHPRA's stated role is:**

- Supporting the National Health Profession Boards in their primary role of protecting the public.
- Publishing national registers of practitioners so important information about the registration of individual health practitioners is available to the public.
- Managing the registration and renewal processes for health practitioners and students around Australia.
- Enabling the public to make a complaint about a registered health practitioner or student.
- Managing investigations into the professional conduct, performance

- or health of registered health practitioners in some jurisdictions.
- Working with the Health Complaints Commissions in each state and territory to make sure the appropriate organisation deals with community concerns about individual, registered health practitioners.

Although each of the Health Profession Boards operates under an individual instrument of delegation and health profession agreement there are five mandatory registration standards common to all Boards including criminal history, professional indemnity insurance arrangements, continuing professional development, English language skills and recency of practice.

There are currently approximately 13,000 paramedics working in Australia. The largest employers are state and territory emergency ambulance services and the Australian Defence Force with around 18% of paramedics working in the private sector. In 2012, 122 private sector employers of paramedic staff were identified and it is anticipated that this number has grown in the last couple of years.

Over the period of the sustained advocacy campaign by Paramedics Australasia there has been overwhelming support for national registration by their paramedic members in Australia and New Zealand. In 2012, 87% of a total of 3841 Paramedics Australasia member respondents supported the inclusion of paramedics in NRAS.

Internationally, paramedics are registered as healthcare professionals in many overseas locations e.g. United Kingdom, Ireland, Canada and South Africa. The Paramedics Australasia New Zealand Chapter has made significant progress with the New Zealand Government in the last eighteen months and also looks set on a path to national registration and subsequent increased protection of the public.

#### The way forward

So what is the path ahead for registration of Australian Paramedics in the national scheme? Paramedics Australasia is working closely with the state and territory health departments and Ministers and in particular with the current lead agency, the Victorian Department of Health and Human Services (DHHS) and AHPRA.

Dr. Hartley comments, "A lengthy planning phase lies ahead of us to progress the inclusion of paramedics in the NRAS including a period of targeted consultation, scoping and development of policy, and collaboration for the legislative development processes required to secure amendments to the Health Practitioner Regulation National Law as in force in each state and territory."

The path is sure to be lengthy and challenging but the outcome is clear to Dr. Hartley who says, "Paramedics Australasia is ready for the challenges ahead and the ultimate benefits to the Australian community from increased public health safeguards."

Paramedics Australasia anticipates paramedics will be nationally registered before the end of 2018. ◆

#### **Key Issues with IV Connectors**

#### Catheter Occlusions

- Catheter occlusion is the most common noninfectious complication in the long-term use of central venous catheters (CVCs) and occurs in 33% of these catheters.1
- A common cause for catheter occlusion is clotting of blood refluxed into the catheter. Blood reflux occurs when an administration set or syringe is connected to a positive displacement connector or disconnected from a negative displacement connector.1
- Occlusions increase the risk of procedural complications, risk of infections and costs in hospital time and money. Maintaining the patency of the catheter is a high priority.2

#### Bloodstream Infections

- Facilities and governments have increased pressure to reduce hospital-acquired infections (HAis).
- It is estimated that central vascular catheters are associated with 248,000 bloodstream infection per year in the US.4
- Development of a catheter-related bloodstream infection (CR-BSI) can increase hospital length of stay by an average of 23 days, and mortality rate by 21.6% which increases total cost of care.5
- As an additional reference the FDA has expressed concern about multiple clinical reports regarding the association of BSIs with positive displacement

#### Connector Failure

- Connectors not designed to tolerate pressures used for power injection can fail and harm the
- Failure can delay treatment of patient.<sup>7</sup>

#### Training Requirements

- Multiple connectors with varied techniques can cause confusion and increased potential for errors.8
- Ongoing staff turnover requires increased training.9

#### Key Features and Benefits of the One-Link Needle-free IV Connector

| Features   | Clinical Benefits  |
|--|--|
| Withstands a maximum of 325 psi with a pressure power injector¹  | Compatible with most contrast media power injectors  |
| Can be used for up to 200 actuations and over a period of 7 days. Replace device whichever comes first.                                  | Aligns with CDC 2011 guidelines and may provide flexibility for longer use   |
| Smooth top surface with gland tightly fitted to housing  | Provides an easy-to-cleanse device that helps the clinician disinfect the surface  |
| Clear housing  | Allows the visualization of the fluid path, thereby helping the clinician to verify that the device has been flushed               |
| Finger-grip surface  | May reduce likelihood of touch contamination   |
| Low flush volume after medication or<br>solution administration. 10 ml flush<br>required if the connector has been<br>exposed to blood.* | Facilitates thorough flushing of device Appropriate for fluid restricted patients, including neonates and pediatric patients       |
| Neutral fluid displacement   | Eliminates the need for a specified clamping sequence; for patient safety, clamping is required only when the device is not in use |
|  | Compatible with a variety of valved and non-valved catheters   |
| Low priming volume (0.08 ml)   | May allow for more medication to be delivered and less to be retained in the device  |
| Lipid compatible   | Can be used with a wide range of IV fluids   |
| No clamping sequence required.<br>(Clamp when not in use for patient safety)   | Simplifies training  |

- Replace if a pressure over 325 psi is applied to the connector.
- Flush per organization protocol. Flush with a volume of 10 ml after exposure to blood. Replace if a 10 ml flush cannot be performed

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## One-Link Needle-free IV Connector



**Enhancing patient care. Simply. Neutrally.** 

#### One-Link, Needle-free IV Connector

- ✓ Power injector compatible (up to 325 psi)\*
- ✓ Straight fluid path
- ✓ Non-PVC and Non-DEHP
- ✓ Easy to clean surface
- ✓ Low priming volume of .08 mL

The neutral displacement ONE-LINK connector is designed to help reduce the risk of thrombotic catheter occlusions compared to devices with higher reflux volumes.<sup>1</sup> Less chance of reflux means simplified training and usage — and more time to focus on your patients.

Plus, ONE-LINK is a needle-free connector that can be used throughout your facility. From OR to ER. Neonatal to Oncology.



Preventing infections and improving medication safety is our business. Let's raise the standards and help make healthcare **Safer Together**.

\*Prior to power injection, ensure all parts of the IV System are compatible. Replace if a pressure over 325 psi is applied to the connector. The ONE-LINK IV Connector is intended for single patient use with a vascular access device for administration of drugs and solutions without needles and can be used to aspirate blood.

For safe and proper use of this device please refer to the Instructions for Use

1 Data on file, Baxter Healthcare Corporation.

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## 24-hour ED Nurses

#### - Watching the watch house

Australian-first research is assessing the benefit of providing 24-hour emergency nursing care to police watch house detainees, in a bid to reduce the number of transfers between the watch house and hospital. The research is being led by Dr David Green and Associate Professor Julia Crilly and will provide analysis of a Watch House Emergency Nurse (WHEN) model of care of care.

#### Background

Funded by the Queensland Emergency Medicine Research Foundation (now the Emergency Medicine Foundation) and the Gold Coast Hospital Foundation, the research is underpinned by recommendations from a coronial inquest following a death in custody in a Queensland watch house. The coronial inquiry stated:

"Almost 100,000 people pass through Queensland watch houses each year. Many of them suffer from serious chronic and/or acute health complaints... Some cautious discernment is needed when determining which prisoners should be transferred to hospital and which should be kept in watch houses. Police are not medically trained... Medically trained staff should be posted in all of the larger watch houses to make initial assessment and to carry out ongoing monitoring and re-assessment."

- Office of the State Coroner's report, 2012, p13

There has been an increase in high-risk activities across the general community, which has led to a subsequent rise in chronic illnesses, violence, homelessness, drug use and criminal activity.

The latest data from the Australian Institute of Health and Welfare shows an increase in emergency department presentations of more than 25% in the past five years, with the proportion of emergency presentations arriving by police increasing by 13% over the same period.

Prisoners are a vulnerable group and often require health care when presenting at police watch houses. Many suffer from mental health problems and engage in risky health behaviours such as smoking, excessive drinking, illicit drug-taking and other behaviours that lead to contracting communicable diseases.

It is essential, however, that these behaviours do not negatively impact the level of health care they receive. The United Nations Basic Principle for the Treatment of Prisoners states:

"Prisoners should have access to the health services available in the country without discrimination on the grounds of their legal situation"

- Principle 9, A/RES/45/111

#### The current situation

Health care provision can vary between watch houses. The local arrangements for health care provision in one busy Queensland watch house (prior to the trial) included 24/7 access for police to a Forensic Medical Officer (FMO), who provides advice and support, along with on-site contracted domiciliary nurses who work approximately 3-6 hours /day 7 days a week.

FMOs have a large portfolio of responsibility, which includes forensic examination of complaints and offenders (including sexual assault victims), attending death scenes, writing opinions and reports and attending court to give evidence. If the FMO is unavailable to attend the watch house

or after-hours nursing care is required, detainees are transported (often by ambulance) to the emergency department in the custody of two police officers.

#### The research

The Watch House Emergency Nurse (WHEN) model was trialled for 66 days. This model involved emergency nurses from the Gold Coast Hospital supplementing the existing on-site contracted domiciliary nurses so that 24/7 nursing cover was provided in a watch house located in the region.

The WHEN model aimed to provide assessment and management (under FMO supervision) for detainees requiring health care, thereby reducing some of the potential risks associated with watch house detention.

Leveraging the knowledge and skills of emergency nurses, a considerable number of health issues (such as diabetes, wound care, high blood pressure, drug withdrawal) were detected and treated on-site in conjunction with the FMO

Emergency department nurses have a different set of skills and experience from domiciliary nurses, and these specialised skills are extremely useful in the watch house setting.

The WHEN model also provides emergency department nurses with greater experience and diversity in work duties by allowing them to work outside the traditional hospital environment.



Associate Professor Crilly's research aims to answer the following questions:

- What are the characteristics of police and non-police ED patient presentations?
- 2. What are the characteristics of watch house vs non-watch house police ED patient presentations?
- 3. Do patient, health service and police outcomes differ before, during and after the WHEN trial?
- 4. What are the structures required for the WHEN model of care to operate?
- 5. What are the processes required for the WHEN model of care to operate?

#### Results

The results of this research are expected later this year. They have the potential to inform policy decisions on health care delivery for emergency departments and improve health assessment and referral practices in the police watch house setting.

There is extremely limited literature available on custodial/ forensic nursing, particularly in Australia, and the results of this research are eagerly anticipated.

Results will be published in international and national medical and forensic journals once available. •

#### Dr David Green and Associate Professor Julia Crilly

Dr David Green has more than 30 years of Emergency Department clinical experience as well as research experience. In his role as the Director of Emergency Medicine at the Gold Coast Hospital and Health Service, he facilitates and supports research within the Emergency Departments and has successfully received research funds from QEMRF and other sources (such as the Gold Coast Hospital Foundation and government strategic funding). These have resulted in 15 peer-review publications in which he is a lead or coauthor, further collaboration with agencies such as the CSIRO and universities such as Griffith University, and capacity building within the Emergency Departments. He has established and had formally evaluated (usually with University partners) innovative models of care within the Emergency Department that

have also led to peer-review publications and service refinement/improvements.

Associate Professor Julia Crilly is a PhD prepared registered nurse. She has a strong clinical background, having worked as a registered nurse in the Gold Coast Hospital Emergency Department for nine years before progressing into full-time research in 2007.

Julia is currently in a joint appointment between Griffith University's Menzies Health Institute Queensland and Gold Coast Health as Associate Professor of Emergency Care.

She has led and been involved in multi-disciplinary and multi-site research working with organisations such as the CSIRO, Queensland Ambulance Service, Queensland Police Service and international partners from the USA, UAE, Sweden, South Africa and the UK.

"Police are not medically trained...Medically trained staff should be posted in all of the larger watch houses to make initial assessment and to carry out ongoing monitoring and re-assessment." - Office of the State Coroner's report, 2012, p13.

#### SPC ProVital Fruit Cup<sup>^</sup> achieves the highest possible score in packaging accessibility

In a recent scientific review, Georgia Tech Research Institute, in collaboration with Arthritis Australia, analysed the ease of use of SPC ProVital Fruit Cup against comparable products, applying an Accessibility Benchmarking Scale ranging -8 to +8.

PC ProVital Fruit Cup^ achieved the highest possible accessibility rating +8 - meaning it is universally easy to use and that 95% of the population can easily open this packaging

SPC has specifically developed easy open packaging using guidelines from Arthritis Australia for consumers with fine motor difficulties

In the past fifty years, the number of people in Australia aged 65 and over has more than tripled. This equates to approximately 3.4 million as of 20141 (over 14% of the population.)

The most commonly reported condition affecting half of all people aged 65 and over<sup>2</sup> is arthritis.

While the ageing population makes up a significant segment of our population, this particular group is often overlooked when it comes to nutrition and accessible packaging design. While there are a number of facilities who cater to elderly people with fine motor skill difficulties, hard-to-open food packaging is not uncommon, and often serves as a source of frustration to this generation.



Professor David Hunter, arthritis expert, Head of the Rheumatology Department. Royal North Shore Hospital in Sydney:

"The impact of musculoskeletal diseases like osteoarthritis pose a huge health burden to Australian society, second only to mental health.

"In a hospital or an aged-care facility, every meal should be an opportunity for patients to consume maximum nutrition. Encouraging new food delivery and packaging innovations is definitely a step in the right direction."

#### SPC ProVital is an

- Australian Innovation
- Australian Made
- Australian Fruit\*
- Australian Quality



#### Key features of the SPC ProVital portion control fruit cups include

- √ 100% Australian Fruit\*
- √ Portion controlled to deliver one serve of fruit
- $\sqrt{}$  A textured and lengthened pull tab for easier grip
- √ Extra-large font for improved legibility



#### About SPC

SPC Ardmona has been committed to bringing premium packed fruit and vegetables to Australians for nearly 100 years. The company's iconic food brands, Ardmona®, GOULBURN VALLEY®, IXL®, SPC® and TAYLOR'S® are strong performers in their product categories and are further developed and supported by continued investments in both marketing and product innovations. SPC Ardmona is owned by Australian-listed company Coca-Cola Amatil.

About SPC ProVital: SPC ProVital delivers a range of expertly tailored and nutritionally optimised fruit products to help you maintain vitality, health and wellness, while enjoying the delicious taste of Australian fruits.

- The Australian Government Treasury, Australia's Demographic Challenges (http://demographics. treasury.gov.au/content/\_download/australias\_ demographic\_challenges/html/adc-04.asp), Accessed
- Australian Institute of Health and Welfare 2015 (http:// www.aihw.gov.au/ageing/) Accessed 23 September
- AIHW 2014. Australia's health 2014. Australia's health no 14 Cat no AUS 178 Canberra: AIHW
- Product samples of the SPC ProVital Fruit Cup were submitted to the Accessibility Facility at the Georgia Tech Research Institute for testing. The purpose of the testing was to determine the accessibility and ease of use of the product for people with arthritis. The SPC ProVital Apple Fruit Cup received a favorable review.

The Accessibility Benchmarking Scale has a range of criteria that must be met to be eligible for scoring, with scores ranging from a -8 all the way up to a + 8 rating.

- excluding the fruit salad which has imported pineapple
- excluding short and long-sightedness



If you'd like more information about how you can provide quality nutrition to your patients, visit the SPC ProVital website today www.spc.com.au

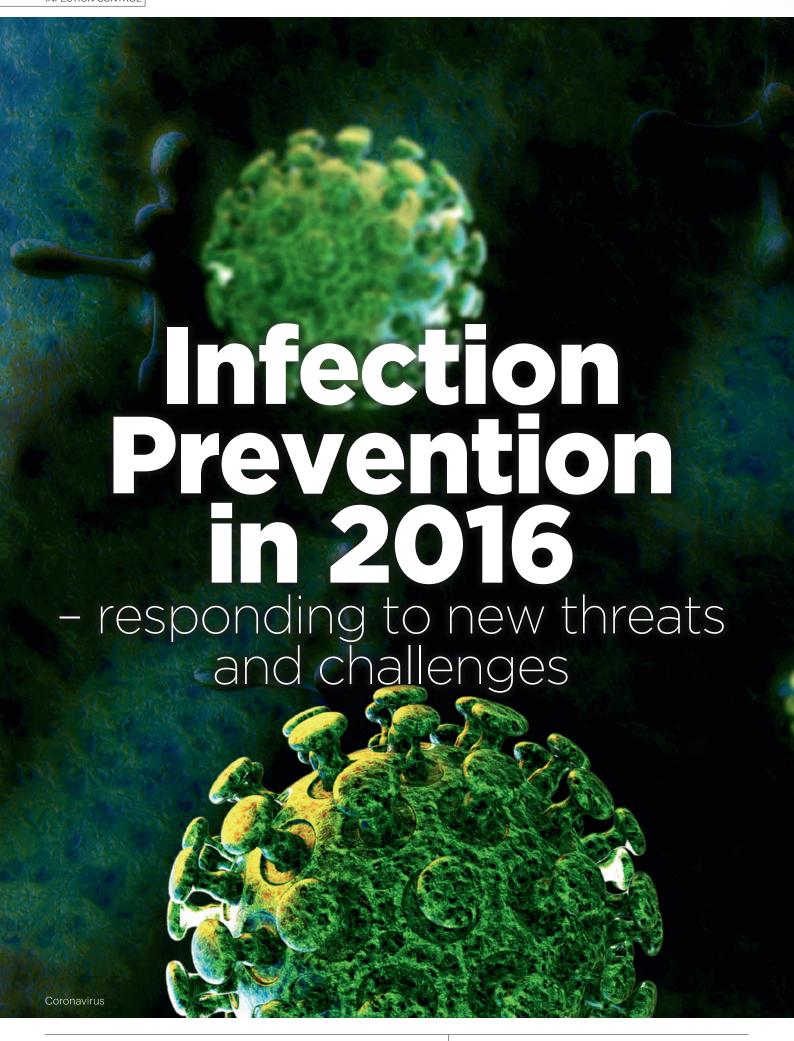


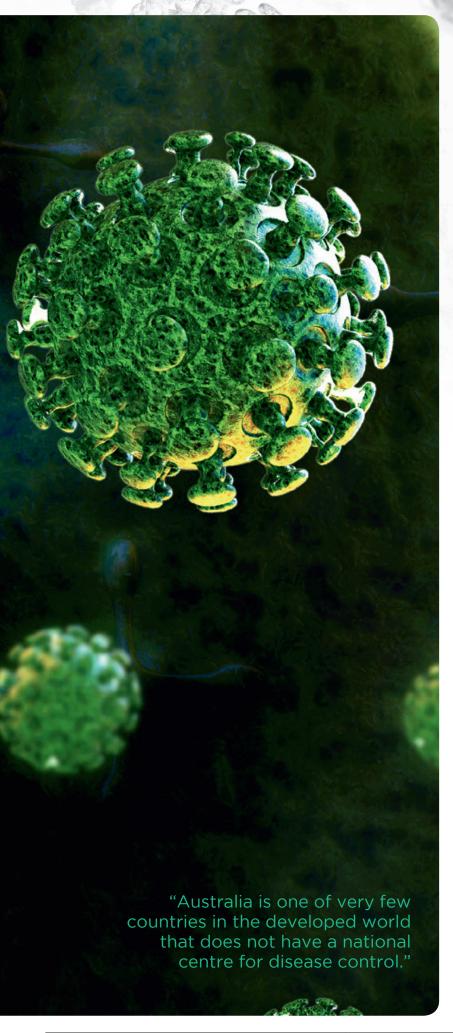


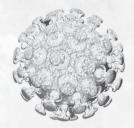
## Providing Quality Nutrition for Patients









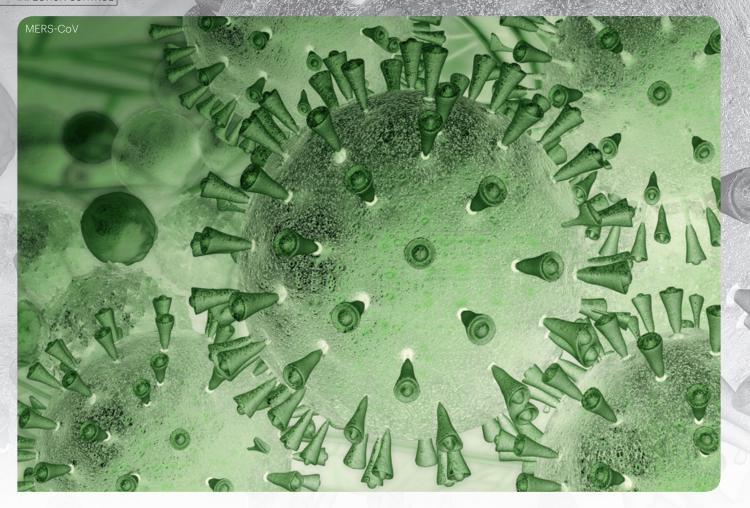


he news over the last few years has been dominated by Ebola. Although this might seem disproportionate to the disease burden - in the affected West African countries, the almost 30,000 reported cases are put in context by the millions of cases of malaria reported in the same period -Ebola has required a special international response to overcome. While Australian hospitals might feel relatively protected by geography, the report of transmissions to two nurses caring for a patient who unexpectedly presented in Texas reinforces the need to be prepared. Similarly, the large outbreak of MERS coronavirus in South Korea was a salient reminder of the vulnerability of health systems to emerging infectious diseases. These challenges have been faced before - SARS coronavirus in 2003, pandemic influenza in 2009 - and each time Australia has been fortunate not to be seriously tested.

Australia is one of very few countries in the developed world that does not have a national centre for disease control. We have a decentralised health system and each hospital develops its own response to crises like Ebola. If we had a national body whose job it was to co-ordinate our response to these situations by formulating a policy based on best evidence and deploying the necessary resources, we would be better able to ensure health and safety in a crisis. In most cases, centralised disease control agencies are established after a catastrophic failure in infection control. This happened in Canada, for example, after SARS was such a major disaster for their hospitals. My colleagues and I would like to see a national body for disease control set-up before the next serious infectious disease outbreak.

The need to keep a close eye on emerging infectious diseases around the globe cannot be over-stressed. At the moment we are watching the MERS Corona virus. Up until recently, all cases of the disease were coming out of the Middle East. Now we have seen an outbreak in South Korea.

A more immediate threat is the advent of extremely drug resistant (XDR) organisms, particularly vanA vancomycin resistant enterococci (vanA VRE) and carbapenemase resistant enterobacteriaecae (CPE). Most cases of CPE had previously been associated with returning travellers from endemic countries in Asia, as well as from hospitals in the Middle East and southern Europe. However, more recently outbreaks of both organisms have been described in Australian hospitals, and have proved difficult to treat and control. With the description of strains of E. coli resistant to all antibiotics including colistin in China, we are truly entering the post-antibiotic age, where infection prevention services will play a vital role in protecting patients. We have been relatively safe up until now but with Australians traveling widely and often, it will be  $\rightarrow$ 



ightarrow very difficult to control the spread of these organisms and we must remain vigilant. People most at risk of infection with an XDR are those who have been hospitalised overseas or have returned from overseas and had surgery within a six month period.

The incidence of Clostridium difficile (C.dfficile) infection appears to have peaked in recent years, but concern persists over the potential for "hypervirulent" strains to cause severe disease. It is unclear whether the increased reports of disease may be linked to increased awareness and testing, or more and possibly over-sensitive diagnostic tests, or whether it represents a true increase in incidence. It is clear, however, that C. difficile does appear to be an important cause of community-acquired diarrhoea following antibiotics, and can cause severe colitis in hospital inpatients. While there has been much discussion about the use of faecal transplantation, centres that have attempted this procedure have faced many practical issues such as finding suitable donors and effective screening processes. Although some of these will be addressed in an upcoming revision of an Australasian Society for Infectious Diseases guideline for the treatment of C. difficile, we await a palatable and convenient "poo delivery system" to restore patients to microbial health.

Infection prevention and control services have come a long way from the original brief to perform surveillance of surgical site infections and to promote good hygiene practices in hospital wards. Over recent years the National Safety and Quality Health Service Standards have put a number of new areas on the agenda for infection prevention services, including antimicrobial stewardship. This has led to collaborations with clinical pharmacists and many innovative approaches to education and training, to point-of-prescription decision support tools, to post-prescription audit and feedback processes. The collection of Australia's fragmented surveillance systems under the Antimicrobial Use and Resistance in Australia (AURA) project is a step forward in providing useful information to guide national policy.

Those of us that work in infectious diseases are constantly learning about new diseases - HIV and hepatitis C in the 1980s, MRSA and VRE in the 1990s, SARS and pandemic influenza in the 2000s. A characteristic of Australian hospitals is the "ground up" approach to responses, which fosters innovation and strong clinician engagement. However, this does have its limitations and while hospitals have learned many lessons on how to respond to these challenges, an improved governance structure is required to better co-ordinate hospital and public health responses. A National Framework for Communicable Disease Control has been developed that provides a vision to improve the detection and response to all communicable diseases, as well as to improve the organisation and delivery of prevention and control. Might we dare dream of an Australian Centre for Disease Control? •

"...with Australians traveling widely and often, it will be very difficult to control the spread of these organisms and we must remain vigilant."



#### **Allen Cheng**

Allen Cheng is an infectious diseases physician at Alfred Health. He is Director of the Infection Prevention and Healthcare Epidemiology Unit at Alfred Health, and Professor of Infectious Diseases Epidemiology at the School of Public Health and Preventive Medicine at Monash University.

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- Engineered for protection

INFECTION CONTROL MARKETPLACE



## Hospital waste management and hygiene

With 42,000\* tonnes of solid waste generated from the Victorian public healthcare services in a year, it's necessary for hospitals and healthcare facilities to have an effective waste management system in place. Waste management is especially important for hospitals and healthcare facilities to help stop the spread of infections, prevent hazards with the proper disposal of rubbish and maintain a clean and hygienic area.

good waste management system does more than just store rubbish. It can help hospitals reduce business operational costs as well as create a sanitary and safe working environment for employees. For many years, Rubbermaid Commercial Products (RCP) has been dedicated to providing the best and most innovative cleaning products and solutions to its customers, helping them make this usually messy work much easier.

RCP's latest innovative product, the Slim Jim Step-On, combines durability, productivity and style to assist workers in the hospital and healthcare industry handle waste more easily and efficiently.

Blend seamlessly into any environment

Hospital and healthcare facilities often have a lot of people moving around the facility so it's important to ensure all waste is removed from walkways and prevent potential trip hazards. The Slim Jim Step-On containers are designed with a slim profile and small footprint to minimise space utilisation by 20% and to fit in the tightest spaces, such as in waiting rooms or a nurse's office. Available in front-step and end-step styles, Slim Jim Step-On containers provide optimal solutions based on your space requirements.

Made with premium quality materials and finishes, the Slim Jim Step-On containers are able to blend into any environment seamlessly. The stainless steel option is made with unique fingerprint resistant material

to help maintain a clean aesthetic without staff spending time maintaining the external surfaces.

#### **Durability and infection control**

The innovative foot pedal allows for handsfree waste disposal, reducing the spread of germs that can be caused by touching the lid of the bin. The commercial-grade foot pedal is designed for extreme durability as well as its flat design makes it easier to use and clean. Unlike other step-on containers that scratch and leave marks on walls when the lid is activated, Slim Jim Step-On containers are designed with an internal hinge to keep the surrounding walls undamaged. The products feature quiet and controlled lid-closures that minimise noise and contain odours caused from medical waste. This helps to create a more pleasant. environment for patients through the reduction of noise and odours.

Manufactured with the best commercial materials, Slim Jim Step-On containers are built to outlast and outperform any other similar products in the market even under the harshest working conditions. In addition, all RCP products are developed based on the needs of the users to maximise user experience and minimise the wear and tear from frequently used products. Hospitals and healthcare facilities can spend less time replacing their waste bins and more time on running the facility.

#### Improved productivity

Slim Jim Step-On containers are designed and engineered with ease-of-use in mind. Features like liner cinches and liner retainer bands help to hold polyliners easily and securely. The cinches also help to secure liners inside the bin without hanging over the edge helping to contain the waste inside the bin. In addition, the optional dual-stream rigid liner simplifies sorting, making recycling quick and easy.

An effective waste management system ensures rubbish is stored correctly to avoid potential hazards, prevents the spread of infections and helps maintain the health of the facility. Having a system that blends seamlessly into the facility such as the Slim Jim Step-on can assist to create a pleasant and hygienic environment.

Slim Jim Step-On containers are available in plastic and stainless steel, available in 5 sizes, 8 colours and two step styles.

References

\*Victoria State Government 2010 - 2011 (http://www.health.vic.gov.au/sustainability/waste.htm)



"
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INFECTION CONTROL MARKETPLACE



# As clean as it looks?

## Using Flourescent marker audits to evaluate cleaning efficacy

urrent Department of Health (UK) guidance states that surfaces in wards should be 'visually clean' and free of 'dirt, dust and debris', but when bacteria are nearly 600 times smaller than a grain of sand is this measure effective? Research has demonstrated that quantitative methods of assessing cleanliness are far superior to reliance on visual methods and are comparable with microbiological methods, which are considered to be the gold standard (Luick, Thompson et al. 2013). This

study undertook simultaneous assessment of surfaces after environmental cleaning using an invisible fluorescent marker, ATP and visual checks and compared them with aerobic colony counts. Both ATP and the fluorescent marker provided a high positive predictive value (90%) and the visual check had a PPV of just 9%. This builds on work by Al-Hamad et al. in 2008, which reported that out of 82% of sites considered visually clean, only 30% were bacteriologically clean. Fluorescent marking of surfaces is relatively

new to many parts of the world, however a number of papers from the USA have been published that indicate the potential for this as a monitoring tool (Carling, Briggs et al. 2006). Surfaces are marked with an invisible water-soluble marker and then checked for residual dye once cleaning has taken place. A recent study by Rutala (Rutala, et al. 2013) claims that "fluorescent marker is a better tool than ATP in determining how thoroughly a surface is wiped and mimics the microbiological data better than ATP".



Carling, the pioneer of UV-based auditing in environmental hygiene, demonstrated the effectiveness in studies undertaken in high-risk clinical areas in which over 50% of surfaces were found not to have been cleaned despite two patients passing through single occupancy rooms, concluding that "the use of a fluorescent marker system in ICUs in multiple hospitals resulted in 40% more surfaces being cleaned effectively".

GAMA Healthcare, the manufacturer of Clinell, the most trusted infection control wipes in the UK, are proud to introduce the new Clinell EvaluClean system. The system comes with two fluorescent marker pens, fluorescent powder, an ultraviolet (UV) torch and our brand new EvaluClean audit software which can be used as both an educational tool and a way to evaluate and audit cleanliness.

The Clinell EvaluClean system is simple. Use the fluorescent pens to discreetly mark equipment and surfaces within a room, record their exact location with the touch of a screen and after cleaning use the torch to assess whether the invisible fluorescent gel has been removed. The unique EvaluClean software quickly and easily records the efficiency of the cleaning and generates detailed reports immediately.

The Clinell EvaluClean fluorescent gel pens have been rigorously tested to ensure that they remain wipeable from all non-porous hospital surfaces. The powerful 28-LED torch has a specific UV wavelength that provides excellent mark visibility.

Our unique auditing software system is an app delivered on a tablet and is customisable and remarkably flexible to your needs. You can select the equipment and surfaces you wish to monitor from the existing database, or add and store new ones with the tablet camera. Record when and where you have marked the equipment or surface with the UV torch and then receive reminders when to check them. The app provides you with the opportunity to record the specific cleaners ID, the 'type of clean', the 'type of room' and even whether the mark has only been partially removed.

The Clinell EvaluClean software provides the user with the ability to instantly monitor hospital wide trends, compare performance against set benchmarks and generate bespoke, attractive and easy to understand reports. The powerful reporting software allows the user to filter results to specific wards, rooms, items, type of clean and room type if required.

The Clinell EvaluClean system is the most advanced and flexible method available to evaluate environmental cleanliness and it is available FREE to all Clinell users (subject to minimum spend).













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# Smart Bandages

# - Taking wound management to a new level

Smart bandages are not far away and will change the way we manage wounds in the clinical setting. *Professor Nicolas Voelcker* is at the forefront of this research and here he explains how silicon-based nanomaterials facilitate the management of wounds.

he inability to measure the pressure in a bandage can in some cases result in a patient wearing a bandage for an entire week that is of no therapeutic benefit. When a pressure bandage is applied, for example to a patient with venous leg ulcers, there is currently no way to assess if the right sort of pressure has been applied or if the bandage loosens through normal activities like sitting, standing, and laying down.

The technology that we have developed at the University of South Australia fits small sensors between the layers of the bandage that monitor pressure.

The sensors continually monitor pressure and send information to a hand-held device such as a smartphone or a tablet so that data can be logged either by the patient or clinician. This data can then be regularly accessed by the clinician who can then check if the applied pressure is suitable. This means more effective management of patients both in hospital and in the community who have chronic wounds requiring pressure bandages and better management of resources.

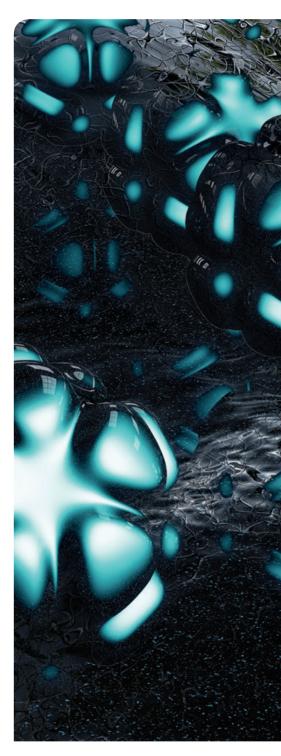
The question of resources is front and centre in most healthcare settings and if you have a system that can prevent unnecessary work, like physically redressing an already well-fitting bandage, and channel

that time into refitting a loose bandage in another patient, I would see that as having advantages across all healthcare facilities.

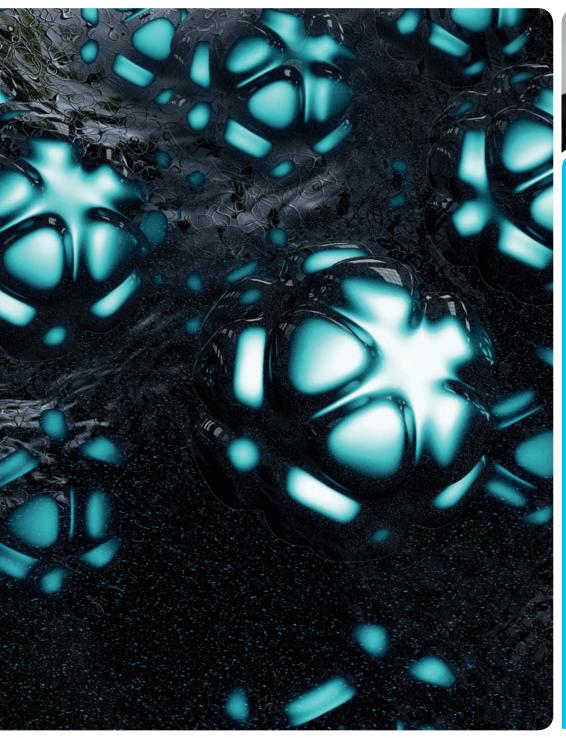
#### pH and Temperature

We have also developed smart dressings that monitor other parameters in the wound such as humidity, moisture, pH and the temperature as well. The only way currently for a clinician to check the progress of a wound is to take the dressing off and check the wound. This can cause the patient pain; it consumes resources and time and when you are removing a dressing you may remove some of the cell layers that have formed over the wound and this can set-back the wound healing to some extent. So it would be advantageous to be able to tell if there was a need to replace a wound dressing or if it can be left in place.

So we have developed a set of technologies to affect this diagnostic capability. One of these involves sensors embedded in the dressing that measure moisture and temperature and these sensors send the data to a smartphone or tablet. The nurse or clinician is then alerted via smartphone or tablet when a dressing is too dry or too wet and needs attention. Infections in chronic wounds are common and if there is a colonisation of a pathogen that forms a biofilm, this can delay the wound healing



"The unique element to our research is in the design of patches that contain no organic molecules that could potentially contaminate a wound. Instead, the sensors react to a physical change in the environment."





# Professor Nicolas Voelcker

Professor Nicolas Voelcker, since 2015 has held the Strand Leader role for Biomaterials and Nanomedicine and the Lloyd Sansom Chair in Biomaterials and Nanomedicine in the Future Industry Institute, University of South Australia. He is Node Leader in the Australian Research Council Centre of Excellence in Convergent Bio-Nano Science & Technology.

His key research interest lies in the fabrication and surface modification of porous semiconductor materials for applications in biosensors, biochips, biomaterials and drug delivery. A core research activity in his laboratory is the study of porous silicon based nanostructures and their surface chemistry.

Authoring over 280 peer-reviewed journal articles and over 4700 citations (h-index 36), he has received fellowships from the German Research Foundation (DFG), CSIRO, Alexander von Humboldt Foundation, is a Tall Poppy Science Award recipient, South Australian Scientist of the Year 2015 Finalist and the Australian Innovation Challenge. He is serving on the College of Experts of the Australian Research Council.

progress or cause sepsis in the patient. An increase in temperature is a good indicator that a wound is inflamed and possibly infected and this is another of the parameters that can be monitored with our sensors.

This smartphone technology is one of our areas of research and the other is dressings that incorporate patches of sensors that can change colour in response to changes in temperature. This causes the bandage to change from green to red if the temp is becoming febrile for example. Our patches that detect changes in pH, another

important indicator of infection and stages of wound healing, change colour by interacting with light.

So with these types of smart bandage, the clinician or nurse can say, "Right, there is no colour change in this bandage so let's leave the dressing on and we can check on it later today." This has great benefits for both healthcare professionals and patients.

#### Keeping it Clean

Research into smart bandages is going on

all over the world. The unique element to our research is in the design of patches that contain no organic molecules that could potentially contaminate a wound. Instead, the sensors react to a physical change in the environment.

Our pressure sensor technology is at an advanced stage where we are keen to start clinical trials and the smart dressing project is at a prototype stage as well. We are seeking funding to continue this work and to start testing the technology with real patients in a clinical setting. •





# Save Lives

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undreds of lives have been saved by Australian hospitals that have managed to slash the number of people catching infectious bugs while in care through the use of hospital grade hard surface sanitisers. However, rates still vary widely between hospitals, leading the National Health Performance Authority to warn hospitals with higher rates that they should learn from those where infection rates are up to three times lower, thanks in part to the use of hard surface sanitisers.

The latest figures from the authority, released in April 2015, show the number of people developing serious blood infections caused by the potentially deadly "golden staph" bug fell by 6 per cent in the last financial year. This includes cases of the "superbug" MRSA, which is resistant to commonly used antibiotics.

Professor of infectious diseases at the Australian National University Peter Collignon said the rates of blood infections had halved over the past decade, saving hundreds of lives thanks in part to the use of hard surface sanitisers

"If you prevent one or two thousand cases per year, which we probably have done over the past 10 years, that literally is between 200 and 400 fewer deaths per year in Australia," he said.

"That is also preventing a lot of suffering, and we are saving health care costs because people aren't in hospital longer than they need to be".

However, Professor Collignon warned that hospitals should not become complacent - many cases were still preventable with proper infection control such as staff making sure they cleaned their hands properly, and the use of hard surface sanitisers.

Australian company Eucalip Bio-Chemical Group Pty Ltd has innovatively manufactured a product, which is conveniently packaged in a sachet and ideal for everyday use as required - simply add water and safely and effectively sanitise your area. There are two hospital grade strengths in the Det-Sol range. Det-Sol 500 is used for sanitising hard surface areas, such as areas of food preparation and areas where general infection control is needed. Det-Sol 5000 is used in "dirty areas" where blood and body fluid spills may occur and a higher concentration of disinfection is required. Det-Sol is currently used by major hospitals, institutions, pathology laboratories and for military use nationally.

#### References:

National Health Performance Authority Performance Report (9th April 2015)



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The S-Monovette® can also be used as an evacuated tube by drawing the plunger fully down and snapping it off immediately prior to blood collection. This creates a fresh vacuum and ensures a precise filling volume, ensuring a correct dilution ratio.

The reduced vacuum pressure in the S-Monovette® drastically reduces the rate of haemolysis and vein collapse, meaning increased sample quality and reduced costs associated with repeat collections. Furthermore, unlike pre-evacuated tubes, the S-Monovette® does not have to hold a vacuum for many months after manufacture, which allows the membrane stopper to be thinner and more easily penetrated by the needle sheath. This minimises the movement of the needle in the vein when attaching the tube, ensuring optimum patient comfort.

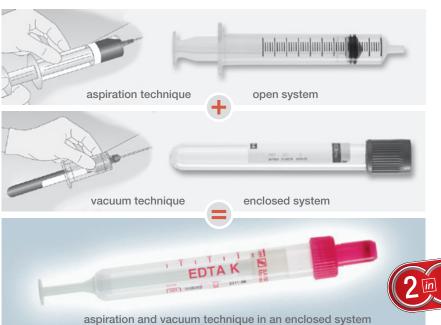
The S-Monovette® needle is ready to use so that there is no need for assembly to a holder. The needle is of a compact, low profile design, which reduces the chance of haematoma by allowing for a reduced angle of puncture and eliminates the possibility of needle stick injury caused by assembly of the needle and holder. The compact design also results in approximately one sixth of the sharps volume caused by using a pre-evacuated system, giving significant cost savings.



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# Alarm Fatigue

# Big Data in practice - making real changes in healthcare delivery and improving patient outcomes.

Big Data is the new buzz but don't be put off. According to Dr Veena Goel, Paediatrician and Clinical Informatics Fellow at Lucile Packard Children's Hospital Stanford, amidst the hype are some real applications for Big Data to improve the quality of healthcare delivery. Dr Goel was a keynote speaker at HISA's Big Data conference in Sydney last year that brought together leaders in healthcare to share their experiences of working to harness the power of Big Data.

# Dr Goel, when we talk about 'Big Data' and 'analytics', what are we describing?

"In the current era of rapidly growing technological capacities, our ability to capture, collect, and save data has seen an exponential rise and the result is the concept of 'Big Data'. I think of analytics as allowing us to process data in such a way that we can make meaningful interpretations from it and it is one of the biggest challenges associated with Big Data."

# How can Big Data improve treatment delivery and patient outcomes?

"In healthcare, the gold standard we aspire to use to drive medical decisions is evidence-based randomised control trials. However, the majority of decisions that clinicians are faced with must occur in the absence of such evidence. I think this is where we have an opportunity to leverage Big Data within our learning healthcare system. Meaningful analysis and interpretation of Big Data can allow us fill in so many of the gaps in what we do not know in healthcare."

#### Can you share some examples of how Big Data and analytics are being used to make a difference in the Australian healthcare system?

"Absolutely. I had the privilege of participating in the Big Data 2015 conference in Sydney, where I learned about so many innovative examples of the use of Big Data and analytics in Australia. From the national e-health strategy to genome sequencing, to population health efforts, the contributions to the field are invaluable. The work of Professor Enrico Coiera and colleagues in the Centre for Health Informatics at Macquarie University has made profound contributions to helping advance our understanding of issues with healthcare delivery and improving healthcare safety and quality."

# All over the world we are hearing stories about how Big Data is being used to predict epidemics and prevent avoidable deaths. Can you comment on this?

"The possibilities and opportunities for using Big Data in population health efforts on a global scale are real and exciting. For example, the Google Flu Trend functionality showed great accuracy in predicting the influenza season. Mobile phone tracking efforts have been employed to track cholera in Haiti after the earthquake and to predict the spread of the Ebola epidemic in Africa."

"But as these Big Data applications are being discovered and implemented, we are learning a lot about the challenges and limitations in its use as well. Issues such as false or inaccurate predictions and conclusions and management of public expectations plus data security and privacy all have ethical implications that we must be mindful of."

# Accumulating the data is one thing - analysing and applying it effectively is another. Would you agree?

"Yes and accumulating tremendous quantities of data brings up issues of data integrity such as 'how accurate is the data and can we trust it?' 'Where do we keep the large amounts of data?' 'How do we keep it secure and ensure patient privacy?' And these issues are just skimming the surface!"

"Once the data is collected and accumulated then we try to analyse it in such a way that we can draw conclusions that can be applied back within the healthcare setting. But the data comes in so many different forms, can be fraught with bias and can be very difficult to draw accurate and reliable conclusions from. And once we get to the point of having achieved some sort of reliable analysis, managing change within the healthcare setting poses its own unique challenges."

"Managing change amongst clinicians is not an easy task, especially within the complexities of the healthcare system, where day-to-day decisions are often life-or-death!"

#### Big data has the potential to drive real change in models of treatment delivery. Can you use your experience with alarm fatigue to illustrate this?

"There are so many treatment models that are currently employed with little underpinning evidence. Let me give you an example. The parameters used to monitor children in the hospital setting have for the longest time been based on anecdotal and small-sample observations."

"In the alarm fatigue trial my colleagues and

I did last year, we leveraged vital sign data from over 7,000 patients extracted from the electronic health record and bedside monitors, to better understand and define data-driven thresholds for age-based heart and respiratory rates in children¹. Our analysis revealed that by using data to drive how we define normal vs. abnormal vital signs, we could safely decrease hospital alarms by over 50 percent."

"Any of you who have had a loved one in the hospital can relate to the constant noise of alarms and beeps that go off and how often these alarms are not clinically significant or meaningful. We have managed to use Big Data to change our approach to monitoring children in the hospital. This is just one small example of how Big Data has driven a change in the way care is delivered."

# What prompted you to undertake this trial into alarm fatigue?

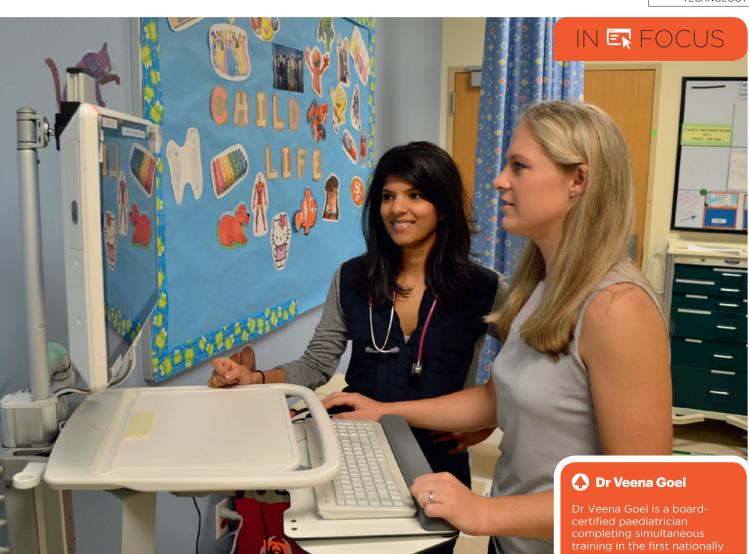
"I clinically practice medicine as a paediatric hospitalist, so I take care of hospitalised children and deal with monitor-alarms on a daily basis, so this project really aligned well with my interests as a doctor and also with my clinical informatics training."

"The main reason I chose to undertake the work to reduce alarm fatigue in our hospital was because the Joint Commission for Accreditation of Healthcare Organizations here in the US released a Sentinel Event Alert back in 2013 identifying alarm fatigue as a huge problem in the clinical setting. They quoted that 85-99 percent of alarms do not require clinical intervention and that alarm fatigue can lead to patient death." <sup>2</sup>

"Subsequently in 2014, the Joint Commission released a National Patient Safety Goal on Alarm Safety and essentially in it, required that all hospitals establish policies and procedures for managing alarms by January 1, 2016." <sup>3</sup>

# What is the difference between alarms in clinical settings for adults and those for children?

"Alarm settings are typically quite different between adult and paediatric clinical settings because what we consider "normal" in the two populations is very different. Not only that,



"normal" in children is very dependent upon age so a normal heart rate in a 2 month old is different from a 2 year old and a 12 year old!"

"Because of this, alarm settings are agedependent in paediatrics. But in adults, typically the normals are defined the same in all people over 18 years of age. There is just so much more variability in the paediatric populations and there is very little research or literature guiding us with regards to how to go about monitoring them."

#### How has reducing alarm fatigue made a difference to the working environment for nurses?

"The work that I did to define new data-driven vital sign parameters for children (in 10 different age categories) for heart rate and respiratory rate has actually been implemented at our hospital. We started by piloting the new HR and RR parameters on one unit of our hospital in October of 2014 and demonstrated just over a 30 percent reduction in heart rate alarms."

"Since then, we have further revised our respiratory rate parameters and launched the new HR and RR parameters across all of the paediatric wards and the paediatric ICU and cardiac ICU at

Lucile Packard Children's Hospital Stanford. We are currently in the process of analysing alarm data since we went live at the end of August, 2015 but nurses are reporting that they feel fewer alarms are going off, and that the workflow around alarm management has improved."

#### What do you see as being the foreseeable challenges and opportunities for Big Data in healthcare?

"We have just begun to realise the opportunities for Big Data in healthcare in enabling us to improve safety and efficiency, fill knowledge gaps, cure disease, predict epidemics, and revolutionise population health. And with each discovery and step we make, we are uncovering and understanding the concurrent challenges."

"One big challenge I foresee is that the healthcare informatics workforce is still young and underdeveloped. We need more clinical informaticians who are educated in clinical medicine, but who also have intimate knowledge of the technologic systems that we are striving to improve upon." 🛟

assets/1/18/sea\_50\_alarms\_4\_5\_13\_final1.pdf>

"National Patient Safety Goal - Joint Commission." 2014. 21 Jan. 2016 <a href="http://www.jointcommission.org/assets/1/18/">http://www.jointcommission.org/assets/1/18/</a> jcp0713\_announce\_new\_nspg.pdf>

fellowship and a paediatric hospital medicine fellowship,

improving bedside monitor

Patient Safety Goal by the

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Goel's passion is in harnessing

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leadership skills in healthcare

IT delivery to improve patient safety and quality of care.

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"Sentinel Event Alert Issue 50: Medical device alarm safety in ..." 2013. 21 Jan. 2016 <a href="http://www.jointcommission.org/">http://www.jointcommission.org/</a>

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# The hospitals of tomorrow

As a result of many healthcare innovations over recent years, hospitals have been modernised to such an extent that pioneering new products and digital advances are helping to improve people's lives far beyond what many had anticipated.

ith these next-generation advances in healthcare innovation, however, hospital efficiency becomes even more important. Applied technology that is caring, impactful and delivers meaningful benefits must both make a difference to people's lives and work in tandem with budgetary concerns. That is the essence of a healthcare revolution.

The big challenge, therefore, is to meet the growing demands of and for care, and still keep health services solvent. One approach seeks to move away from silo models of service provision towards the development of well-integrated healthcare services. Sceptics, however, have observed that up to now efforts to do this have really involved little more than the transfer of resources from one silo to another.

But things are changing for the better and healthcare innovations that focus on costs and efficiency have the ability to revolutionise the system.

For many years, acute care hospitals have struggled to keep up with the explosion in healthcare innovations and the data they carry. While some healthcare providers have leapfrogged using information and communications technology (ICT) to manage and monitor clinical data, they have been the exceptions rather than the rule. Within a decade such limitations based on ICT access will be distant memories.

Furthermore, the effective and efficient use of this data will help to reduce costs of service provision, to break down barriers between clinical specialties and service providers, to improve transparency for patients, and to deliver a more holistic patient experience. Inevitably, the slowest part of this change will be cultural.

Despite the rapid pace of clinical advances, traditional clinical structures have been slow to evolve, but driven by the stick of budgetary expediency and the enticing carrot of exciting new ways of delivering improved services, healthcare innovation can inspire change.

If big data and cheaper ICT are going to be the engines of change, how will this be experienced on the ground, within hospitals? How will patients' benefit and hospital efficiency be transformed? A number of trends are already emerging that will enable real-time collaboration between clinicians and patients to improve outcomes while at the same time lowering costs.

For instance, using high-tech procedures that integrate multiple tools and technologies, clinicians will treat complex problems in patient-oriented ways that reduce 'competition' between existing clinical disciplines—for example, between cardiac surgeons and interventional cardiologists.

Healthcare innovations for telehealth capabilities will enable hospitals to discharge more patients, more quickly and to support recuperation in other settings, including their own homes. Active monitoring will ensure timely interventions, should they be necessary.

Using data to refine their focus, clinicians will be able to move away from an excessive 'erring on the side of caution' in diagnosis and treatment towards a targeted approach. This will encompass everything from radiation exposure for imaging to minimally invasive procedures.

Most of the people connected to tomorrow's hospital will not be there physically. Instead, the hospital will operate as a virtual hub, delivering clinical expertise to patients through local distributed centres that cover everything from surgery to rehabilitation.

Finally, using secure connections, tomorrow's hospital will share more information than ever before, integrating information from multiple sources.

Everyone—from patients and family members to doctors, nurses and whoever is ultimately paying the bill—will have access to relevant information in real time thanks to new innovations in healthcare.

#### Pa int

# Partnering to create integrated healthcare solutions

Philips is realising this vision of the hospital of tomorrow by thinking beyond individual products. Today, we think only in terms of integrated solutions – unique combinations of hardware, software and services that Philips innovates with its partners and customers to solve specific problems. Philips is no longer just a technology company. It's an innovative provider of integrated health technology solutions and services, transforming us from a vendor to a truly accountable partner.

With our wide-ranging expertise in clinical and hospital settings we are already teaming up with individuals, hospitals and health systems to understand their needs, provide integrated solutions, and offer performance-based business models.

We look forward to continuing to accelerate healthcare innovation and to playing a role in new partnerships, new innovations and new solutions. Digital technologies are the enabler of transformation in healthcare systems and Philips is determined to drive that transformation.



Philips has teamed up with **Mount Sinai Health System** in New York to create a state-of-the-art digital image repository of patient tissue samples.

The collaboration aims to advance clinical research and ultimately enable better care for complex diseases, including cancer.



Philips partners with Stockholm County Council and Karolinska University Hospital to create a leading and highly specialised centre of healthcare excellence.

Goal is to create the hospital of the future, reducing population health costs, delivering highly specialised care and providing open innovation for a 14-year term with the possibility for Karolinska to extend.



**Banner Health** and Philips teamed up to address the shift toward value-based care and increased penalties for readmissions.

By combining clinical insights, telehealth and care coordination solutions with consulting services and data analytics, Philips is helping Banner Health accelerate their transition to patient-centric, value-based care.

# The need to transform healthcare

As our fast-growing world population gets older, with more chronic and lifestyle-related diseases, our healthcare systems are struggling to manage the increased demand for care while keeping costs under control.

#### The world population is growing







Fast population growth requires **improved access to care** 



An aging population with more chronic and lifestyle-related diseases puts a focus on healthcare affordability



opportunities for **efficient**more outcome-based health
management



In the age of the quantified self, consumers are more actively engaged in their health, and health is an engine for today's economy

#### Making a difference across the health continuum

At Philips, we are creating integrated solutions — combinations of hardware, software, and services — with data and the Philips HealthSuite digital platform as key enablers. We aim to provide more predictive and personalised care to empower people to take charge of their own health, and support the transformation to new sustainable, value-based healthcare models across the healthcare continuum.



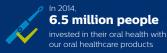
#### Digital technologies enable care across the continuum

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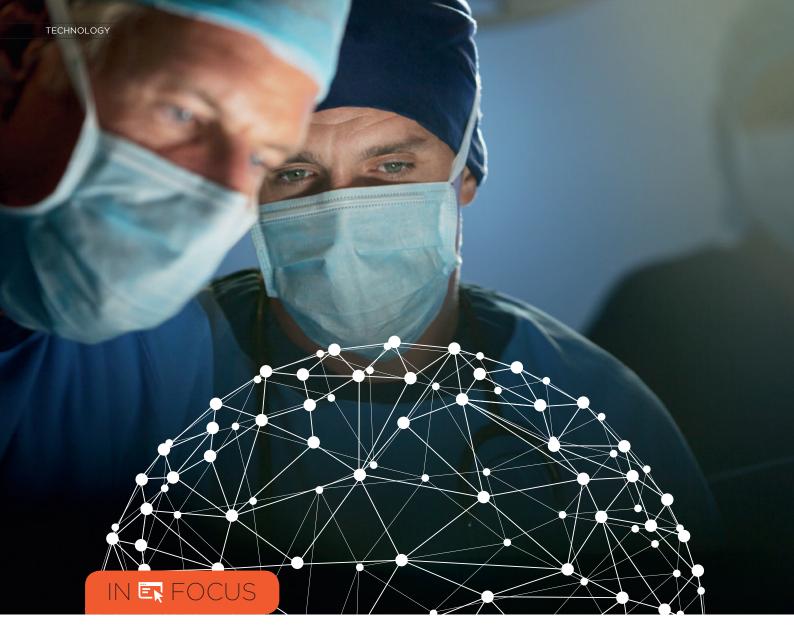
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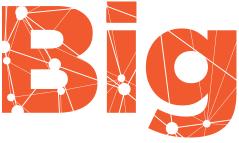






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# - A surgeon's perspective

Most health care providers would agree that favourable treatment outcomes are their biggest priority. Unfortunately, things don't always go to plan and sometimes complications happen. Professor Andreas Obemair explores how Big Data could make all the difference.

ig Data refers to the concept of very large datasets that can be linked to one or more other datasets. While Big Data is often referred to in the context of business, in this article I will focus on its potential in the healthcare environment.

Many years ago, when I was a medical student, databases were few and far between. Research involved trawling through journal articles at the university library. I physically studied countless hospital charts and extracted information from 500 patients to research the association of obesity with breast cancer prognosis. Big Data did not exist then.

#### And now.....

Recently, my research group showed that surgical removal of the uterus, tubes and ovaries improves survival chances in breast cancer sufferers. We identified 20,000 women diagnosed with breast cancer from the Queensland Cancer Registry and linked this data with data from the Queensland Hospital Admitted Patients Data Collection and the Australian National Death Index. Compared to 30 years ago when it took countless hours to extract data from 500 hospital charts, the time it took to obtain information from 20,000 records was minimal and the impact was much larger.

'Doctor, what is your overall complication rate for my procedure?' Questions like these would have caused me discomfort because I could not give them a direct answer.



Professor Andreas
Obermair MD
FRANZCOG CGO

Professor Andreas Obermair MD FRANZCOG CGO is a gynaecological oncologist practicing in both public and private hospitals since 2003. Andreas leads research into the predictability of surgical complications and founded SurgicalPerformance.com, web-based software for clinical audit and analytics of surgical outcomes. ao@surgicalperformance.com

An increasing number of surgeons these days collect data on surgical outcomes. For doctors, knowledge about their complication rates has clinical benefits that have been proven across surgical specialties.

The exact mechanism by which audit improves outcomes is still poorly understood. Some experts believe that if a clinician puts a focus on health outcomes, actions consistent with achieving favourable outcomes will automatically be prioritised. Research also suggests that a surgeon's performance may improve if they feel observed.

Data collected for clinical audit is used to measure surgical outcomes, such as readmissions to hospitals or surgical complications. By predicting clinical indicators, we can assist with the development of less troublesome procedures for certain patient groups. Data collected for audit could also be used to inform the design and even replace clinical trials as the primary source of information on the effectiveness of surgical devices in certain circumstances.

For my personal gynaecological cancer practice, auditing my surgical cases has been invaluable in improving countless clinical outcomes and patient satisfaction.

If a patient would have asked me a few years ago "Doctor

- What is your overall complication rate for my procedure?
- How often do you operate on patients of my weight?
- What is your return to the operating theatre rate in patients like me?"

Questions like these would have caused me discomfort because I could not give them a direct answer. Since I now audit my surgical cases, I can say instead that "In my practice, we capture all data from surgery and its outcomes – good and bad. Specific to your situation, the overall risk of complications is x%. Because of your medical history and your body size it will be closer to y%."

Will the average patient actually grasp the meaning of the exact numbers? Maybe not but in my experience, providing a patient with tangible complication rates is not only useful to empower the patient-doctor relationship, but is also a key ethical component of informed consent.

#### Limitations of Big Data

Lack of standardisation remains the biggest obstacle in making Big Data effective. For example, what actually constitutes a 'viscus injury' and why does a 'serosal defect' fall short?

In order for Big Data to achieve clear goals, those responsible for the research need to be mindful of the type of data that should be collected.

Government institutions, funders of health care (payers) and hospitals routinely collect Big Data for medical billing purposes. In the past I have been asked to review the clinical outcomes of hospital departments to advise on clinical improvement strategies. The data that I was given for analysis was the billing data described above, which some still believe is sufficient to draw clinical conclusions. Unfortunately, this is not the case, for a variety of reasons.

The data may not be broken down by procedure type.

Diagnostic laparoscopies, hysterectomies and other procedures are all mixed together and the surgical approach remains obscure, which is problematic as the expected outcomes are vastly different.

Confounders are often not accounted for. Complication rates in a young, healthy patient are vastly different to elderly patients and patients with cancer will attract higher complication rates than patients who require surgery for benign conditions.

Despite all this essential information being missing in such datasets, information about the main surgeon is available easily implying that the main driver of outcomes is the operating surgeon, which is inconsistent with current scientific knowledge.

Finally, the statistical tests that are applied sometimes lack scientific merit and normal variation of observations are often not taken into consideration.

When presented with data that is; not exact enough, leaves out crucial confounding factors, misses key sources of complications and unduly exaggerates the contribution of certain variables, how could a hospital possibly be asked to draw accurate conclusions?

# Next Steps and Opportunities for Big Data

In the world of surgery there are untapped opportunities that could lead to massive health benefits, improved patient satisfaction and savings in health care expenditure.

- Standardise Data is more useful when it is interpreted using standardised coding.
- Engagement of stakeholders The needs of medical staff, health administrators and patients should be considered right from the beginning. All parties need to agree if Big Data is to improve health services and support research.
- 3. Choose meaningful data For audit, only data fields that contribute to the understanding of health outcomes should be collected.
- 4. **Apply accurate methodology** Statistical tests need to consider confounding factors and normal variation.
- Ensure confidentiality Collection and analysis of sensitive data will only drive positive change if privacy is guaranteed for both the patient and surgeon.

#### Challenges to overcome

As an active surgeon with a profound interest in health outcomes, I see two main challenges for the future:

- a. Will hospitals be able to engage with medical specialists and patients, seek the conversation, set expectations and respect confidentiality rather than control doctors and exert power?
- b. Will my fellow surgical colleagues of various specialties be convinced that maintaining or even improving clinical outcomes is possible if we don't even measure them? In order for clinical outcomes data to remain private and confidential without administrative control, doctors must take accountability and responsibility upon themselves. •

TECHNOLOGY MARKETPLACE



# A simple solution to a complex problem

he only printer designed specifically for wristbands, HC100 has been built to flourish in the healthcare environment.

The HC100 allows medical staff the ability to easily and wirelessly track patients, access all the necessary information with a single scan, and monitor the patient's condition. It has been designed specifically for use in hospital environments, and tested to endure a typical hospital stay.

The HC100 ensures better patient care, offering:

- Smart technology that senses the wristband type and auto-calibrates the settings for optimised print quality and reduced waste
- Resistant to most hospital disinfectants

   the wipeable plastic is designed to
   withstand a variety of disinfectants,
   chemicals and cleaning solutions
- Prints all industry-standard onedimensional and two-dimensional barcode symbologies

- Easy-to-load cartridges
- Able to connect via USB and Serial interface, Ethernet or Wirelessly

With only minimal training required, staff can simply pop the wristband cartridge into the printer and the HC100 automatically detects the wristband size, calibrates, and prints - and the wristband barcodes remain scannable for longer than the average patient stay. Once the cartridges are empty, they can be recycled.

Zebra also provides a wide variety of longlasting wristbands

with patent-pending antimicrobial material, in a variety of sizes including infant.

By integrating the HC100 wristband printer with a range of mobile applications and Internet of Things solutions running over a wireless network, medical professionals will be able to do much more than identify patients and access records - the wristbands can be used to verify medication, order tests, collect specimens and much more - all in real-time and from the patient's bedside.







For more information on how you can benefit from Zebra's healthcare solutions, please visit www.zebraapac.com/healthcare or email AKwong@zebra.com

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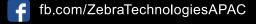
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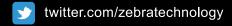
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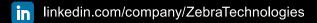
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# Taking Neonatal Care into the future

Neonatology is a challenging subspecialty of paediatrics. Practitioners constantly make complex decisions that affect the life and health of newborn infants. They need to be experts in their field and stay up to date on the most current and relevant practices. However, due to the immense volume of information in this field, senior practitioners with considerable experience still seek advice from colleagues.



For many years, the Australian industry standard for refreshing neonatal knowledge has been the Pocket Notes on Neonatology (PNON) 2e. This was revised and became the App Pocket Neonatology 3e. This book and app offers guidance around the care of premature infants. However, issues with the App (including privacy and confidentiality of using videos of patients), a poor user experience and cumbersome layout, meant the quide had become obsolete.

Associate Professor Mark Davies, of the Grantley Stable Neonatal Unit\* (GSNU), saw an opportunity to revolutionise the way practitioners accessed crucial information from the PNON and PN. He approached Croomo to help create a solution and together, they defined a strategy to develop a range of educational assets to assist staff and students currently practising neonatology.

The ultimate goal was to take the existing content to an online platform, specifically for mobile devices. Practitioners already had access to smart phones, either in their pockets or at their desk. This platform created a universal access point and avoided the need to carry any additional documentation.

The initial phase of development involved the creation of the Well Newborn Baby Assessment app. Available on iTunes, the app uses high-quality visuals, 3D animation and an interactive user interface. The app features a 3D animated demonstration of a routine physical examination of a newborn baby. This offers learners the ability to review the procedure so they can be confident performing an accurate and complete examination.



Jason Reed Instructional Designer www.croomo.com

Practitioners are required to retain huge amounts of detailed information and regularly collaborate with supervisors to ensure they take the right course of action. This app was never intended to replace the advice of colleagues, supervisors or senior staff. Instead, it supplements existing knowledge with justin-time refresher knowledge for situations where a supervisor may not be readily available. This provided access to the relevant information when and where it was required.

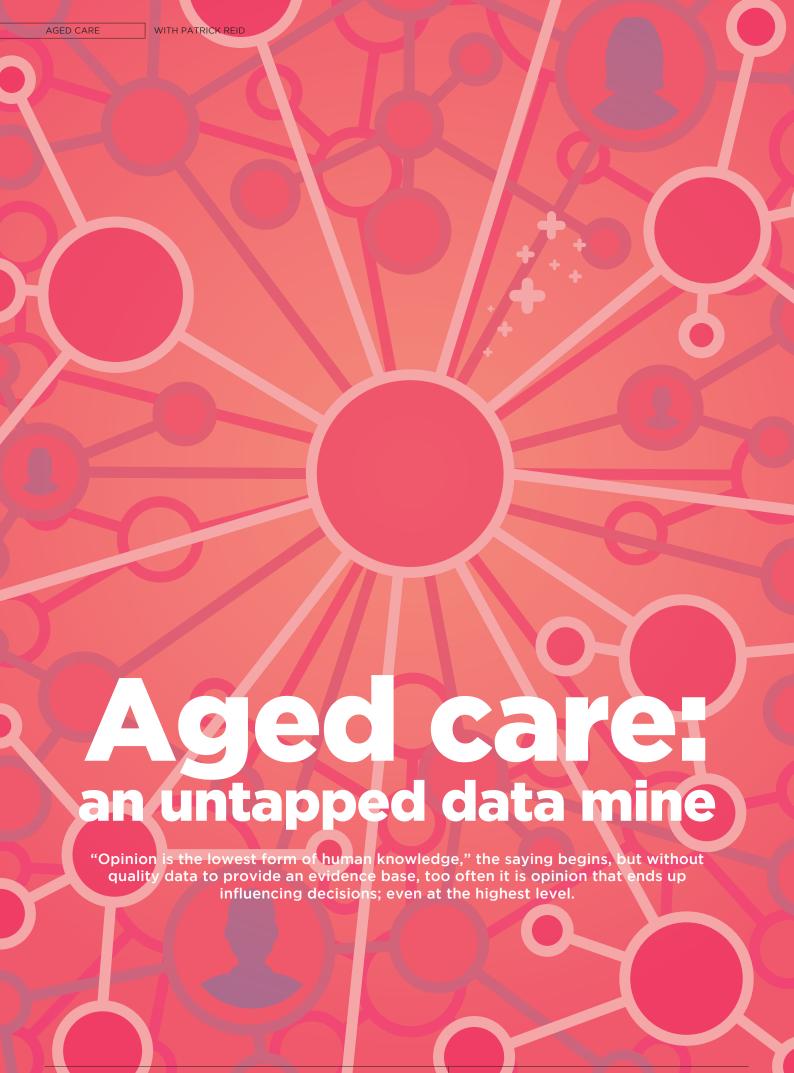
Croomo also developed a range of 3D animated videos that illustrate detailed neonatal procedures. These include everything from umbilical vessel catheterization, resuscitation techniques to tracheal intubation. Each animation offers practitioners an unparalleled perspective, allowing them to see an internal view of the procedure and its effect on the patient.

Traditional teaching methods have struggled to demonstrate many of these procedures. This was due to a number of factors, including the availability of patients and opportunities to demonstrate unique procedures.

In comparison, 3D animation provides complete control over what can be observed. Accompanied by professional narration, each video offers the most accurate and consistent delivery of the relevant information. Animation has the added benefit of being easier to update than live action, avoids seeking consent from patients, and thus extends the shelf-life of these videos.

The app and its accompanying animations are an invaluable resource to the Neonatal field. They have updated the content of the PNON and PN into a modern, relevant and accurate educational resource.

\*Grantley Stable Neonatology Unit: Located at the Royal Brisbane and Women's Hospital, the GSNU admits over 1,500 babies per year and manages all varieties of neonatal conditions including extreme prematurity, and congenital anomalies. It provides all levels of neonatal care from care of the well baby to intensive care.



he value of robust data and its ability to inform research and service delivery across any consumer-centred industry is undeniable. It is no different in aged care, yet there is a chasm between meaningful data collection and effective information management in our industry.

Being predominantly government funded means various Departments collect a large amount of data that is not always been made available to the age services industry, nor used in an informative manner. Too often the focus is on direct applied cost, rather than a more holistic view of the cost benefit of funding aged care services to enhance capacity or capability to reduce pressure on hospital and ambulatory services, primary health care, or crucially to meet burgeoning demand.

We know that health care costs rise with age and hospital costs are the highest for people aged over 75 years. We also know that the number of people aged 75 years and over is projected to increase by about 4 million by 2060. The silo effect of primary health funding, expenditure and outcomes being managed at state level, and aged care costs are managed at federal level, leads to an incomplete data set, which means no one has the full picture of what is really going on.

While age service providers have to provide their raw data for reporting purposes, due to the gathering method or privacy legislation, it is often without context, which decreases accessibility and limits its use. Such information is essentially the master key to enhanced service delivery and continuous improvement of age services but red tape and bureaucracy prevents us from using it in 'big data' sense.

As debate continues about "quality" and what quality means to consumers, to government and to the quality agency, the difference in opinion amongst these stakeholders is becoming increasingly profound. The only way in which we can ensure policy decisions relating to quality actually reflect consumer experience through evidence is by capturing the right data, at the right time for the right purpose.

By this I do not mean the Liberal Government's idea of turning the My Aged Care gateway into a Trip Advisor-esque opinion-led forum. To suggest that obtaining age services or moving into an aged care facility warrants the same consideration as planning a week long holiday is offensive to both providers and consumers. Far greater consideration goes into determining appropriate age services for an individual, with each factor weighted differently for every individual. That My Aged Care prioritises geographic location above all other factors right now demonstrates a lack

of will by government to engage with data and use it in a more meaningful way.

It also highlights the need for an improved interface between government and providers to define the measurability, appropriateness, scalability and affordability of revised and future data collection strategies.

From a health perspective, improved data capture from within aged care – both residential aged care and home care providers – has huge potential for enhanced health service delivery and population health at local and national levels.

Improved data collection and sharing presents myriad opportunities for improved readiness, enhanced care and efficient use of public money. At a population health level, near time mapping of population shifts or conditions such as dementia could allow for more targeted services and better integration between local health service capabilities and aged care providers. The adage of 'failing to plan is planning to fail' means government and stakeholders need to invest more time in effectively analysing data and implementing a long term approach to improving service responses to issues such as the growing area of dementia.

Examples of bandaid solutions in the absence of considered analysis is the Severe Behaviour Response Team (SBRT) concept for dementia. Besides the obvious issue of time lags in reaching people who are in heightened distress, LASA remains concerned the flying squads will not build capacity and capability within the workforce. Aged care staff need to be able to deal with severe behaviours when they occur, rather than have discrete specific interventions at a fixed level.

In recognising that the Dementia Behaviour Management Advisory Service (DBMAS) program and some other dementia-specific programs will be rolled into a single framework during 2016-17 to reduce overall funding in this space, the SBRTs must be objectively assessed against the program intent. This can only occur through transparent and effective data capture and analysis.

In the same vein, the paucity of support to enable age service providers to contribute to people's My Health Record is counter intuitive to the very premise of the Record. Quite apart from the fact that no-one enters aged care without prior health history, albeit they are often assessed in absence of this history, many aged care providers have a deeper personal knowledge of an individual than their medical professionals, and their inability to contribute this information results in missed opportunities to enhance overall patient care.

At an individual level, as technologies that

"To suggest that obtaining age services or moving into an aged care facility warrants the same consideration as planning a week long holiday is offensive to both providers and consumers."

capture personal health and medical data are increasingly adapted within aged care, we are presented with new and improved ways to integrate prevention and predictive health management. Again, age service providers are well placed to identify the need for such technology and oversee its initial set up and use by an individual. As more people seek to remain living in their own homes for longer, we can expect that home care providers will be increasingly involved in monitoring and responding to people's technology and devices in consultation with their primary care team. The key will be to ensure a smooth transition between care settings as and when the need arises. This will only occur through eliminating the artificial barriers that have dogged the application of improved integration between aged care and the remainder of the health system. •



## ♠ Patrick Reid

Patrick Reid is the CEO of Leading Age Services Australia.

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AGED CARE MARKETPLACE





# The PASA 2nd Annual Aged **Care Procurement Conference**

Practical strategies to deliver cost savings whilst ensuring resident safety and quality service outcomes

he PASA 2nd Annual Aged Care Procurement Conference will be held on the 24 & 25 May 2016 at Melbourne Olympic Park. PASA will bring together the country's leading Procurement, Financial, Operational and Clinical professionals and Aged Care suppliers addressing the specific challenges of Aged Care Procurement.

In a time of margin pressures, the 2016 Aged Care Procurement Conference will assist you to overcome the dual challenges of delivering value and providing greater choice.

The Aged Care Procurement Conference will focus on practical solutions and strategies to achieve best value in procurement in an environment of continually changing and highly demanding age care expectations. The Conference is for all levels of procurement expertise and addresses specific aged care procurement skills to improve your procurement practices.

If you are responsible for delivering cost savings, positioning your organisation for Aged Care reform, providing choice and ensuring quality service outcomes, then this conference should not be missed.

#### Why attend The PASA 2nd Annual Aged Care Procurement Conference

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The huge array of suppliers exhibiting at this Conference will provide a rare opportunity to check out the latest products and services in the industry - all under one roof.



### 🗘 About PASA

Procurement and Supply Australasia (PASA) is the leading provider of information and education to procurement and supply professionals throughout Australia and New Zealand.

PASA supports the largest community of engaged procurement stakeholders in the region, through its renowned series of events, publications, awards, plus various community and network building activities.



To find out more, please visit www.agedcareprocurement.com, email regos@bttbonline.com or call 07 5644 0515 to register your interest.

2nd Annual Aged Care Procurement Conference



24<sup>th</sup> & 25<sup>th</sup> May 2016 | Melbourne Olympic Park | Melbourne

PRACTICAL STRATEGIES TO DELIVER COST SAVINGS WHILST ENSURING RESIDENT SAFETY AND QUALITY SERVICE OUTCOMES

### WHY YOU SHOULD ATTEND?

If you are involved in buying goods or services for Aged Care facilities here are just some of the things you will learn by attending:

- ✓ How to achieve value and efficiencies in residential aged care through procurement innovation
- ✓ How to develop the systems, models and strategies that are right are right for your organisation
- ✓ How to Realise significant savings and efficiencies across key categories
- ✓ How to overcome the challenges for procurement for In-Home services for Aged Care Clients
- ✓ How Sustainable Procurement practices impact the Aged Care Sector
- ✓ How Facilities Management drives competitive advantage
- ✔ How RFID technology can deliver real efficiencies, better service outcomes and savings
- ✓ How to contract for technology so that it delivers real benefits
- ✓ And much much more

#### WHO SHOULD ATTEND?

This conference is essential for:

- ✓ Purchasing Officers, Procurement and Supply Managers, Contract and Tender Managers, Fleet Management, Hospitality, Facilities Managers; CFO/ Financial Controllers
- ✓ Senior Management, CEO/Boards, Providers from Aged and Home Care, Government
- ✓ Senior Executives, Business development, sales/ marketing managers from suppliers of products and services to the Aged Care sector
- ✓ Advisors, consultants, lawyers, business development/sales managers from suppliers of support services to the Aged Care sectors
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Liana Westcott Special Counsel Russell Kennedy



Sean Smith

Managing Director

Jacaranda

# Sunshine Coast University Hospital program

Sunshine Coast University Hospital is a new public tertiary teaching hospital being developed by the Queensland Government to meet growing demand for hospital services.

t will open with about 450 beds in late 2016, with the expectation that its fully built capacity of 738 beds will be utilised by 2021.

Sunshine Coast University Hospital is Australia's first major new, not replacement tertiary teaching hospital for more than 20 years.

A \$1.8 billion project, the public hospital is being built as part of the 20-hectare Sunshine Coast Health Campus that will incorporate the Sunshine Coast Health Institute (SCHI). There is also a collocated private hospital that has been operating since late 2013.

The SCHI's dedicated and integrated research and learning spaces will enable health professionals to participate in teaching, research and clinical practice in one convenient location. The SCHI will foster knowledge through research, contributing to improvements in patient care, as well as educating and training all categories of staff.

The Sunshine Coast Hospital and Health Service is developing SCHI in partnership with the University of the Sunshine Coast, TAFE Queensland East Coast and a second university that will deliver medical education.

When fully commissioned, the new hospital will offer an expanded range of public hospital services not currently available on the Sunshine Coast. These include:

- A comprehensive cancer care, including radiotherapy and chemotherapy
- specialised medical and surgical services, including maxillofacial surgery and major trauma service
- · an acute rehabilitation service
- inpatient child and adolescent mental health services

Sunshine Coast University Hospital will be the centrepiece of the Sunshine Coast Hospital and Health Service's network of hospitals, which includes Nambour General Hospital, Caloundra Health Service, Gympie Hospital, Maleny Soldiers Memorial Hospital and a comprehensive range of community and primary health services.

This project is Queensland's first public hospital Public Private Partnership (PPP). Exemplar Health, a consortium comprising Lendlease, Siemens and Capella Capital, with partners Spotless Facilities Services, will design, construct, partially finance, commission and maintain the hospital buildings (including car parks) and grounds for a period of 25 years from late 2016, when the hospital opens.

The contract requires the facilities to be maintained to an agreed standard through the contract term. This will enable clinicians and hospital management to focus on patient care, while Exemplar Health maintains the built environment.

The PPP contract does not include the provision of any clinical services. Support services included in the scope of the PPP include security, pest control and car parking services.

The new hospital will require approximately 3000 staff when it opens. This will increase to around 4600 staff when the fully built capacity is commissioned by 2021.

Staff of the SCHHS are determined that the new hospital will deliver high quality, safe, patient-centred health care.

Clinical departments are collocated in the western main hospital building, while the eastern 'Lakeside' building houses some of the research and teaching facilities of the SCHI and the Cancer Care Centre, as well as the Intensive Care and Coronary Care units.

The mental health unit sits adjacent to the emergency department, which is located so it is easy to find from any point on the campus.

Inpatient units are spacious and light-filled with views to the surrounding landscape. These units form physical links between the east and west main hospital buildings.

There will be about 3500 car parking spaces. The main multi-storey car park adjacent to Sunshine Coast University Hospital has direct access to the hospital via overhead bridges and will include 180 spaces for people with a disability, up to 180 electric vehicle charging stations and a 100-place childcare centre for staff. →











# Sunshine Coast University Hospital fast facts

CONSTRUCTION STATISTICS

| Concrete  | 117,000m <sup>3</sup>  |
|---|--|
| Reinforcing steel                                 | 14,532 tonnes  |
| Structural steel                                  | 660 tonnes   |
| Concrete piles                                    | 3000 - laid end-to-end, these piles would stretch from Nambour to Brisbane (105km)     |
| Glass   | 41,075m²   |
| Doors   | 6300   |
| Roof and wall sheeting                            | 38,007m <sup>2</sup>   |
| Plasterboard                                      | 499,906m²  |
| Carpet  | 31,634m², or enough to cover about five rugby fields                                   |
| Vinyl   | 92,171m², or enough to cover 15 rugby fields   |
| Skirting  | 79,350m  |
| Grass   | 28,085m <sup>2</sup>   |
| Bitumen paving                                    | 40,402m²   |
| Concrete kerbing                                  | 13km   |
| Total construction area/floor space when complete | 140,000m² - equivalent to 25 official rugby<br>league fields or a 140-storey high-rise |



→ There will also be access to public transport, while pedestrian and bicycle access will be encouraged with a network of shared pathways, cycle storage and secure end-of-trip facilities including lockers and showers for staff.

The buildings are designed to link seamlessly with the outdoors to incorporate the natural healing properties of the coastal environment, reduce the load on building systems and increase the availability of natural light and fresh air.

The visual connection to the surrounding landscape will assist orientation and ease of navigation for hospital patients and visitors. Building orientation and passive solar protection to all openings will reduce heat load, reflected heat and glare.

The net effect will reduce energy consumption, as well as create a cooler external environment and protect the building facade and internal finishes. This is consistent with creating cooler built environments to counter the urban 'heat island' effect.

Flexibility is built into the design to enable the hospital buildings to adapt to changes in demand and healthcare innovations, extending the life of the facilities.

Sustainability and energy-efficient features of the hospital include:

- rainwater harvesting and water reclamation
- · solar hot water systems
- high performance, maintainable and durable building fabric and enclosure
- energy-efficient lighting in the main hospital building using an Australian-designed control system (Organic Response) that reduces the amount of cabling required
- an environmental management system that meets the benchmark ISO 14001 international standard
- a building management system for efficient building operation, monitoring and maintenance
- the use of sustainable and environmentally responsible products. •





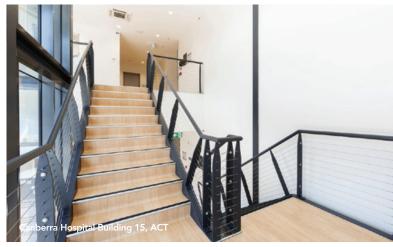
# Sunshine Coast University Hospital fast facts

CONSTRUCTION STATISTICS

- Site resources peaked at about 1800 daily on-site workers in mid-2015
- About 11,000 construction workers will be inducted on site over the life of the project
- It is estimated that it will take about 4.15 million man-hours to build Sunshine Coast University Hospital







# Expanding your health facility? Have you considered modular?

Ausco Modular designs and builds healthcare facilities using the latest in sustainable and aesthetically pleasing modular technology construction methods. And modular means your project is delivered faster.

Our permanent and temporary modular solutions enable improved workflow and patient care and are constructed to blend in with your existing environment. Our designs and layouts evolve to meet the changing needs of the health, medical, and community sectors.



Avoid patient disruption



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Decrease waste output on site



Reduce noise disruption with offsite construction



Avoid lengthy construction times

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# **Modular construction**

# - the way forward for healthcare

Modular building expert Ben Knight of Ausco Modular explains why pre-fabricated modular buildings are the solution for healthcare professionals in the 21st Century

With the face of construction in Australia rapidly changing, there are now more options than ever when it comes to building hospitals, medical clinics and treatment facilities.

To have your next healthcare infrastructure project delivered faster and with less inconvenience, it's worth considering modular building technologies.

With 55 years' experience in Australia's modular building industry and 17 branches across Australia, Ausco Modular is a true industry leader.

The company has a proven track record in providing efficient building solutions within strict timeframes to a range of industries.

Delivering full turnkey modular solutions through a unique 360 Degree Service, Ausco Modular guides clients throughout the entire build from start to finish by providing expert advice in design, build and installation.

Not to be confused with outdated demountable buildings, Ausco's buildings are aesthetically pleasing and can be custom-made to suit all needs.

Ausco Modular General Manager - Modular Sale, Ben Knight, said modular building solutions were becoming increasingly popular with healthcare professionals for many reasons.

"Providing safe and healthy medical facilities is incredibly important to our healthcare clients and we have helped them achieve reduced waiting lists and greater room availability through our services," he said.

"Reducing the time spent on building new facilities means they can be operational quicker, allowing better medical services to be provided.

This is a major priority for our clients and we're proud to help them deliver on their building objectives time after time.

"Ausco Modular recently partnered with fitout and refurbishment specialists SHAPE Group to deliver and install 84 modular units for Canberra Hospital, allowing patients and medical staff to occupy the Hospital well ahead of schedule."

Modular building technology was also used to construct a brand new medical clinic in Ivanhoe in September 2015 for NSW Health Infrastructure.

The Ivanhoe HealthOne Clinic redevelopment saw Ausco Modular replace the town's existing ageing health facility in Far West New South Wales, providing its signature turnkey solution across design, construction and installation.

The now-completed 300m2 facility includes consult and treatment rooms, dental, podiatry and back of house areas for staff

and medical supplies.

Australian and global research shows that pre-fabricated and modular buildings save operators a significant amount of time over the span of a project. It's estimated that modular buildings can decrease project schedules by 66 per cent.

On a major transport infrastructure project in Sydney, Ausco Modular was able to reduce the in-situ build estimate time from 36 to 18 months – a 50 per cent reduction in time, which saved the client millions of dollars in build-related costs.

As well as cutting down on precious time, modular buildings serve a range of other benefits to operators because the construction process is managed off-site.

"Using modular technologies ensures noise interruptions are kept to a minimum as the majority of work is conducted in an Ausco Modular factory," Ben said.

"As such, healthcare operators are able to run existing areas of hospitals or medical centres with minimal impact on the treatment and care of existing patients and hospital staff.

"Neighbouring businesses and residents also experience far less inconveniences that come with an in-situ build because there's less traffic entering and exiting the site as tradespeople work on the building off-site."





Ben said modular buildings provide a safer option for project managers.

"The benefits of being constructed in a factorycontrolled setting are vast," he said.

"Ausco Modular employs qualified tradespeople across all of our factories, all of whom are required to adhere to strict safety protocols.

"Our factories have achieved ISO9001, ISO14001 and AS 4801 accreditations through independent industry regulators for quality, environmental and safety.

"These allow for maximum productivity through a better quality of build, better finish and the testing of all services prior to installation.

"Weather can be unpredictable in Australia and delay in-situ builds considerably. With the majority of construction done off-site with modular buildings, unfavourable weather doesn't impact the timeline of our builds."

Waste and pollutants is another key consideration for healthcare professionals when it comes to building new facilities.

With modular buildings constructed off-site, minimal waste and dust is left on-site, which minimises impact on existing facilities and patients.

With Ausco Modular's extensive network across Australia and longstanding history of providing quality made-to-order modular buildings, it's worthwhile considering Ausco Modular for your next healthcare build.

"Our modular buildings have a proven track record of allowing earlier occupancy of new facilities, which result in a faster return on your investment."











For more information on Ausco Modular and its healthcare offering visit **www.ausco.com.au** or call **13 62 11**.

# **Tennant: Floor Care Solutions for Healthcare**

A visitor's initial impression of a facility is typically influenced by the business' cleanliness. Poorly maintained, dirty or stained floors in high-traffic areas can be detrimental to a facility's image and profitability. In today's fast-paced society, customers demand facility's accommodate for their schedules, whatever the day, whenever the time. This has had a direct impact on cleaning programs and turn around times, particularly in healthcare.

t Tennant, we offer a variety of sustainable cleaning solutions to meet your floor care needs in healthcare. From patient rooms and hallways through to carpeted waiting areas and even parking lots, Tennant provides high performance equipment that can help reduce your cost to clean and improve environmental health and safety for your patients, staff and visitors.

Tennant has a comprehensive range of walk-behind and compact ride-on scrubbers available with innovative ec-H2O™ technology which utilises tap water, removing the need for general purpose detergents. This also results in no chemical residue left on the floors, significantly reducing slip and fall risks, and eliminates chemical scents to provide a more comfortable environment.



We have a range of walk-behind sweepers perfect for indoor and outdoor applications. Equipped with TwinMax™ sweeping technology, all types of debris can be collected including fine dust and leaf matter without the need to change brushes. Tennant's walk-behind sweepers also work exceptionally well on carpets.

Tennant also provides a complete line of carpet cleaning equipment for daily maintenance and restorative cleaning including vacuums and extractors. Tennant offers a range of backpack and upright vacuums, as well as deep cleaning extractors certified by The Carpet and Rug Institute. Using these products simultaneously with Tennant's exclusive ReadySpace® technology significantly extends the life of your carpet and enhances your facility's image.



To find out more information on how Tennant's products can be used in your healthcare facility to simplify your cleaning program please call us on 1300 TENNANT, email demo@tennantco.com or visit tennantco.com/au/healthcare

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Hill-Rom is a leading global medical technology company partnering with health care providers in more than 100 countries, with over 10,000 staff and 7 million patients touched by Hill-Rom® products every day.

ill-Rom achieves this by focusing on patient care solutions that improve clinical and economic outcomes in five core areas: Advancing Mobility, Wound Care and Prevention, Clinical Workflow, Surgical Safety and Efficiency and Respiratory Health.

During 2016 in Australia, Hill-Rom, combining with Hill-Rom's portfolio of brands, including Welch Allyn, Trumpf Medical, Liko and MetaNeb offer a wide range of innovative solutions to a patientcentric, global customer base focused on quality and efficiency. Together we will be working together to expand our companies' ability to help health care providers focus on patient care solutions that improve clinical and economic outcomes.



Hill-Rom's focus on quality and innovation is driven by the passion for providing safe and comfortable environments for patients and health care professionals and providing unsurpassed after sales service and support.

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#### Around the world, Hill-Rom product brands work towards one mission:





Enhancing outcomes for Patients and their Caregivers.®







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# MRI Shielding Design is an important feature of the modern MRI suite.

In the rush to make the suite look attractive it is of paramount importance that the fundamental technical requirements are adhered to.

But it seems that these very important and very critical issues are being overlooked.

The important issues for MRI shielding include the quality and longevity of the Faraday cage itself. This company almost exclusively uses copper shielding for medical applications and MRI shielding.

Copper shielding will last for more than 20 years when installed in a tried and proven system which is used by Faraday. This is from known data.

Furthermore, copper provides the highest conductivity. High conductivity is important because the imaging equipment generates currents in the shield and these need to be conducted back to earth efficiently to avoid image artifacts.

Additionally, during construction, it is absolutely necessary to control the electrical isolation of the shield. This is to ensure that there is only one earth for the shield, again to control the currents that will be present in the shield. This may seem minor, but if the shield

is inadvertently earthed during construction, rectification is very expensive. Alternatively, if not detected, which is often the case, poor image quality can be forever present.

Testing the shield on completion is also important. Customers are encouraged to witness this test. Some shielded rooms that have been poorly built could never have passed the initial RF commissioning test. Users suffer image quality or interference issues as a result. Faraday uses high quality calibrated test and we encourage witness testing.

Many MRIs require magnetic shielding to ensure that the extent of the magnetic field generated by the MRI is contained within a specified area. The calculation for the extent of the magnetic field for a particular installation is both complex and expensive. Normally this is undertaken by the MRI vendor for their particular magnet. Faraday offers this service and we can do the calculation to develop a solution for a site to accommodate any magnet brand.

Faraday the surest solution by any measure



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# NEW EX COLUMN

# Panel of Experts - Penalty Rates

Panel of Experts is a forum for industry professionals to share their opinion on a topical issue relevant to healthcare. In this issue our expert panel weighs in on - Penalty Rates - how important are they and are they sustainable?



LEE THOMAS
- Federal Secretary
Australian Nursing & Midwifery Federation

The Productivity Commission's (PC) final report held little surprise with regard to the reduction in penalty rates. It had been proposed in their draft report that Sunday penalties for hospitality and retail workers would be reduced to that of Saturday. Despite consultation, the position was unaltered.

The ANMF believes this is the thin edge of the wedge, and once the reduction is mandated for some then it's only a matter of time before any promised exceptions are lifted and it becomes the norm. And that's a huge concern to us all.

In a survey of our members, it was unsurprising that 92% of the 13,000 respondents said they would leave the profession if their penalty rates were altered or removed, and a massive proportion said they would take some form of industrial action to protect their penalties.

Despite nurses and midwives seemingly being safe at least in the public sector, what of those nurses working in aged care private hospitals, schools and community settings? Will they too be included in the exemption? This is a question I put to the PC during public consultations, sadly without any clarification.

No matter your view about the need for penalty rates and who should get them, ANMF members are clear about one thing: You touch one of us you touch us all.



MARYANNE O'FLYNN,
- Enrolled Nurse

orthopaedics, paediatrics, surgical, maternity, special care nursery, specialist outpatients and ED.

Penalty rates play an important role in delineating social and unsocial work hours. As an Australian nurse, work hours would ideally match those of other members of my family including my children's school hours and would include weekends off and take into account my husband's need for me to be at home with the family in the evenings. Of course this is not the reality for me or for other shift workers - our lives are predetermined by 24 hour rostering.

The current penalty rates go some way towards compensating for the multiple impacts this kind of working lifestyle represents. I know as a mother I wouldn't continue in this profession without penalty rates. Why would I? Without the financial compensation what would be the incentive for me to work a 24 hour roster when I can retrain in another field of work that will bring my life in line with that of my family and society in general?

Nurses are compassionate people who have chosen their profession to help the community and I am sure many of them would continue in their roles without penalty rates. The impact, however would be a discontented and under-appreciated work force



KATE CARNELL AO,
- Chief Executive Officer
Australian Chamber of Commerce
and Industry

Health professionals do a wonderful job supporting the sick and injured around the clock and throughout the calendar year. These staff have long been given extra compensation for working at unconventional hours, and there is no prospect of that changing. The business community has not argued for any change to the pay structure for these workers, and in its major report on workplace relations, the Productivity Commission did not advocate any change either.

However, the Australian Chamber of Commerce and Industry believes there is a need for change in the retail and hospitality sectors. People now expect hotels, cafes, bars, supermarkets and other retailers to be open seven days a week. But many of these businesses struggle to open on Sundays because penalty rates, typically double regular pay, make it too expensive. By bringing Sunday penalty rates in line with Saturday rates for retail and hospitality, more businesses will open their doors, more workers will get shifts and more customers will be served. Research shows this change could create 40,000 jobs.

With more than 750,000 Australians out of work, we need to take action. This is not an attack on penalty rates; it is an attempt to develop pay rates that reflect the sevenday economy and will make it easier for businesses to employ young people.

# TAKEO<sub>2</sub> The Innovative Solution for enhanced Patient Safety and Cost Savings in Healthcare Facilities

Air Liquide *Healthcare* is proud to introduce TAKEO<sub>2</sub><sup>TM</sup>, one of the world's first digital integrated cylinders. Australia is one of the first countries outside of Europe to implement this new technology.

# About Air Liquide Healthcare

Air Liquide Healthcare is a world leader in medical gases, home healthcare, hygiene products and healthcare specialty ingredients. Air Liquide Healthcare aims to provide customers in the continuum of care from hospital to home with medical products, specialty ingredients and services that contribute to protecting vulnerable lives.

We serve over 7,500 hospitals and 1,000,000 patients throughout the world, supplying medical gases, hygiene products and equipment to hospital customers, and providing Home Healthcare services to patients in the community.

AKEO₂™is a major innovation in the Medical Oxygen field. This new generation cylinder combines a built in pressure regulator, an ergonomic cap and a patented digital gauge, to provide healthcare professionals with the industry's safest and most cost effective medical oxygen delivery system.

This new technology allows caregivers to better manage the administration of medical oxygen, by viewing the remaining time and volume available at a glance.

#### What does TAKEO₂™ mean for me?

This solution provides major benefits to healthcare providers:

**Greater patient safety** by reducing the risk of oxygen supply interruption:

- Staff can safely plan oxygen dependent transfers having immediate and accurate cylinders duration time.
- The permanent display of the remaining time and available volume as well as the safety alerts indicate when the cylinder needs to be replaced
- The integrated valve with built in pressure regulator provides a higher level of safety as it reduces the possibility of adiabatic compression associated with detachable pressure regulators.

Improved ease of use and faster oxygen set ups:

- With an ergonomic cap, a comfortable handle and a straightforward flow selector, patient care is significantly facilitated.
- The time-related data provides an unprecedented comfort level to caregivers who can better focus on their primary responsibility, the patient.

**Cost efficiency** through an effective use of the cylinder content and reduced equipment cost:

- With direct and exact information on remaining time, staff members are more confident to use most of the cylinder contents as they have a better control of the autonomy of the cylinder.
- Featuring an integrated valve, TAKEO2™ does not require a separate regulator to be attached.

This eliminates the need to purchase regulators for medical oxygen cylinders, or to manage their maintenance and repair.

The use of the integrated **TAKEO**2™ cylinders reduces redundant and inefficient activities, enables caregivers to reallocate their time on the patients and delivers significant cost savings for the healthcare facilities.

It was demonstrated with several case studies in Europe and Canada that hospitals were returning about 50% of their medical oxygen cylinders for refill (considered as empty) when cylinders were actually over 1/4 full. With the new digital integrated cylinders, over 90% of the cylinders were returned completely empty by the hospital. As a focus on lean management and waste reduction practices in the healthcare sector continues, **TAKEO**2<sup>TM</sup> is the innovative solution for cost savings.

#### How does it work?

When the cylinder is in use, the patented digital pressure gauge calculates and displays the time remaining in hours and minutes. No more estimations or calculations of the remaining content are required as  ${\bf TAKEO_2}^{\rm TM}$  cylinder provides direct intelligible information to medical staff with the remaining treatment time at the selected flow.

When the cylinder is not in use, it displays the available volume in litres. The device also features visual and audible warning alerts which indicate when critical levels are reached.



Remaining time displayed in hours:minutes



For more information, please contact **1300 360 202** or visit **www.airliquidehealthcare.com.au** 



In general medicine the alarm has been sounded about the health effects of the post-industrialisation Western diet on our bodies and our minds.

here has been a move from whole foods to processed foods favouring durability, transportability, palatability and convenience over nutrition. There is little dispute about the associations between diet and chronic disease including cardiovascular disease, myocardial infarction, type II diabetes, cancers and obesity. Now that same alarm is being sounded in mental health as epidemiologic, basic scientific, and clinical evidence show that diet both influences risk for, and outcomes of mental health disorders.

Deficiency of B12 and folate have been known to be a cause of depression and cognitive dysfunction for some time. But gross deficiency is not the only means by which diet might affect mental health. It is becoming clear that psychiatric disorders share many of the same disease pathways as chronic medical problems including immune dysregulation, chronic inflammation, oxidative stress, mitochondrial dysfunction, alterations in the gut flora (microbiome), and epigenetic changes, perhaps helping to explain the high rates

of psychiatric comorbidity with obesity, cardiovascular disease, autoimmune disorders and type II diabetes.

It is now known that the Western diet can drive pathophysiological change at each of these pathways and is a risk factor for the development of depression (throughout the life course including prenatal maternal diet affecting the risk of internalising and externalising behaviour in offspring), anxiety and may play a role in increasing the risk of developing psychosis in high risk individuals.

A series of large population studies from Scandinavia, Spain and Greece showed a clear association between depression and anxiety and diet quality, with a whole food, mediterranean style diet having the lowest risk. Similar studies have demonstrated similar inverse relationships between depression and diet low in processed foods in Asian populations. One recent neuroimaging study demonstrated an inverse relationship between hippocampal volume and diet quality in older adults. Furthermore these studies were controlled for a range of confounders including age,

sex, socio demographic status, smoking and education levels. Several prospective trials have begun to address the issue of reverse causality. Unfortunately clinical trials of dietary interventions in psychiatric disorders are methodologically complicated, particularly in maintaining adherence to the dietary intervention and due to the nature of cognitive and behavioural changes in psychiatric disorders.

The number of clinical trials on individual nutraceuticals in psychiatric disorders is also growing. A trial of omega 3 essential fatty acids in young people at high risk of developing psychotic disorders demonstrated a significant protective effect reducing risk of progressing to a psychotic disorder from 40% to 3%. Animal trials have showed transplanting bowel flora from anxious mice to non-anxious mice (after sterilisation of their own bowel flora) induced similar anxiety states and giving probiotics to healthy men helped reduce physiologic and psychological stress with modest improvements in cognitive function.

Nutrients of particular interest in psychiatric





disorders include omega 3 essential fatty acids, B vitamins, choline, minerals such as zinc and magnesium, pre and probiotics, S-adenosyl-Methionine (SAMe), a variety of plant chemicals with anti-inflammatory and antioxidant properties such as curcumin, the yellow pigment found in Turmeric or the compounds known as polyphenols including resveratrol.

While conducting intervention trials for dietary interventions are methodologically fraught the lack of randomised controlled trials should not prevent addressing the health of patients with psychiatric disorders holistically. At the very least it will help address the significant physical comorbidity such as metabolic syndrome and has every chance of improving outcomes

"...it is considered that the food industry is at an equivalent point to the tobacco industry in the 50's..."

for their mental health. Moving beyond the individual patient, it is considered that the food industry is at an equivalent point to the tobacco industry in the 50's and further scrutiny and regulation, along with raised consumer consciousness has the potential to deliver a cost effective and efficacious mental health intervention at the population level. •



#### Or Clayton Smith

Dr Clayton Smith FRANZCP is a psychiatrist in private practice in Burwood, Sydney and also provides consultancy and supervision at The Mindspot Clinic, an internet delivered Cognitive Behaviour Therapy treatment program. He has a particular interest in the management of anxiety disorders and behavioural therapy, in particular, Acceptance and Commitment Therapy.

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# Coregas do laboratory gases too...

Regular readers of *Australian Hospital and Health Bulletin* probably recognise Coregas as a medical gases supplier, but they do more than just that. In fact, they have been supplying Australian laboratories with their range of high purity gases and gas mixtures for over 41 years.

s a gases specialist, Coregas manufactures and supplies a range of medical, specialty and industrial gases throughout Australia, but their laboratory gases range is one of their core competencies. Available in a range of sizes from individual cylinders up to custom-built complete laboratory supply systems and cryogenic storage systems, Coregas specialises in ensuring laboratories can access the correct gases in the volumes and frequencies they require, no matter the application.

From high purity common gases such as helium, argon and nitrogen to the rarest of gases such as xenon and krypton, plus specially made multiple component gas mixtures suitable for testing and calibration uses, they work to the precise standards laboratories need for their gases, especially in the hospital environment

"We know the importance of high purity, reliability and traceability of laboratory gases, so we've organised our production, delivery and quality control system around maximising all three," says Victor Chim, who heads up Coregas' specialty gases team.

#### Ultra high purity gases

Many Coregas gases are available in a range of purities, but the laboratory gases range is available in purities of up to 7.0 (99.99999%), including common gases such as nitrogen, oxygen, argon, hydrogen, helium, carbon dioxide, instrument air and instrument acetylene. Their methodical approach includes carefully preparing cylinders and selecting valve materials that are compatible with the contents.

#### Other gases

Too large to list here, the Coregas range also includes

- Electronic gases, eg silanes, ammonia, nitrogen trifluoride, chorines and halocarbons
- Rare gases, eg neon, krypton and xenon
- Isotopes etc He-3 and Xe-129
- Liquefied gases for labs that need bulk quantities ranging in size from 35-240 litre flasks to custom bulk installations.
- Calibration gases, from simple inert gas mixtures to the most difficult to produce moisture test gases (low parts per million H<sup>2</sup>O in CH<sup>4</sup> or H<sup>2</sup>O in N<sup>2</sup>). Their range of reactive gas mixtures include CO, NO, NO<sup>2</sup>, SO<sup>2</sup>, NH<sup>3</sup>, H<sup>2</sup>S and Mercaptans in low parts per million or percentage levels.

#### Reliability

Operating one of the largest production and storage facilities in the southern hemisphere and an Australia-wide distribution network, Coregas provides a reliable supply of high quality gases under short lead times, whether locally produced in bulk or other gases sourced through their global supply chain.

#### Stability and accuracy

Coregas ensure stability and accuracy of their calibration gas mixtures by using:

- Only ultra-high purity gases
- Advanced thermodynamic techniques to calculate gas composition
- Gravimetric filling techniques, which produce more accurate calibration gas standards than volumetric methods because gas concentrations are not affected by temperature changes inside the cylinder during gas compression.
- · Chemical testing for stability to ensure they meet the strictest requirements.



#### Accreditations and traceability

To prove the standards of excellence of their products, Coregas maintains 3 key accreditations

- ISO 9001: quality management accreditation for the manufacture of standard gas mixtures (batch certified): traceable to their in-house calibration gas standards, relative uncertainty ≥ ±2%.
- ISO/IEC 17025: NATA certified accreditation for the manufacture and testing of calibration gases (individually certified and prepared gravimetrically): traceable to internationally approved standards which offer a relative uncertainty of approximately ±1%
- ISO Guide 34: accreditation for the manufacture of reference material to ISO6142: the highest accredited level for gravimetrically-prepared calibration gas mixtures, traceable to National standards according to the International System of Units (SI). It offers a relative uncertainty of approximately ±0.5%.

#### Equipment

Coregas equipment range runs from laboratory grade gas regulators through to complete laboratory gas distribution systems and cryogenic storage systems.



Contact Coregas to find out why making them your gases specialist could be to your advantage. Coregas Pty Ltd. Phone **1800 807 203** or visit **coregas.com.au** 

# Introducing BSN medical Australia and New Zealand

e are pleased to announce that BSN medical in Australia and New Zealand has commenced operations as a new, local organisation to service and support our customers. We have a head office in Melbourne and a comprehensive support network across Australia and New Zealand.

This means that the local supply of BSN medical products, previously managed by Smith & Nephew, will now be managed by us directly.

#### What does this mean for you?

First, we will continue to supply the brands you know and trust – which include Leukoplast®, JOBST®, Gypsona®, Swann-Morton® and Fixomull®.

We also look forward to introducing new, advanced products designed to broaden clinical choice, help manage healthcare budgets and improve patient and consumer outcomes. With a global focus on continuous technological advancement, we will continue to add to our family of best-in-class products spanning each therapeutic area we serve.

Our Australian and New Zealand business retains the support of our global company – a world leader in the medical device sector, specialising in the areas of orthopaedics, vascular therapy and wound management. Our focus is on therapies that work together across the entire treatment lifecycle. These 'integrated therapy solutions' are designed to serve throughout the course of a patient's injury or condition.

To put it another way, we aim to be more than just a product provider for a specific problem. Our goal is to help make a meaningful difference in the lives of patients who require specialist wound care, compression therapy or joint support due to illness or injury.

We are excited about our new journey, and we look forward to working with you more closely.



If you have any questions or would like more information, please contact us using one of these options. Call **1300 BSN MED (1300 276 633)** or email **customerservice.au@bsnmedical.com** or visit **www.bsnmedical.com.au** or post to PO Box 337, Mount Waverley Victoria 3149.



www.bsnmedical.com.au



# Sleep in a 24/7 World

Hospitals are a 24/7 operation and shift work is a critical part of that service. Dr Maree Barnes, Sleep Physician and President of the Australasian Sleep Association has extensive clinical experience with sleep disturbance and shares her insights into how shift work can be sustainable in the hospital setting.

here is a lot of sleep disturbance that occurs in hospitals with nurses and interns commonly on shifts that run from 8 to 10 hours.

There has been recognition recently about the problems with sleep deprivation on medical staff in terms of error making and poor patient outcomes so that many hospitals have changed the way they roster their junior doctors to allow more recovery time between shifts and less sleep deprivation.

For nurses, the main issue is the necessity of wards to be managed 24 hours a day so someone has to work mornings, afternoons and during the night. Shifts need to be managed well to ensure the delivery of excellent patient care and to minimise the impact on the health and wellbeing of the nursing staff.

There are ways of doing this and certainly in my experience, hospitals are very open to rostering appropriately and modifying the working environment to ensure that nurses are as well supported as they can be. Over the past ten years there have been great advances in our understanding of the importance of sleep and hospitals are using better rostering practices to improve staff performance and wellbeing. Shift work is a challenge for everybody.

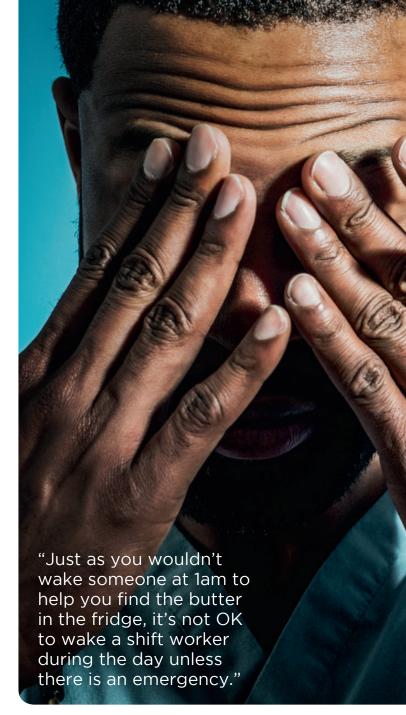
Research on the impacts of poor sleep on junior medical staff shows that they are more prone to having road traffic accidents on their way home from a night shift. It also shows that poor sleep is responsible for more errors in the management of patients.

The length and number of shifts that medical staff and nurses are expected to do is impacted on by location and the number of staff that are available. In a smaller hospital, nurses may work longer shifts.

#### Rotate it forward

We know from not only hospital shift workers but also from those working in the mining industry or trucking, that wherever there is a 24 hour need for people to be on staff, the best way to manage rotating shifts is to rotate them forward. This means that a person starting on a morning shift will move to an afternoon shift and then to a night shift rather than going backwards.

This forward cycling seems to fit best with the way our internal body clock works and allows people to adapt better to changes in the times they are expected to be awake and asleep and enables them to sleep better when they are at home and to be more alert and productive at work.



#### Light frequencies showing promise

As we are progressing with our research, we are gaining a better understanding of the way to manage alertness and productivity in all shift workers including nurses. The Australasian Sleep Foundation and the Institute for Breathing and Sleep at the Austin Hospital, Melbourne is currently taking part in research funded by a government grant held co-operatively by a number of organisations around the country including universities, hospitals and industry.

The focus of our research is to ascertain how to best manage sleep in hospital staff and one of the things we are investigating is artificial light.

We know that particular frequencies of light are more likely to send a signal to the brain that 'there is daylight and it's time to be awake', than others. What we call 'alerting light frequencies' or those that promote vigilance, are in the blue light spectrum. This research is in its early stages and we hope that the results could make a real difference to the working environment for hospital staff.

The Institute for Breathing and Sleep is about to commence a project that will look at the types of sleeping problems that nurses may have, then provide solutions to these issues. A shift work disorder is only one of many sleep disorders that can affect nurses





#### Dr Maree Barnes

Dr Maree Barnes, President of the Australian Sleep Association (ASA), graduated in medicine from the University of Melbourne and undertook postgraduate training in Respiratory and Sleep Medicine at St. Vincent's Hospital Melbourne, which was completed in the US. On her return to Australia, Dr Barnes took up a research appointment at the Austin & Repatriation Medical Centre and the Institute for Breathing and Sleep.

Dr Barnes' current research focuses are: improving and simplifying the approach to the diagnosis and treatment of sleep apnoea, with an emphasis on involving community health practitioners; evaluating the cardiovascular risk associated with sleep apnoea; the risks of sleep disordered in pregnancy and the relationship between mood disorders and sleep disorders. In addition to these research interests, Dr Barnes runs a busy Sleep Clinic, has appointments to both the Senior Medical Staff at Austin Health and the University of Melbourne Department of Medicine.

and there may be other issues such as insomnia or sleep apnoea influencing the quantity and quality of sleep. We are hoping that this research will help us to create a tailored package of health care so we can treat whatever sleep problems a nurse may be experiencing and reflect on how this improves their overall health and wellbeing.

#### The personal cost

It is vital that we find effective solutions to sleep disorders amongst our shift working hospital personnel to ensure that they are as alert, productive and healthy as they can be. Poor sleep has a professional impact but the personal impact of sleep disorders is also very well documented.

We know that disordered sleep results in mood changes and can cause interpersonal problems. A person who is not sleeping well is less able to engage happily with their family and co-workers and is at greater risk of depression and other mood disorders. Poor sleep can also impair a person's memory and their ability to problem-solve.

I remember when I was an intern in smaller peripheral hospitals where we had fewer staff and we would be on duty for 24 hours for 4 or 5 days in a row. By the end of it I wondered how we all survived! There is more awareness now about the implications of long work hours and shift work and research has clearly shown us that you don't get the best out people in terms of patient care when they are not well rested.

#### Guidelines for designing shifts that work

There are two basic guidelines for how to manage shift work. The first is shift management. The hospital needs to manage shifts well by ensuring people are rostered appropriately with adequate time off and that shifts are rotated forward. The second comes down to the individual. Anyone working shifts needs to ensure that the people they live with understand that when they are at home they need to sleep undisturbed, in a quiet, dark and comfortable environment. Even though a person who has worked a night shift is at home during the day, they can't engage in normal daytime activities.

While employers do have a responsibility to ensure their employees are in a safe and healthy work environment, employees need to ensure that when they are at home they go to sleep. They need a dark room to sleep in quietly, free from phones and computers that may disturb their sleep. Just as you wouldn't wake someone at 1am to help you find the butter in the fridge, it's not OK to wake a shift worker during the day unless there is an emergency.

Getting 7 or 8 hours of good quality sleep is not an optional activity - it's an absolute necessity both for a shift worker's productivity and their own personal health. Too many people think that they can get home at 3am, sleep for a few hours, then get up at 7am and get the kids off to school. That is just not going to work, either for themselves or the family.

By not taking care of your sleep, your health can suffer. Patients with insomnia have an increased risk of developing cardiovascular disease, for example, high blood pressure. There is a trial underway at the moment at the University of Pittsburgh looking at whether treating insomnia helps to lower blood pressure. There are many health consequences of having insufficient or poor sleep.

#### The final word

The advice I would give anyone working shifts is that you need to make time to sleep. No matter what time you get home, if it's 6pm or 6am, ensure that you have your meal at least two or three hours before going to bed and give yourself some wind-down time. Ensure that your sleeping environment is quiet, dark and protected from disturbance and observe the three pillars of health; diet, exercise and good quality sleep.

For nurses struggling to adjust to a shift cycle, I would recommend you talk to your nurse unit manager. If your shifts have been optimised and you are still having sleep problems, consult a sleep psychologist. A sleep psychologist can be of enormous benefit in helping you to improve the quantity and the quality of your sleep. •

#### The issues are to ensure that;

- Staff on rotating shifts are managed well;
- The working environment is conducive to nurses being awake and
- Nurses are able to sleep well and adequately when they go home.

# New power packed meals designed to warm the hearts of patients this winter

As the winter months take hold, greater care needs to be taken to ensure catering menus provide quick, nutritious meals for patients that not only have top taste appeal but also provide warm comfort.

roviding patients with flavour variety can be a great way to ensure they remain interested in their meals, with egg dishes an ideal way to combine nutrition with gourmet taste options.

Sunny Queen Meal Solutions has now added a range of new flavours to its ready to heat and serve Omelette and Fritter range that are just right for the winter season.

Staying on trend with a current interest in Spanish flavours, one of the new Omelettes and Fritters feature smoky chorizo sausage and both can be prepared in just minutes.

#### Mouth-watering new omelettes

For those looking for a new take on the classic omelette, the new Three Cheese and Cracked Pepper Omelette and the Chorizo and Cheese Omelette provides a range of traditional and new flavours that will satisfy a range of palates.

The Omelettes can be enjoyed as is, or dressed up to suit a range of appetite sizes, whether for breakfast, lunch or dinner.

#### Flavour-packed fritter range

Sunny Queen Meal Solutions' new Bubble and Squeak Fritters with baby peas, potato, capsicum and ham, and Spanish with Chorizo

Fritters can be enjoyed on their own simply served with a tasty dipping sauce or with a side such as a cheesy potato bake or seasonal vegetables to make a complete meal.

#### Eggsciting menu possibilities

"We recognise the importance of ensuring we provide a wide variety of flavour options for our products," said Sunny Queen Managing Director John O'Hara. "Versatility is the key and our products are not only easy to prepare but can quickly be transformed from a simple breakfast to a fulfilling dinner."

Totally gluten and preservative free and with vegetarian options, the products suit a range of dietary requirements and boast an exceptionally long shelf life. All Sunny Queen Meal Solutions products are fully cooked or pasteurised, made with real eggs, ready to heat from frozen, and are designed with taste and nutrition in mind.

"The idea is to make it as easy as possible for hospital and healthcare environments to ensure their patients receive nutritious and tasty food as quickly and cost effectively as possible," said Mr O'Hara. "All you need is a sandwich press, oven, hotplate or grill; add your own flair and patients will enjoy a perfect winter warming meal."



**Pepper Omelette** 

A delicious blend of mozzarella, cheddar, parmesan and cracked black pepper. A perfect classic for a warming meal.



Bubble & Squeak Fritter

Baby peas, potato, capsicum and smoky ham will make sure this old favourite is a winner with your diners.



Spanish with Chorizo Fritter

> Punchy Spanish flavours and chorizo provide the hottest flavours to add to your new winter menu.



Omelette

The perfect combination of spicy chorizo and cheese will heat up your winter menu.



For more information please visit www.sunnyqueenmealsolutions.com.au

## Bubble & Squeak made easy to eat.

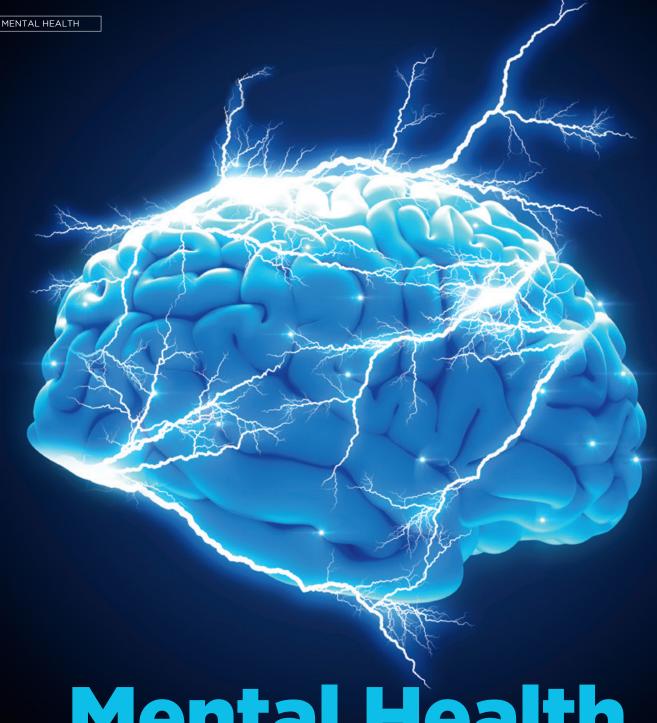


#### Freshen up your Winter menu with new Bubble & Squeak Fritters.

With the fresh flavours of baby peas, potato, capsicum and smoky ham, Sunny Queen Meal Solutions Bubble & Squeak Fritters are perfect for breakfast, lunch, dinner or a nutritious snack. Made with real eggs, our expanding range of Fritters (now including Spanish with Chorizo), is easy to prepare and guaranteed to please.







# Mental Health and Epilepsy

What do we know?

Mental health issues such as depression or anxiety are often neglected or misunderstood in people who also have comorbidity with epilepsy.

epression and anxiety are more common in patients with epilepsy than in the general population and as doctors we need to approach the management of these patients very differently.

Depression and anxiety are symptoms that can have lots of different causes. In epilepsy these symptoms can relate to the condition or the seizures themselves, to the medications or to the social circumstances that result from epilepsy.

Preictal depression or anxiety can occur a day to two before a seizure or the symptoms can be a manifestation of a seizure. Postictal depression or anxiety can also occur after a seizure or a flurry of seizures where a patient has a lucid period for 24 to 48 hours and then they experience severe anxiety, agitation or depression and that can last for days or weeks at a time and resolves spontaneously. So there is complex biochemical and electrical involvement in these cases.

In these situations the best management strategy is to optimise seizure treatment. By relying solely on psychiatric medication in these instances, you might actually make the situation worse because there are some psychiatric medications, such as antipsychotics, that can lower the seizure threshold. And certain drugs in this class are more commonly being used to treat anxiety and depression.

Children and adolescents can be especially vulnerable to the psycho-social causes of anxiety and depression that may be triggered or worsened by epilepsy. Particularly for teenagers, epilepsy can cause self-esteem issues and inhibit their normal drive for independence. Having a condition like epilepsy can make a teen feel more dependent on and controlled by their family and caregivers at a time when developmentally they are seeking greater self-determination. So for some adolescents and teenagers this can be very conflicting and can make them vulnerable to mental health issues.

#### Locus of control issues

Seizures can occur at any time in any place and this can cause a person to feel out of control of their situation. This can result in something called 'locus of control' issues where this feeling of loss of control extends beyond the seizure activity to their careers, their studies or personal life and this can result in a very negative mind set and the tendency to catastrophise.

There is a theory of depression called 'the learned helplessness model' which plays into

this scenario where it doesn't matter what a person does, they feel that have no control over the outcome. And this is commonly seen in people with epilepsy who are experiencing depression.

In instances of anxiety, a person with epilepsy may develop agoraphobia. Because a seizure can occur at any time a person may feel a loss of control and avoid leaving the house. It is not uncommon for patients with epilepsy and anxiety to develop a profound fear of having a seizure in public, of being in a crowded place or on public transport. In different people, the locus of control issue could manifest as depression and in other people it will present as anxiety.

#### Not all drugs are equal

Some types of epilepsy medication can cause symptoms of anxiety and depression. The type of epilepsy a person has will inform the medication their health professional prescribes for them. This makes putting together a treatment regime a challenging task and treating an epileptic patient presenting with mental health issues even more complex. Each patient must be assessed individually with an appreciation for how certain psychiatric medications can worsen symptoms of epilepsy and vice versa, the potential for drug interactions and how medications can interfere with the thyroid gland and vitamin synthesis.

Particularly when psycho-social issues have been identified as playing a role in a patient's anxiety or depression then cognitive behavioural therapy will yield the best results. In these cases it is important for the patient to be referred to a psychologist familiar with the patterns of thinking common in people with epilepsy who can help them to identify and overcome the thoughts that are causing them to be psychologically unwell.

Whether epileptic and/or psychiatric medication needs adjusting or CBT is required or all three, the best results will be achieved when each individual patient is assessed separately. When a 'root cause' approach is employed rather than symptomatic treatment, there will be a better result for the patient. The approach is all important and the underlying cause of the anxiety or depression must be identified first in order for there to be a positive outcome. •

"Each patient must be assessed individually with an appreciation for how certain psychiatric medications can worsen symptoms of epilepsy and vice versa, the potential for drug interactions and how medications can interfere with the thyroid gland and vitamin synthesis."

#### 0

#### Professor Harry McConnell MD FRCPC

Professor Harry McConnell MD
FRCPC is a NeuroPsychiatrist with
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disability related NGOs, serves on the
Queensland Council for Disability and
is Chair of the Gold Coast Disability
Council.



# A Healthy Breakup?

What happens when your patient leaves your care ...

Most people take medicine at some point during the course of a year. They may take prescription medicines, over-the-counter medicines and complementary medicines, sometimes together and sometimes not. What we do know for certain is that people taking 5 or more medicines are at a higher risk of medicine-related problems, and that this risk increases with the number of medicines taken.

ecent evidence suggests that 20% of Australians take more than 10 medicines regularly. Work done by the Australian Commission on Safety and Quality in Health Care (ACSQHC) suggests that 12% of all medical admissions and 20% to 30% of all hospital admissions for people aged 65 years and over are estimated to be medication-related.

The ACQSHC has highlighted that the medicines prescribed for people when they enter and leave a hospital are frequently based on incorrect information. A recently published study into referrals from GPs for patients presenting to an emergency department with congestive cardiac failure found that 90% of referral letters had at least one discrepancy between the medicines listed and the medicines actually dispensed for, or purchased by, the patient. On average there were around 4 discrepancies per patient.

There are similar issues when people leave hospital. Back in the late 1990s the evidence showed us that at least one medicine was not listed on most discharge summaries. More recent studies have still found at least one discrepancy in up to 80% of discharge summaries. New medicines commenced in hospital and medicines to be taken when required for symptom control are often not recorded.

People discharged from hospital into a residential care facility face additional issues. The need for a medication administration chart to be written when the person is admitted or re-admitted to a residential care facility has been found to be the most common reason for delays in administration of medicines.

However, a major study of a pharmacist-prepared interim residential

care medication administration chart, based on the person's current medication list, resulted in:

- significantly fewer patients having delayed doses of medicines;
- significantly fewer patients requiring charts to be written by locum staff; and
- significantly less workaround practices by residential aged care staff to avoid missed doses.

#### Let's Reconcile

There is sound evidence that medication errors at transitions of care can be reduced through the process of medication reconciliation, which includes the curation of a current and complete medication list

Medication lists provide a 'snapshot' of the patient's current medicines, and are usually curated from multiple sources and a patient interview, using a structured interview technique.

Both the ACSQHC and the Society of Hospital Pharmacists of Australia (SHPA) believe that an up-to-date and accurate medication list is essential for ensuring safe prescribing and continuity of medication management.

The ACSQHC recommends that there should always be a comprehensive list of the patient's ongoing medicines, current at the point of discharge, whether or not all medicines are supplied by the hospital. In addition, the percentage of patients whose discharge summaries contain a current, accurate and comprehensive list of medicines is one of the ACSQHC's National Quality Use of Medicines Indicators for Australian Hospitals.

#### Let's Collaborate

Performing a medication reconciliation and curating a medication list can be time consuming and requires a specific skill set. Australian and overseas evidence suggests that medication reconciliation is poorly done by staff who are not 'focused' on medication management. Pharmacists have been shown to obtain a more accurate medication history and in a shorter time than other health professionals. However, most hospitals do not have enough pharmacists to provide this service to every patient, so one alternative is to have pharmacists provide training to other health professionals to improve the accuracy and efficiency of this activity.

There have been mixed results from the implementation of electronic medication management systems (eMMS) in improving the quality and availability of medication lists. Implementing an eMMS is more than just replacing a paper-based form with an electronic or screen-based forms. As with any medication reconciliation, it requires a review of how medicines are prescribed, supplied and administered and how medication lists are curated and recorded, irrespective of whether an electronic or hard copy format is used to record the information.



The ACQSHC uses the following description for either hard copy or electronic medication lists:

Medication list refers to a list of the medicines provided to the patient or carer, which includes the following information:

- all medicines to be taken by the patient, including the dose, frequency and indication for each medicine. All prescription, overthe-counter, and complementary medicines should be included, as well as all regular, intermittent and "as required" medicines. The list should include medicines to be taken by all routes i.e. oral, topical, parenteral etc.
- information about changes to therapy, including dose changes, new medicines and ceased medicines.
- any medicines NOT to be taken by the patient, including those causing allergies/adverse drug reactions.

#### Reducing the risks

We know that transition of care is a prime marker for the occurrence of medication problems and we can bring the risks down by;

- medication reconciliation on admission.
- complete medication lists.
- interim medication charts for those transferring to RACF.
- clear and complete written and verbal communication.

For people discharged from hospital into residential care the routine production of an interim residential care medication administration is to be encouraged. This helps to facilitate the administration of the person's medicines when they are transferred to a residential care facility.

The ACQHS studies show that consumers report poor communication, lack of information and lack of co-ordination of care as common reasons for problems arising from medicine use. This isn't new information, but it is information that is vital to considering our individual and collective role in changing these statistics.

SHPA's position is that the prescribing of medicines is best undertaken via a collaborative model, underpinned by timely and effective communication between the health care team and the patient. This includes a 'virtuous circle' approach where a readily accessible complete and current medication list is always available to support the evaluation and establish the basis for changes to a patient's medicine treatment.

We are all accountable for ensuring that our patients are safe in our care, and transitioned just as safely and effectively to the next setting as if we had never left them. •

"Problems with medicines and medicines related adverse events are the most common type of adverse events reported by patients in their transition from hospital to home."



Kristin Michaels
CEO Society of Hospital
Pharmacists of Australia

Kristin Michaels is the Chief Executive Officer of The Society of Hospital Pharmacists of Australia, with a keen interest and experience in health system design. She is a seasoned Board Director in both the primary, acute and aged care sectors. Kristin holds qualifications in Arts, Organisational Leadership, Governance and Health Service Management. She is a Fellow of the Australian Institute of Company Directors and is accredited as an International Partnership Broker.





#### Medication non-adherence and affordable, evidence-based solutions in chronic disease

#### What is medication non-adherence and why does it matter?

Medication non-adherence is the extent to which a patient's behaviour matches agreed recommendations from the prescriber. In chronic diseases such as cardiovascular disease (CVD), roughly 1 in every 2 prescribed medications are not taken as recommended with many people completely stopping their medications prematurely.

The implications of medication non-adherence in chronic diseases include poor clinical outcomes, reduced health status and increased avoidable healthcare costs. Eliminating non-adherence is thought to be one of the best investments for tackling chronic disease.

#### Why don't people take their medications?

Two very common reasons are cost and affordability. Being chronically sick is not cheap, reduces productivity, and can often send people below the poverty line. This is especially for those with multiple chronic diseases and those who are socioeconomically disadvantaged.

Australia is no exception. Though many medications for chronic diseases are heavily subsidised via Medicare's Pharmaceutical Benefits Scheme (PBS), 38.2% of the total healthcare expenditure paid out-of-pocket by individuals is spent on medicines.

In the past, increasing medication costs in Australia resulted in significant and sustained decreases in dispensing volumes for essential medications for chronic diseases. This sensitivity to cost suggests that people have a price point at which they will actively decide to change their medication-taking behaviour, that is be intentionally non-adherent.

#### Addressing intentional non-adherence: a new way to combat non-adherence?

By recognising that much non-adherence is intentional, reflecting both patient preferences and the balancing of medication costs with other household needs, strategies are being developed that better align interventions with patient adherence preferences, and thus

providing new opportunities to combat the problem of non-adherence.

#### Case study 1:

The 4-in-1 polypill for cardiovascular disease (CVD): a cheap, simple intervention that potentially saves the health system money.

The Australian-based Kanyini Guidelines Adherence to Polypill trial demonstrated that a 4-in-1 fixed dose combination polypill for CVD could significantly improve self-reported adherence and clinical outcomes when compared to usual care and potentially save taxpayers around \$623 per patient per year. Further studies revealed that 1: 55% of treatment decisions appear driven medication cost 2: Polypill treatment characteristics strongly align with patient adherence preferences; 3: This polypill was a broadly acceptable and relevant strategy meeting patient and provider needs.

While not a panacea to the problem of non-adherence, this appears to be a simple, cheap option that aligns with patient adherence preferences and has the potential to tackle the problem of non-adherence in CVD.

#### Case study 2:

### A financial incentive to improve the use of guidelines recommended, cost-effective medications for asthma

Combination inhaled corticosteroids (ICS) / long-acting beta2-agonist (LABA) inhalers are recommended in patients whose asthma is not sufficiently controlled on low or moderate dose ICS alone. There is no evidence that patients who are well controlled on ICS alone will gain any benefit from the addition of a LABA. Yet in Australia, 81% of ICS-containing medications are dispensed as ICS/LABA combination devices. As the price of ICS/LABA inhalers are more expensive to the Australian government than ICS alone, this prescribing pattern is placing a significant, growing and potentially modifiable burden on the PBS.

For patients, cost is a reported barrier to the quality use of ICS agents in Australia and previous increases in medication co-



#### ♠ Tracey Laba

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#### In a Nutshell

- 1. Medication non-adherence continues to undermine the effectiveness and cost-effectiveness of therapies for chronic diseases
- 2. An under recognised component of non-adherent behaviour is intentional, whereby people actively makes decisions to stop or change the way they take medications.
- 3. Cost and affordability are common reasons people stop taking medications for chronic diseases, including in Australia.
- **4.** Intentional non-adherence can thus be seen as reflecting both patient preferences and the balancing of medication costs with other household needs.
- 5. Simple, affordable and costeffective strategies that better align interventions with patient adherence preferences are needed.

payments had the largest impact on combination asthma medicines. Given this cost sensitivity, it has been hypothesised that a patient-directed financial incentive, in the form of a reduced co-payment, may be one way to promote the cost-effective use of ICS inhalers in the Australian community. This idea is currently being tested in an NHMRC-funded partnership grant, due for completion in 2016.

For full reference list visit xxxxxxx

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Australian Diagnostic Imaging Association Feature

# Emergency Departments face a new wave of patients

With emergency departments at public hospitals around the country struggling daily to cope with their existing patient load, it's hard to believe the Federal Government seems intent on increasing that burden substantially.

ut that is precisely what is going to happen when Medicare rebates for diagnostic imaging (DI) are reduced at the start of the new financial year.

The cuts, detailed in the recent Mid-Year Economic and Fiscal Outlook, will reduce Medicare spending on DI by about \$100 million a year with patients expected to make up the shortfall from their own pockets.

What makes this decision truly frustrating is that not only will it generate negative flow-on effects across the health system, not only will it hurt patients individually, it will do that while failing to produce the cost savings which are at the heart of the move.

One of the major downfalls of the new policy is that it will drive thousands of additional patients into the emergency departments of public hospitals across the country... departments which are already badly overstretched.

Recent performance figures, eagerly pounced on by the mainstream media, show NSW, Victoria and Queensland reporting a surge in people attending emergency departments.

Every week in NSW they are having to cope with 1600 more patients than a year ago<sup>1</sup>.

SA Health deputy chief executive Jenny Richter confirmed a similar scenario in her state: "...a general increase that's occurring across our emergency departments over the last 12 months."<sup>2</sup>

And The Australasian College for Emergency Medicine recently called for additional security at hospitals, claiming people are afraid to stay in emergency departments because of violent and aggressive patients.<sup>3</sup>

So into this pressured environment the Government is now set to inject potentially tens of thousands of new patients.

Some commentary on the rebate cuts has suggested the financial impact will be minimal, but the reality is far from that for patients needing diagnostic imaging – xrays, ultrasound, CT's and MRI's.

Under the plan three million people will be moved off bulk billing funding – mostly general, non-concession patients. These people will now not only expect to pay a gap, under existing Medicare rules they will expect to pay the entire fee for their imaging up-front.

| General Patients        | X-ray  | Ultrasound | CT      | MRI     |
|-------------------------|--------|------------|---------|---------|
| Estimated               | \$6    | \$12 -     | \$34 -  | \$62 -  |
| gap range               | - \$56 | \$101      | \$145   | \$173   |
| Estimated upfront costs | \$54   | \$117 -    | \$323 - | \$422 - |
|                         | -\$101 | \$206      | \$434   | \$532   |

These financial hits will simply be too harsh for too many people, especially when they are very aware there is a simple alternative.

If your son falls out of a tree and hurts his arm, why take him to a GP and then to a private diagnostic imaging clinic – incurring costs at every stage - when you can go to the emergency department and be treated for free?

## What about minor car accidents, back pain, work injuries?

With three million people, who were being treated for free, suddenly facing both out-of-pocket and up-front fees, it will only take a small percentage of them to make that decision and our already overstressed emergency departments will feel significantly more pressure.

And for every patient which makes that choice healthcare costs will rise, as diagnostic imaging conducted in public hospitals costs the health system significantly more than when carried out in a private practice.

But of course this new policy won't just impact on emergency services; the negative consequences will go much further.

Many general patients just won't accept the inevitable, large upfront costs and gaps. They will put off having the imaging their doctor has recommended, missing the opportunity for early intervention and increasing the overall cost to the taxpayer.

For example, where a GP recommends a breast ultrasound to access a lump in a patient's

breast, a general patient can expect the cost to be between \$93 and \$185 and the Medicare refund will be \$83.55. If the result is abnormal, the GP will probably recommend a biopsy which will cost a further \$104 to \$194, of which Medicare will refund \$92.75.

Even if practices wanted to provide one of the services for free, Medicare rules do not allow it – they can only bulk bill all services.

In lower socioeconomic areas some practices are likely to reduce their services or close their doors. This is not guesswork – it was happening in the late 2000s before the bulk billing incentive funding was introduced in recognition of the long-standing indexation freeze.

The pressure to bulk billing will promote 'Churn' radiology which in turn leads to misdiagnosis and services having to be repeated which will increase costs to taxpayers and patients further still.

People were clearly reluctant to accept a copayment of \$7, so how will they react when they are asked to pay average upfront costs of \$134 to \$214 and gaps of \$14 to \$94 for diagnostic imaging?

Australia has one of the best health systems in the world and everyone – medical professionals, providers, and the general public – can understand the government's desire to make it efficient and sustainable.

But the decision to cut Medicare rebates for diagnostic imaging is simply bad policy – it won't deliver the savings they envisage, but it will hurt the health system and a vast number of individual patients.

It's also unnecessary. The Australian Diagnostic Imaging Association has identified a number of ways that the Government can achieve similar levels of saving by cutting waste and streamlining the system.

For example, ensuring that all providers comply with a Quality Framework for the provision of diagnostic imaging services and by addressing the shortfalls in arm's length referral requirements are just two reforms which would deliver very significant savings and would protect patients.

We detailed many other improvements in our submission to the Government's own MBS Review; ways to improve the sustainability of Medicare while still providing patient access to quality diagnostic imaging services.

The early detection and treatment of medical conditions – keeping people out of hospitals – must be a basic priority for patients and the entire health system.

And it's undeniable that diagnostic imaging, properly interpreted by highly skilled and experienced radiologists, is a vital and fundamental tool in achieving that goal, so a policy which will actually drive people away from imaging will simply and sadly be counter-productive.

Dr Christian Wriedt, ADIA President. 🗘

"The decision to cut Medicare rebates for diagnostic imaging is simply bad policy – it won't deliver the savings they envisage, but it will hurt the health system and a vast number of individual patients."



Dr Christian Wriedt
President of the Australian
Diagnostic Imaging Association

imaging practices
throughout Australia, both
in the community and in
hospitals, and promotes
ongoing development of
quality practice standards
so doctors and their patients
can have certainty of quality,
access and delivery of
medical imaging services.

Visit our website www.adia.asn.au

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- 1. The Australian. January 16, 2016
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- 3. Daily Telegraph. January 15, 2016

# Fuelling your Mental Health



Your mood and stress levels are affected by both the type and amount of food you eat. Without enough of the right foods, it is harder to concentrate and think clearly. *Katherine Baqleh* takes us through the key nutrition principles that, when followed, can help optimise stress management.

iets that focus on specific foods or food groups and exclude or severely restrict others are unsustainable in the long-term and put people at risk of nutrient deficiencies.

#### Everyday Stress

Stress can be a good thing. It can motivate during times of approaching deadlines, and can give an added adrenalin rush required for ideas to blossom quickly. On the other hand, too little stress can hinder motivation, creativity and productivity, as well as increase boredom and restlessness. Finding a balance between healthy and unhealthy stress is important. Too much stress can lead to anxiety, exhaustion, loss of control, eventual burn out and an inability to effectively complete any task at hand. As such, to manage everyday stress, experts recommend a few techniques:

- Talk about it. Find someone that you can console in and who can give you a second perspective.
- Exercise and meditate for mindfulness on most days: by being involved in more leisure-time activities, particularly in nature-based areas surrounded by more greenery, you are giving your mind and body time to relax and rejuvenate.
- Think carefully about how you want to achieve work-life balance. Wishful thinking will remain a wish when your strategy is unclear.
- Spend more time strengthening your social health – surround yourself with friends and family



"Skipping meals due to a lack of time will keep you feeling exhausted, may prevent healthy and sustainable weight loss, and may directly affect your mood and hence interactions with others."

#### **Everyday Nutrition**

The nutritional demand for every occupation and lifestyle varies. Stress affects our dietary habits and dietary habits can affect our stress levels. For optimal health, concentration and improved mood, follow these key nutrition principles:

Enjoy eating a variety of nutritious foods, including vegetables and legumes, fruit, grains (cereal foods), meat and alternatives, dairy and alternatives. Portion out your main meals so that at least half is composed of colourful vegetables and salad, and one quarter each for both grain foods and meat or alternatives. Every main meal should also include a source of healthy fats, such as avocado, olive oil, oily fish (examples include salmon, tuna, sardines) and unsalted nuts and seeds. Healthy fats are not only beneficial for heart and brain health, but will help to stabilise blood sugar levels and keep you feeling full for longer.

Cook at home more often and choose healthier cooking methods, such as stir-frying, steaming, baking, grilling, roasting, BBQ and microwaving. Meats should be lean with all visible fat trimmed off and the skin on chicken removed.

Eat regular meals: skipping meals due to a lack of time will keep you feeling exhausted, may prevent healthy and sustainable weight loss, and may directly affect your mood and hence interactions with others.

Keep well hydrated with plenty of water to increase alertness and productivity. To benefit your waistline, if you choose to drink alcohol, limit intake to no more than two standard drinks per night, with two to three alcohol free nights per week. Alcohol may be a short term stress relief, however it may contribute to feelings of depression and anxiety in the long term and make stress harder to deal with.

Treat foods and sugar-sweetened beverages such as soft drinks and juices should be limited to

special occasions and enjoyed in small volumes.

Look out for fad diet red flags, such as:

- One-size-fits-all diets
- Diets that promote an obsessive focus on particular foods or nutrients
- Diets that are based on significant restriction of food groups or fasting without medical reason
- Diets with exaggerated health claims including an anti-medical treatment focus
- · Detoxification diets
- Magic-bullet solutions that do not include long-term lifestyle changes
- Diets based on conspiracy theories, including those against food industries
- Diets based on compulsory vitamin and mineral supplementation and complementary medicines such as colonic irrigation
- Recommendations to include non-food substances in the diet, such as charcoal.

Most of these diets prey on vulnerable individuals that have tried improving their health and lifestyles in the past with no success, so it is important to consult an Accredited Practising Dietitian for individualised advice and appropriate goals that suit your needs and your lifestyle. A healthy diet is the foundation of a healthy mind.

Whilst some workplace stress or stress at home is normal and often a result of increased demands and responsibilities, excessive stress can interfere with productivity and can impact physical, social and emotional health. The right balance of food and nutrition promotes optimal health and improves concentration and mood, making stress management easier. •



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Katherine Baqleh is an Accredited Practising Dietitian and nutritionist and founder of Health Victory Nutrition Experts, a private practice and nutrition consultancy located in a number of clinics across Sydney. Katherine conducts private consultations, menu reviews and seminars and conferences in a number of community (such schools, rehabilitation centres, mothers groups, aged care centres) and corporate settings. She is also actively involved with the media and has both contributed to and been cited in numerous print and online platforms. Her main passion lies with cardiovascular disease, diabetes and weight management.

To find out more, visit healthvictorynutrition.com.au or Like "Health Victory Nutrition Experts" on Facebook.

The Dietitians Association of Australia recommends seeing an Accredited Practising Dietitian (APD) who can tailor an eating plan to benefit individual needs and assist community and corporate organisations develop healthier workplaces. To find an APD in your area, visit the DAA website www.daa.asn.au and look under 'Find an Accredited Practising Dietitian'.

## E-Health in 2016.

## What Can You Expect For This Year? It Will Be One to Watch!



think it would be fair to say that 2015 wrapped up quietly with those interested in the e-Health domain expecting a lot of back-room activity to be happening after the passage of new PCEHR (now officially called My Health Record (mHR after Jan 16, 2016) legislation causing waves in 2016.

This legislation, among other things, has enabled the conduct of trials of an 'opt-out' approach to your personal information being held in the Government mHR system and has enabled a new Australian Digital Health Agency (previously the ACeH) to replace some Department of Health functions and the National EHealth Transition Authority (which is seen as having lost clinician and technical confidence).

The mHR change was seen as necessary by the Department because, after two years, clinician and consumer interest and use in the PCEHR was very low with less than 10% of the population having a record and very few patients or clinicians actually accessing the record. The change was seen as the last throw of the dice to have the system become relevant and useful. If the change is seen as successful, the legislation authorises extension of the record to the whole population.

At the time of writing we have seen the expected activity begin to manifest. The present announced plan is that there will be two trials of the 'opt-out' consent approach conducted. The first will involve about half a million people in Far North Queensland and the second trial will be conducted in Far Western Sydney and the adjacent Blue Mountains.

What the trials will involve is the creation of a health record for each individual with the record then being populated with data held in the Medical Benefits and PBS systems for the individual concerned.

So far there have been consultations with a

variety of different health professionals (GPs, Allied Health etc.) where the Government's plans have been outlined, as discussed above. It is planned that over the next period there will be an educational program conducted to inform the relevant populations of what is happening and to offer anyone who is concerned to not have their record made accessible - although a record will apparently still be created.

Clearly before any trial can begin it will be necessary for GPs, Allied Health and Hospitals to have access to systems where the records are integrated into their present systems.

If there is no slippage in the time-table (which seems pretty unlikely) it is intended that the records of those who have not opted out will be made available to the individual, so they can set up the access controls they desire for their mHR and then the system will be made available for access by clinicians - around the end of June 2016.

An evaluation team has been funded (\$1.4M) until the end of November 2016, which seems to be an extremely short time to complete an evaluation and report on the trial(s).

There have been no criteria made public as to how success of the trials will be determined and, as it is clear that the Department wants to develop a clinical database for additional research purposes rather than direct patient care and safety, it seems likely the system will just proceed - useful clinically or not. The Government has invested close to a \$1.0Billion in the system which has so far failed - and committed an additional \$0.4Billion over the next few years - so simply walking away, sadly, seems unlikely.

The new Australian Digital Health Agency is intended to commence operations on July 1, 2016 and is the other major e-Health activity for 2016 that we are presently aware of.

'The (mHR) change was seen as the last throw of the dice to have the system become relevant and useful.'





Dr David More is a Health IT consultant with more than 20 years' experience in the eHealth area. His blog can be found at aushealthit. blogspot.com and covers all matters eHealth. He may be contacted via the links provided on the blog.



#### The functions of the Agency

- as set out in the enabling regulations, is as follows:
- (a) to coordinate, and provide input into, the ongoing development of the National Digital Health Strategy;
- **(b)** to implement those aspects of the National Digital Health Strategy that are directed by the Ministerial Council;
- (c) to develop, implement, manage, operate and continuously innovate and improve specifications, standards, systems and services in relation to digital health, consistently with the national digital health work program;
- (d) to develop, implement and operate comprehensive and effective clinical governance, using a whole of system approach, to ensure clinical safety in the delivery of the national digital health work program;

- **(e)** to develop, monitor and manage specifications and standards to maximise effective interoperability of public and private sector digital health systems;
- (f) to develop and implement compliance approaches in relation to the adoption of agreed specifications and standards relating to digital health;
- **(g)** to liaise and cooperate with overseas and international bodies on matters relating to digital health;
- **(h)** such other functions as are conferred on the Agency by this instrument or by any other law of the Commonwealth;
- (i) to do anything incidental to or conducive to the performance of any of the above functions.

#### In Summary

Essentially the Agency is to become the Operato of the mHR and the co-ordinator and facilitator o national e-Health initiatives.

As with all entitles of this type, the selection of the CEO and Board and the quality of those appointed to the various advisory committees which will cover clinical and technical issues, privacy and security issues, consumer issues and jurisdictional issues will determine how likely success is. One key concern is all the activity on the opt-out trials etc before the agency responsible even exists. One can't but wonder how sensible this is.

Left out of this discussion is the very wide range of State and private sector initiatives, some of which seem to me to show very considerable promise.

They will have to form the basis of a future article.

All in all, 2016 looks to be a pretty big year in National E-Health. At this point it is impossible to know how things will turn out and if the public will receive value for the money being spent.

Nevertheless it will be fun to watch!

# Ethics and research in emergency medicine

Despite the difficulties facing researchers in the area of emergency medicine, there is recent thoughtful and constructive discussion on how to conduct this research<sup>1</sup>. The need is as great in this specialty as in others and, as elsewhere, tends to be generated by new technology and new pharmacology.

mergency medicine can be defined as a medical specialty involving care for undifferentiated, unscheduled patients with potentially serious acute illnesses or injuries that require immediate medical attention.

While not usually providing long-term or continuing care, emergency physicians undertake the necessary investigations and interventions to diagnose patients in the acute phase, to liaise with physicians from other specialities, and to resuscitate and stabilise those who are seriously ill or injured. Emergency physicians

generally practice in hospital emergency departments, pre-hospital settings via emergency medical services, and intensive care units, but may also work in primary care settings such as urgent care clinics.

As with other medical specialties, there is a recognised need for practice in emergency medicine to be based on evidence of efficacy and safety. For this to be the case, continuing research is necessary.

Over the last six decades, a well-established consensus has emerged of the ethical values and principles that are essential for

the conduct of research involving humans and, in particular, of medical research. In Australia, these principles and values are expressed, in the National Statement on Ethical Conduct in Human Research, 2007 (as amended 2015) NHMRC, ARC, UA (National Statement) as:

'Research merit and integrity – that is, only when proposed research has merit: scientific validity and social value, and the researchers who are to conduct it have integrity, is the involvement of human participants in the research ethically justifiable.'



#### Beneficence

- that is, all risks to participants, must be justified by the potential benefits of the research.

#### Respect

 that is, giving due scope to the capacity of participants to make their own decisions and having due regard for their privacy, beliefs, customs and culture.

#### Justice

- that is that the selection, exclusion and inclusion of participants is fair and that the distribution of the burdens and benefits of participation and research is also fair.



#### Colin Thomson

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Colin Thomson, BA, LLM (Sydney) is Professor of Law at the University of Wollongong and Academic Leader for Health Law and Ethics in the Graduate School of Medicine. He also works as a consultant.

He was a member of the Medical Research Ethics Committee (1988-91) of the National Health and Medical Research Council and, from 1998-2002 a member, and from 2006-2009, chair of the Australian Health Ethics Committee. As a consultant, he has advised NHMRC, FaHCSIA, Health Departments of NSW, Qld and Vic and several universities. He is a Senior Consultant with Australasian Human Research Ethics Consultancy Services (www.ahrecs.com)

Colin has provided training to human research ethics committees, chairs the CSIRO Social Science HREC and is a member of HRECs at Department of Health and Ageing and University of Wollongong/ Illawarra Shoalhaven LHD.

He is a joint author of Good Medical Practice: professionalism, ethics and law, 2010, Cambridge University Press.

'Research merit and integrity – that is, only when proposed research has merit: scientific validity and social value, and the researchers who are to conduct it have integrity, is the involvement of human participants in the research ethically justifiable.'

National Statement on Ethical Conduct in Human Research, 2007

The elements in the above definition of emergency medicine reveal clearly the ethical difficulties of research in emergency medicine. Although devising a scientifically valid project is unlikely to be particularly difficult, demonstrating the value of establishing that a trial treatment is superior to the conventional methods, in the face of the urgent need of participants, is likely to be challenging to ethical reviewers.

The fact that patients are experiencing serious, acute illnesses or injuries and that emergency clinicians do not normally provide continuing care, are likely to make it more difficult than in other specialties to clearly distinguish the risks of the emergency situation from the risks involved in conducting a research study.

The fact that emergency patients are undifferentiated, unscheduled and require immediate medical attention vastly complicates conformity with the principle of respect. Not only will the capacity of many (or even most) potential participants be impaired or even lacking, the time available to provide information, generate understanding and achieve consent will usually be severely limited.

Lastly, because patients are characteristically undifferentiated and unscheduled it may appear difficult to ensure justice in their recruitment and in the burdens that they bear as participants compared with the benefits that may flow to others.

The primary focus of the current conversation appears to be on consent: specifically the practical difficulties presented by potential participants who either lack or have a severely impaired capacity. In other medical specialties, there are well-established means of addressing these shortcomings by relying on ethical and legal authorisation of substitute decision-makers to provide consent on behalf of impaired or unconscious

participants. These remain available in emergency medicine but there may not be time available to locate, contact and gain consent from an authorised representative.

In the face of these difficulties, some modifications of conventional means of seeking and gaining consent to research participation have been explored. These include providing a limited or simplified amount of information, staging participation from initial intervention and providing options to continue or revert to standard care thereafter, or reliance on 'ethics committee approval' of either a deferred consent or a waiver of the requirement for consent.

The National Statement provides sets of criteria to be considered by an ethics committee in reaching a decision to either defer (National Statement, paragraphs 4.4.13 to 4.4.14) or to waive the requirement for consent (National Statement paragraphs 2.3.9 to 2.3.10). Both of these sets of ethical criteria make it clear that they are subject to proposed research procedures being lawful within the relevant jurisdiction. It is notable here that guardianship laws in Queensland, New South Wales and Victoria have made some provision for the recruitment of participants lacking decisional capacity to certain kinds of human research.

When considering a research project in emergency medicine, seeking advice from an experienced human research ethics staff member, committee chair or member will always be a prudent first step. Carefully assessing how a proposed project can be shown to meet each of the four National Statement principles is a task to be confronted at the commencement of the project, and not after the project has been designed. Use of and reliance on the relevant parts of the National statement in order to demonstrate how a proposed unique study in emergency medicine will conform is an appropriate strategy. •

The National Statement makes clear, at page 6, that: These ethical guidelines are not simply a set of rules. Their application should not be mechanical. It always requires, from each individual, deliberation on the values and principles, exercise of judgement, and an appreciation of context.



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The INHALO® features a high volume gas package which is light, easy to use and versatile. It eliminates the need for regulators, and with its plug-and-go functionality will make cylinder changeovers quicker, safer and easier - allowing you to concentrate on patient care.

BOC was the first company to develop and introduce the integrated valve cylinder to the healthcare sector. Its popularity has gone from strength to strength as customers have discovered how more efficient and convenient it is to use. These lightweight, ready-to-use cylinders have a built in pressure regulator, easy on/off handwheel and integral flow

It is designed to make cylinder operation and the task of medical oxygen administration easier for healthcare staff, as there is no need to attach a regulator. With a wide range of flow settings, you can accurately select the treatment to meet the patient's prescription. With the integrated valve cylinder, you get constant outlet pressure and flow settings to match your requirements. The cylinder has a "live" contents gauge, giving you a clear indication of contents at all times, even when the cylinder is turned off. The INHALO® is constructed from lightweight materials, making it easier and safer to handle than conventional cylinders. Using a medical oxygen integrated valve cylinder, ensures that therapy can be started right away, without any complex set-up or unnecessary manual handling for the operator.

#### Integral valve

- Integrated valve/regulator/ flowmeter
- Enables simple multi-functional use and eliminates the need for external regulators and flow meters
- Enables easier, safer and faster cylinder changeovers saving precious time
- Inhalo is completely maintained by BOC saving you costly equipment inventory & maintenance
- A wide selection of accurate flow settings (1-15 lpm) provides for a wide range of oxygen therapies

#### Live contents gauge

- Easy to read gauge instantly provides a clear indication of gas level at all times
- Prevents waste as cylinder doesn't need to be opened to determine contents

#### Design

- Ergonomic carry handle is designed to provide a balanced and safe carry point
- Robust design ensures a secure supply of oxygen
- Fibre-wrapped cylinder provides high capacity but light weight making handling easy
- Tamper evident seal provides assurance of quality and safety

Ease of use simplifies training

#### High capacity package

- The high gas capacity (630 litres) of the INHALO means less cylinder changes saving you
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#### Multiple oxygen outlets

- The 'plug & go' functionality make the INHALO versatile & easy to use
- Allows multiple therapies from the same cylinder, e.g. oxygen supply &/or suction device (from DIO connection)
- The multiple outlets mean the INHALO acts like a cylinder & a wall outlet at the same time

#### Appearance

- The INHALO has a smart, clinical look that reassures patients and enhances compliance
- Clear plastic finish allows easy cleaning and provides for better hygiene

#### Registration

- Medical device, AUST R 135358, 187646
- Medical oxygen AUST R 34468

#### Inhalo specifications

| Gas code                             | 400CD  |
|--------------------------------------|--|
| Gas type                             | Medical Oxygen E.P. Grade  |
| Gas volume                           | 630 litres   |
| Empty weight                         | 3.5 kg   |
| Full weight                          | 4.4 kg   |
| Height                               | 555mm  |
| Diameter                             | 105mm  |
| Outlets                              | 400 kPa outlet pressure (g)  |
| - Firtree                            | Also known as 'barbed tail' Tubing diameters<br>6-8 mm Flow rates 1, 2, 3, 4, 5, 6, 7, 8, 10, 12, 15 lpm |
| - Diameter Indexed<br>Outlet (D.I.O) | Also known as Sleeve Index System (S.I.S.) refer AS2896 300 ipm (max)                                    |



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#### NEW ER COLUMN

## In Conversation

In Conversation provides a glimpse into the life of a healthcare professional with a passion for their field of medicine.

IN THIS ISSUE WE TALK TO DR YUSUKE UENO.

#### What prompted your decision to work in the area of emergency medicine (EM)?

I realised late in my career that EM ticked all the boxes for me. EM allows me to manage the acute clinical aspects of a patient's presentation without being in a clinic or ward round. I think it really appeals to my interest in being an acute generalist and my desire to be a problem solver. When I started working in EM, the variety, diversity and broad range of exposure was really appealing to me.

#### How did your career path lead you to your current position?

I don't think I've ever had a specific career path mapped out in front of me. It was a combination of good timing and a desire to learn more about different specialities in my training. Ironically, when I graduated in 1996 in the UK EM wasn't an appealing career at the time so I started training in surgery.

Little by little I became dissatisfied with some aspects of surgical training and in 2002 I took a career break to come and work in an emergency department in Australia. That was Nambour General Hospital on Queensland's Sunshine Coast and I never looked back. Here I experienced other specialities such as critical care and medical management. In 2007 I decided to complete my training in EM. For me, the beauty of emergency medicine is that I get to use everything that I've learned along the way on a daily basis. All the other EM specialists that I've met have diverse backgrounds and this adds to the richness of our speciality.

#### What inspires and sustains you in this demanding field of medicine?

Well it's a combination of things. It's the satisfaction after a busy shift where everyone has worked really hard to achieve the best outcome for all of our patients. Those days can be tiring yet very rewarding. It's also about being able to contribute to patients and my team; the day that I no longer feel this, will be the day I move on. In terms of making contributions to our department, I have been involved in supporting our EM trainees through a major change to their curriculum last year and I've been lucky to be involved in the planning and design of the new hospital in Kawana (Sunshine Coast University Hospital). On a personal level, what sustains me is having a very supportive and understanding family and an ability to switch off on my days off.

#### What are some of the challenges facing EM physicians?

For the EM physician as an individual, the challenge is to retain job satisfaction and longevity in an increasingly demanding environment. The demands on your time, the emotional involvement and at times the physical and psychological drain can be challenging for an EM clinician. As a young doctor the late nights and disturbed sleep that come with shift work may be manageable



but as you get older it becomes more difficult to recover from. The healthcare system needs to ensure that the collective experience of senior emergency physicians is not lost in this environment.

The other challenges for us in EM, mirror what is being felt across the work together - meeting the needs of an ageing population and patients with chronic diseases such as diabetes. EM is in the space between primary care, community health and secondary health so if the overall system is not equipped to cope with rising demands, EM will be expected to fill that widening space. As we are available 24/7 - and don't close our doors, the Emergency Department is becoming the place that is expected to tackle the deficits in other systems, including social welfare.

There are also opportunities for EM physicians to make a difference to help meet these challenges. At Nambour Hospital for example, the Geriatric Emergency Department Intervention (GEDI) team are making significant contributions to the better management of this group of patients with complex needs.

#### Do you see any interesting innovations coming into EDs in the near future?

EM is a place where innovation comes with the job. We need to innovate when it comes to patient models of care. GEDI is a perfect example of such innovation.

EM physicians are well placed to drive innovation through research. The Queensland Emergency Medicine Research Foundation, for example, supports research into EM to see what treatments work and how we can innovate to best care for our patients.

Treatments and medications have changed dramatically over the past 20 years and we need to stay up-to-date with progress in other specialities. HIV is a good example of a disease that is now described as a chronic disease that people can live with instead of a death sentence. So these changes drive EM clinicians to maintain linkages with other specialities and work together to ensure that our patients get the best up to date care possible.

As far as technological innovation goes, there are always new devices that build on existing technology but I don't think we have seen the full potential of what modern technology can offer EM. •



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#### Celebrating 40 years of ASID 1976 - 2016

Join us in Launceston for the Australasian Society for Infectious Diseases (ASID) Annual Scientific Meeting (ASM) from 20 - 23 April 2016.

he ASID ASM is all about connecting and exchanging: connecting clinicians, microbiologists and other health professionals with a common interest in infectious diseases and providing a friendly forum for the exchange of scientific advances in the prevention, diagnosis and management of clinical infectious diseases.

#### A Compelling Program

The 2016 Conference program focuses on providing an innovative and comprehensive review of the latest developments in the rapidly expanding fields of antimicrobial stewardship, infection control, viral hepatitis and more. To view the full program please visit the website.

#### 40th Anniversary Program Highlights:

A Public Lecture on Superbugs will be open to all who wish to attend. The public lecture will be held at the Hotel Grand Chancellor Launceston on Thursday 21 April and will be presented by Professor Lindsay Grayson. The lecture will be opened by Michael Ferguson,

Minister for Health, Tasmania. The Gala Dinner on Friday, 22 April will also feature anniversary highlights.

Take a walk down memory lane, in a special dedicated Symposium of previous Frank Fenner Award Winners', with presentations from the following past winners;

1999 Nicholas Anstey 2002 Sharon Lewin 2004 Cheryl Jones 2008 David Paterson 2009 Dave Burgner 2012 Allen Cheng

#### Renowned International and National Speakers

Three international speakers will accompany the national line up of experts, to present recent and relevant global and local scientific research through a series of keynote lectures, proffered papers, symposia and educational workshops.

#### International Keynote Speakers 2016

- Professor David Kimberlin, USA
- Professor Gavin Screaton, UK
- · Professor Alison Holmes, UK

- MacFarlane Burnet Speaker 2016

#### Plenary Speakers 2016

- Professor Glenn Browning
- Associate Professor Kirsty Buising
- · Professor Stephen Graves
- · Professor Jonathan Iredell
- Professor Anne Kelso
- · Professor Sharon Lewin
- Professor Ben Marais
- Dr Trisha Peel
- Associate Professor Rhonda Stuart
- Facilitation of Special Interest Groups

The conference format provides local special interest groups with the opportunity to come together during the meeting. These include the

- Paediatric Special Interest Group (ANZPID), confirmed Speakers;
- Dr Christopher Blyth
- Prof David Kimberlin
- Healthcare Infection Control Special Interest Group

(HICSIG), confirmed Speakers;

- Ms Alison Farrington
- Prof Benjamin Howden
- Prof Paul Johnson
- A/Prof Caroline Marshall
- · A/Prof Rhonda Stuart
- · Dr Mary Jo Waters
- Mycology Special Interest Group (ANZMIG), confirmed Speakers;
- Ms Belinda Chapman
- Dr Orla Morrissey
- Viral Hepatitis Special Interest Group (VHSIG), confirmed Speakers;
- A/Prof Joshua Davis
- Prof lan Gust
- Dr Krispin Hajkowicz
- · Prof Margaret Hellard

#### Activities and Fun

Launceston is a charming and friendly city to visit and provides a wonderful opportunity for you and colleagues to explore the many great attractions that Tasmania has to offer at the same time as expanding professional skills and networks.



Register for the conference now. Visit www.asid.net.au/meetings/annual-scientific-meeting-2016



# ASID ANNUAL SCIENTIFIC MEETING

Launceston, 20 - 23 April 2016

#### **REGISTER NOW**

and view the program at:



www.asid.net.au/meetings/2016-asm-2



#### **SOCIAL FUNCTIONS**

Welcome Reception
Josef Chromy Wines
Wednesday 20 April 2016

Gala Dinner
The Albert Hall
Friday 22 April 2016



#### **DEADLINES**

Accommodation Booking Friday 19 February 2016

Standard Registration Tuesday 29 March 2016



#### CONTACT

For further details contact the meeting secretariat

Tel +61 2 8204 0770
Email meeting@asid.net.au
Web www.asid.net.au/
meetings/2016-asm-2



#### **KEYNOTE SPEAKERS**



#### **Professor David Kimberlin**

Co-Director of the Division of Pediatric Infectious Diseases at the University of Alabama, Birmingham, USA



#### **Professor Gavin Screaton**

Dean of the Faculty of Medicine, Imperial College, London, UK



#### **Professor Sharon Lewin**

Director of the Peter Doherty Institute for Infection and Immunity, AUS





#### **Professor Alison Holmes**

Professor of Infectious Diseases and Director of Infection Prevention and Control (DIPC), London Imperial College Healthcare NHS Trust, UK



#### **VENUE**

#### **Hotel Grand Chancellor Launceston**

Enjoy contemporary style and a historic location, just steps from the CBD and Brisbane Street Mall.



Join us in Launceston to celebrate the 40<sup>th</sup> anniversary of ASID



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