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INFECTION CONTROL

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Welcome to our Spring Infection Control issue

This being our infection control special, we have an information-packed piece from the Australian Commission on Safety and Quality in Health Care on sepsis. This life-threating condition kills more Australians than breast or prostate cancer, with 55,000 cases a year in Australia. The total annual cost is estimated to be $4.8bn, with direct hospital costs of around $700m a year. Considering this, it's only fitting to see the Australian Commission on Safety and Quality in Health Care working with states and territories and further strengthen its efforts to raise awareness of this under-recognised condition and improve outcomes for Australians with sepsis. To read more about sepsis and the national efforts against the condition, turn to page 28.

In this issue's 'In Conversation' piece, Dr Brett Shannon tells us about his work to improve occupational health outcomes for Indigenous and vulnerable populations.

This issue also features insightful articles on innovative healthcare delivery in remote regions, the role of collaboration in aged care, a tech-enabled quarantine solution, challenges facing nursing, infection control in virtual settings and aged care, exciting research projects and more.

Lastly, as you'd have gathered, I have recently taken over from Jane Allman as the Editor of *Hospital + Healthcare*. WF Media and I would like to thank her for her hard work and commitment.

Mansi Gandhi

Editor, H+H

hh@wfmedia.com.au

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 **hh@wfmedia.com.au**.

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The Rounds
Updates in health care

Hospital-grade antenatal care delivered virtually

Trials of an antenatal care program delivered by telehealth have demonstrated a level of care provision that is as good as a face-to-face consultation, including the identification of common complications.

The majority of antenatal appointments usually occur face-to-face within a hospital environment, but a collaborative study conducted by Monash University and Monash Health integrated an antenatal care program delivered via telehealth between 20 April and 26 July 2020. The program successfully reduced face-to-face consultations by 50% without affecting the detection and management of common pregnancy complications, including pre-eclampsia, foetal growth restriction and gestational diabetes, when compared with conventionally delivered antenatal care.

Developed by a multidisciplinary team of obstetric, midwifery and general practice providers, telehealth consultations were supplemented with a suite of patient and staff information sheets, and systems to support remote blood pressure checks and foetal growth assessments.

"It was clear that antenatal care delivery had to be adapted to protect pregnant women and staff from unnecessary exposure to the virus [SARS-CoV-2]," said study first author Dr Kirsten Palmer from the Monash University School of Clinical Sciences and Monash Health.

"We recognised that a key limitation of telehealth was the inability to do physical examinations, which are essential in antenatal care, but we were able to implement low-cost measures to support these assessments in the home."

Blood pressure was self-checked on purchased automated blood pressure monitors, with local health providers, or at the time of hospital ultrasound assessments.

Remote monitoring of foetal growth involved the introduction of self-measured symphyseal-fundal heights weekly from 24 weeks' gestation plotted on provided foetal growth charts supported by educational material, and ultrasound assessment of foetal growth was done in hospital according to national clinical care recommendations.

The findings are published in *The Lancet*.

After implementing telehealth on 23 March 2020 — following the federal government's announcement of funding support — Monash Health has delivered more than 40,000 antenatal consultations via telehealth, with data from the integrated antenatal care program (April–July 2020) confirming that women were still receiving the same high-quality care as they had with the traditional in-person visits.

Program Director of the Women's and Newborn Program and Director of Obstetric Services at Monash Health Associate Professor Ryan Hodges added, "Although telehealth was implemented during a global health crisis, which facilitated the rapid development and uptake of telehealth, this program might provide many benefits for the future delivery of antenatal care and minimise risk in a future epidemic.

"We are hoping to continue it as part of our antenatal care program as it supports women to receive more personalised care with the same excellent outcomes."

Dr Palmer concluded, "We have shown that such an approach seems to be safe for continuing to achieve a high standard of pregnancy care."

New standard for opioid analgesics to treat acute pain in hospital

The Australian Commission on Safety and Quality in Health Care is seeking comments on the draft clinical care standard for opioid analgesics until midnight Monday, 4 October 2021.

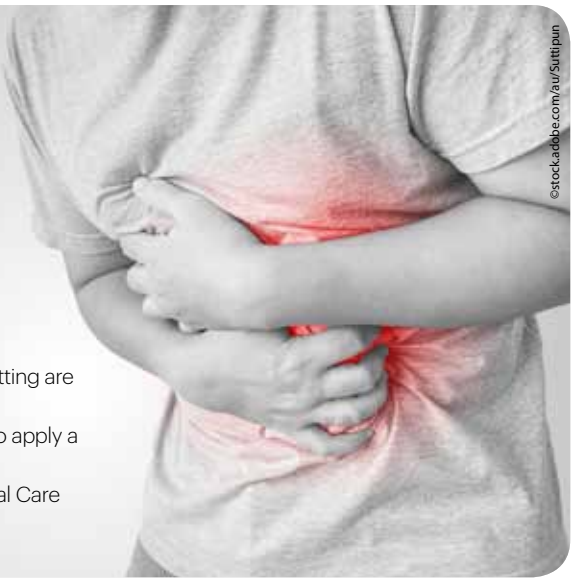
Up to 70% of Australian hospitals report sending patients home with powerful opioid analgesics 'just in case'.

The Opioid Analgesic Stewardship in Acute Pain Clinical Care Standard will guide appropriate prescribing of opioid analgesics for the management of acute pain, in patients presenting to hospital emergency departments and post-surgical patients.

Clinicians, pharmacists and health services who work with patients in the hospital setting are invited to view and comment on the draft standard.

The new standard supports opioid analgesic stewardship, which uses a framework to apply a systematic approach to optimise the use of these medicines.

For questions about the draft standard or the consultation, please contact the Clinical Care Standards team at CCS@safetyandquality.gov.au.



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The Rounds
Updates in health care

‘Spider web’ mechanism traps and kills viruses

Immunologists at Canada’s McMaster University have discovered a mechanism that acts like a spider web — trapping and killing pathogens such as influenza or SARS-CoV-2.

The researchers found that white blood cells called neutrophils explode when they bind to such pathogens coated in antibodies and release DNA outside of the cell, creating a sticky tangle which acts as a trap.

Published in the *Proceedings of the National Academy of Science*, the findings are significant because little is understood about how antibodies neutralise viruses in the respiratory tract.

The discovery has implications for vaccine design and delivery, including aerosol and nasal spray technologies that could help the body head off infections before they have a chance to take hold.

“Vaccines can produce these antibodies that are present in our lungs, which are the first type of antibody to see viruses like flu or COVID-19, which infect our lungs and respiratory tracts,” said study lead author Associate Professor Matthew Miller.

“Mechanisms that can stop the infection at the site where it enters our body can prevent the spread and serious complications.”

By comparison, injectable vaccines are designed to bolster antibodies in the blood, but those antibodies are not as prevalent at the sites where infection begins.

“We should be thinking carefully about next-generation COVID-19 vaccines that could be administered in the respiratory tract to stimulate antibodies. We don’t have many candidates right now that are focused on raising the mucosal response,” said graduate student and lead author Hannah Stacey.

“If you want a lot of these antibodies that are really abundant in blood, then injections make the most sense, but if you want antibodies that are abundant in the respiratory tract, then a spray or an aerosol makes sense,” she said.

Researchers caution that while the body’s spider-web mechanism has the potential to be hugely beneficial, it can cause harm too, including inflammation and further illness when the web formation is uncontrollable.

They point to the early waves of the pandemic, prior to vaccinations, when these neutrophil extracellular traps, or NETs, were found in some patients’ lungs, and had made their breathing more difficult.

“An immune response that is meant to protect you can end up harming you if it’s not properly controlled,” Miller explained. “It’s important to understand the balance of the immune system. If you have a lot of these antibodies before you get infected, they are likely going to protect you, but if the infection itself stimulates a lot of those antibodies, it might be harmful.”

McMaster expert and lead author of this study Matt Miller and graduate student Hannah Stacey.

Credit: McMaster University

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Reducing hospitalisations for older Australians

One in five South Australians will experience an unplanned hospitalisation or emergency department presentation within 90 days of undertaking an aged-care assessment, according to new research by the University of South Australia and the South Australian Health and Medical Research Institute.

The large-scale study, which analysed the outcomes of 22,130 people who had an aged-care eligibility assessment (ACAT), also found 25 predictors that identify older people most at risk of being hospitalised. Risk factors include level of frailty, types of medications taken and frequency of after-hours services use.

The findings suggest that ACAT, which 186,000 Australians undertake every year, is a promising period to implement programs targeted at reducing hospitalisation for older Australians, said lead researcher Professor Maria Inacio.

“We can identify moderately well those most at risk of being hospitalised, meaning we can determine the older people who need the most follow-up after their assessment,” Professor Inacio said.

“If we provide targeted treatment or therapies during this time, we can not only provide better support to older people transitioning to care, but we could reduce overcrowding and ramping in our hospitals as well.

In 2018 in Australia, older people accounted for 16% of the population, 42% of the hospitalisations and 49% of the days spent in hospital.

Prof Inacio, who oversees the national database Registry of Senior Australians, said reducing the amount of time older people spend in hospitals is better for everyone, and the study offers practical recommendations to help this happen.

“Older people are usually on a lot of medication, for example. We found that after a certain number of medications they are at a higher risk of unplanned hospitalisations.

“Optimised medication management is one potential area that could be implemented through existing programs such as home medicine reviews. This is a Medicare-subsidised program for older people living in the community, yet it is not used as often as it should be.

“Frailty is also a significant predictor of hospitalisations, and this is another factor we could address following an ACAT assessment.

“If we invest in services and care that can help reduce frailty — things like encouraging physical exercise if possible, or comprehensive management with geriatric specialists and appropriate allied health professionals — we could improve older people’s quality of life and reduce the impact on our hospitals at the same time.”

The study is part of the wider State Action on Avoidable Rehospitalisations and Unplanned Admissions in South Australia (STAAR-SA) project, which involves collaboration with SA Health, all state local health networks and several stakeholders from both the healthcare and aged-care sectors. The project is funded by the National Health and Medical Research Council accredited Health Translation SA, through the Medical Research Future Fund Rapid Applied Research Translation Program.

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Infection prevention and control in virtual healthcare settings

Amy Sarcevic

Shortly after welcoming the arrival of her second child Josh, Kelly Evans'* blissful 'post-birth bubble' burst, much earlier than she had imagined.

Less than 24 hours after returning home from hospital with her newborn, the Sydney-based mother noticed her two-year-old daughter, Milla, had white spots on her tongue.

With doctors suspecting hand foot and mouth disease — a condition that can be dangerous for neonates — her eldest was forced to quarantine at her grandmother's house for the 10 days that followed.

"It wasn't the homecoming experience we had been planning, but thankfully the kids had not been in physical contact and there were no signs of the disease having spread.

"Like any two year old, Milla can be quite boisterous and we were careful not to let her handle her little brother right away. Thank goodness we didn't as a more serious outcome could have occurred," she recalls.

While Ms Evans is generally happy with the post-hospital care she received, she believes more effort is needed to educate patients on infection prevention and control (IPC) — particularly when managing health care at home, without the watch of professionals.

"I received a lot of support upon my discharge from hospital, but I do feel tips around infection prevention were somewhat lacking. The facts I received also contradict things I've read online," she said.

Stopping the spread

While best practice for IPC does exist, the Australian Commission on Safety and Quality in Healthcare notes that there is often "a gap between what is known to be best practice, and the care that is delivered".

"Despite the fact that there are guidelines and strong evidence regarding best practice, hand hygiene compliance is not optimal, preventable infections occur, and antimicrobial resistance is an increasing issue," it notes in a recent report.[1]

Indeed, every year in Australia 180,000 patients suffer healthcare-associated infections (HAIs),[1] resulting in prolonged antibiotic usage, increased patient morbidity and reduced quality of life.

HAIs are also costly, with one state finding that excess costs linked to just 126 surgical-site infections totalled more than $5 million.[1]

Within virtual health care, the need for epidemiological rigour is heightened — as demonstrated by the COVID-19 pandemic, in which thousands of COVID-19 patients throughout NSW have been treated from their homes.

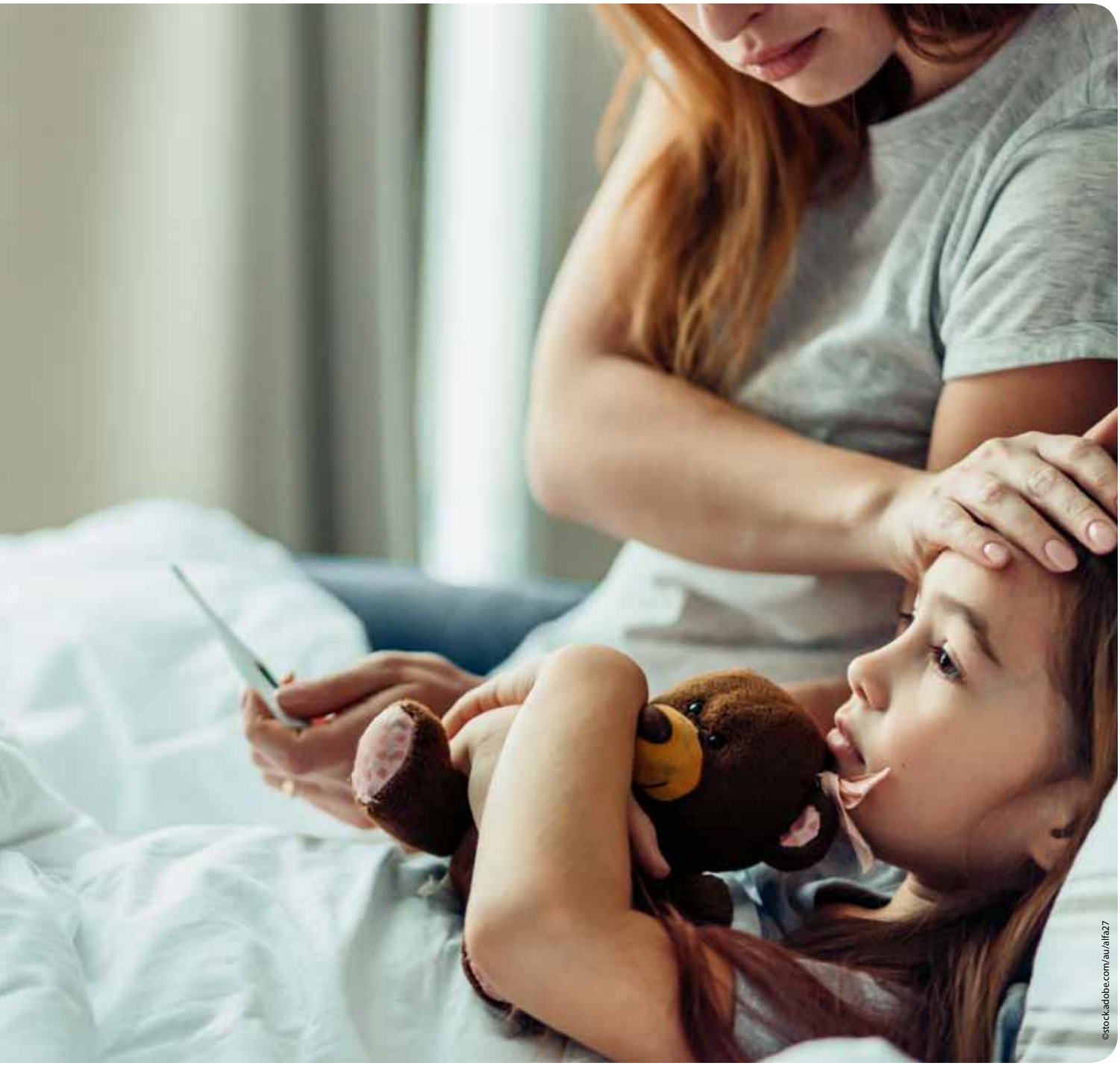
"Every year in Australia 180,000 patients suffer healthcare-associated infections."

Kathy Dempsey, NSW Chief Infection Prevention and Control & Healthcare Associated Infections Advisor at the Clinical Excellence Commission (CEC), believes that, while the rise of at-home care is generally a positive development for patients and IPC, there are always opportunities to improve patient safety across the virtual care ecosystem.

"Quite often in the home, infection risks are easier to mitigate against as you don't have other patients in close proximity — nor lots of physical interactions with workers. That said, we shouldn't get complacent," she said to *Hospital + Healthcare*.

"Homes can introduce new risks that aren't as prevalent in hospitals — pets, shared washing and eating facilities, and reduced medical surveillance, for example. While these risks are tightly managed by clinics, there is still potential for errors to occur."

Although a barrage of information is typically handed out when discharging patients from



hospital or treating them at home, care must be taken to ensure any facts provided are properly tailored.

"There is a lot of conflicting information online, which can be confusing to patients," Dempsey said. "A lot of infectious disease physicians, for example, will tell you that letting kids get dirty is part of building immunity. It most certainly is, but we need to be clear with people that a lack of sterilisation is not suitable in some situations. You certainly wouldn't want to expose a pre-vaccinated newborn to chicken pox, for example; nor a vulnerable adult to a zoonotic virus."

Indeed, Ms Evans says she was not aware that a different approach is needed when it comes to protecting against viral transmission. Like a large portion of Australian parents, she subscribes to the 'hygiene hypothesis' and avoids over-sterilising her home. This theory is based on a growing body of research showing that microbial exposure in early life can prevent conditions, including asthma and allergies.[2]

"Normally, I'm quite comfortable letting my kids eat stuff that they have just dropped onto the floor or put toys in their mouth that haven't been sterilised — within reason of course. I wasn't aware that I needed to stop doing this with a newborn in the house though," she said.

A multimodal approach

To achieve sustained behavioural change in relation to IPC interventions, the World Health Organization says multimodal strategies are the best way forward. Among the strategies it suggests are active surveillance and ongoing evidence-based education.[3]

Dempsey agrees that this approach is the best way to cover all bases.

"Knowledge and surveillance will be the sharpest tools in any virtual IPC program," she concluded.

*Name changed for privacy.

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The Australian-developed sensor set to scout out COVID in the workplace

Image credit: Soterius.

A biosensor that can rapidly and accurately detect SARS-CoV-2 is currently being developed in Australia thanks to a collaboration between RMIT University, Melbourne-based biomedical start-up Soterius, MIP Diagnostics, the Burnet Institute, D+I and Vestech.

The Soterius Scout can deliver results within a minute to provide the all clear for someone to enter their work environment or alert them if they need to undertake a COVID-19 test and self-isolate.

The sensor harnesses nanotechnology-enabled biosensors developed by RMIT researchers at its leading-edge Micro Nano Research Facility. The biosensor technology is covered in a patent application filed by RMIT, with the integrated system the subject of a patent application subsequently filed by Soterius.

Prototype tests conducted at RMIT, in partnership with Burnet Institute, reveal that the sensor detects SARS-CoV-2 spike protein fragments with impressive accuracy and no false positives. The technology can detect COVID-19 even if someone is asymptomatic.

Soterius is currently further developing the prototype, with commercial release anticipated in early 2022.

The technology will be manufactured in Australia and will initially be delivered to hospitals, with future applications in other essential worker and high-traffic settings including aged care, quarantine hotels, airports and schools. It is hoped that the sensor will help transform day-to-day management of the pandemic, protecting frontline workers and the wider community.

Soterius co-founder Dr Alasdair Wood said emerging environmental viral sensors were bulky, energy intensive and can detect only one type of virus.

"Our biosensor is so small it can fit on a personal fob card and it's easy to use — you just need to swipe your card over a reader at checkpoints," Dr Wood said.

"Importantly, one sensor can detect up to eight viral strains and our technology can be easily adapted to detect new variants or novel viruses as they emerge.

"We hope the Soterius Scout biosensor could be a vital tool for managing COVID-19, providing accurate early detection to prevent outbreaks and avoid the need for future lockdowns."

Trials show the sensor has potential to become a top-performing diagnostic tool for respiratory illnesses and it is now being scaled to detect other diseases such as influenza and MERS.

RMIT project leader Professor Sharath Sriram said the collaboration would accelerate the translation of RMIT research into vital new technologies.

"COVID-19 is not going away any time soon and we need smart solutions to help us detect the virus and contain outbreaks," Professor Sriram said.

"It is exciting to see our platform sensor technology at the core of this smart new solution for the management of COVID-19 and other respiratory viruses in workplaces, to help protect our frontline workers and the wider community."

How does it work?

The Soterius Scout biosensor can be worn as a fob or attached as a fixture within a workspace. The system detects virus particles that land on the sensor and, in less than one minute, can communicate the result to a smartphone or to a reader that users swipe as they enter or exit areas.

If SARS-CoV-2 is detected, Scout directs the user for testing and quarantine. Data can also be transmitted to the cloud to enable remote monitoring of hot spots and support the containment of local outbreaks.

The system uses flexible microelectronics and a synthetic nanotechnology that binds to targeted viruses, enabling specific detection and preventing false positives. Each device can be programmed to detect up to eight different viral strains using a sensor array, and can be easily adapted as part of the manufacturing process to detect new strains as they emerge.

Increasing patient hand hygiene by 45.7%

Kate Smith, Head of Clinical Solutions, Training and Support — GAMA Healthcare (RN/RM, CRNI, GCertNurs, Cert IV TAE)

Hand hygiene is well recognised as one of the most effective initiatives to protect patients from healthcare-associated infections (HAIs). Improving patient hand hygiene has been shown to reduce the transmission of harmful pathogens, but while much attention has focused on the role of hand hygiene for healthcare workers, this is not always the case for patients.

The Australian Guidelines for the Prevention and Control of Infection in Healthcare[1] make several recommendations and supportive statements towards the importance of patient hand hygiene to reduce HAIs and the implementation of a patient-centred approach to infection prevention and control.

The guidelines summary of recommendations include:

3.1.1 Hand hygiene - Practice Statement

"It is good practice for patients to perform hand hygiene and be educated about the benefits of hand hygiene for infection prevention and control.

Patients should be involved in hand hygiene and offered the opportunity to clean their hands when appropriate, including before meals and after using the toilet, commode, or bedpan/urinal. Patient preferences for hand hygiene products may differ, and they should be provided with the option of alcohol-based hand rubs, hand wipes or access to hand washbasins, based on any specific needs."

Antibacterial hand wipes are a safe, cost-effective and easy to establish method to support patient hand hygiene initiatives.

In 2018, Wilkinson et al.[2] concluded that an antimicrobial patient hand wipe (Clinell Antibacterial Hand wipes), when applied for 60 seconds, is at least as good as soap and water at removing transient microorganisms from the hands, representing an acceptable alternative to handwashing.

More recently, a study set within six acute elderly care/rehabilitation wards in a large UK hospital reports the impact of a bundled approach to improve patient hand hygiene. Using a multimodal strategy to improve patient hand hygiene - Heather P. Loveday et al.[3] aims to establish if providing patient hand wipes, along with a defined protocol for encouraging their use, is effective in improving the frequency of patient hand hygiene.

A baseline audit identified opportunities for patient hand hygiene. These were: before meals, before touching and after touching an invasive device, after using the toilet, after sneezing/coughing, after vomiting. Prior to the introduction of a patient hand hygiene bundle, compliance with these hand hygiene opportunities was measured at 13.2%.

A patient hand hygiene bundle was then introduced. This included:

- Individual patient hand wipe packs
- A patient hand hygiene protocol for staff
- An information card about patient hand hygiene for patients
- Monitoring and feedback of rates of compliance

The effect of the patient hand hygiene bundle was then monitored over a 12-week period.

The results were impressive. Following the implementation of this bundle, there was a significant improvement in compliance, with patient hand hygiene increasing by 45.7%. A key finding was that access to a method of hand hygiene simply by placement of a pack of wipes correlated with an increase in hand hygiene compliance.

Feedback from participating patients and staff showed the majority of patients found the wipes made their hands feel clean and were easy to remove from the pack. Ward managers highlighted that the patient experience was improved, and patient awareness of the need for hand hygiene increased. Overall, the wards wanted to continue to promote patient hand hygiene and felt that patient wipes was a more efficient and practical means of enabling patients to clean their hands with assistance or independently.

This study also affirms that healthcare staff have an essential role in encouraging patients to perform timely and appropriate hand hygiene. Providing patients with packs of hand wipes was found to be a simple, cost-effective approach to increasing patient hand hygiene and reducing the risk of healthcare-associated infections.

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What is UVC technology? And how is it superior to other common disinfection methods?

Ultraviolet (UV) is a form of light, invisible to the human eye, that exists on the electromagnetic spectrum between X-rays and visible light. We are exposed to low levels of UV light from the sun's rays every day, although much of the UV energy is absorbed by the ozone layer.

UVC wavelengths are between 200 and 300 nanometres, making them germicidal, meaning they are capable of inactivating microorganisms such as bacteria, viruses, and protozoa. This quality makes UVC energy an effective, environmentally friendly, and chemical-free way to eradicate dangerous microorganisms in any environment, but especially in hospitals.

UVC disinfection uses no chemicals, reaches floor to ceiling and is suitable for even the smallest of spaces. It is also extremely portable, meaning it can be used in areas such as treatment rooms, operating theatres, and patient rooms. The technology has proven to be a success, eliminating HCAI culprits including C. diff, MRSA, Ebola and Norovirus.

THOR UVC is the very latest high-powered disinfection robot, capable of destroying multi drug resistant HCAIs and persistent superbugs that linger in operating theatres, patient wards, and isolation rooms. It has patented protected shadow busting technology, which assists in delivering UVC light to darker, harder to reach areas. THOR UVC also has radar technology, multiple sensors which maps its surroundings and immediately generates a report when a room disinfection is complete. Testing and evaluation of the THOR UVC efficacy concluded that, irrespective of cleaning time and soiling levels, it killed more than 99.9999% of MSSA and 99.9999% (log 6) of a baumanii bacteria exposed to it.

THOR UVC generates more UVC power than older generation UV technologies; its high unrivalled output is critical in killing the new strains of superbugs. Its telescopic reach is significantly higher than its predecessors, obliterating pathogens from floor to ceiling. The robot disinfects a 360° area, irrespective of obstacles and senses clutter and reduces shadows, delivering a peak germicidal dose to all areas.

Utilising THOR UVC means that the entire process is automated. This ensures that the process is completely validated and failsafe. In addition, THOR UVC can be utilised anywhere a healthcare provider has deemed it necessary.

How can UVC disinfection aid in the fight against the spread of COVID-19?

The global pandemic has challenged almost every country across the world. Wherever there is any form of human interaction, the virus could still be present and therefore deep cleaning regimes need to be rigorous to prevent further spread of this deadly disease. Manual cleaning protocols have been refined and cleaning teams are working tirelessly, however, can only assist with surface cleaning. This is where UVC technology comes into its own. While it has been widely recognised for some time that Coronavirus can be efficiently and effectively eradicated utilising UVC, it would have been incorrect for companies to suggest that their devices were efficient in killing Covid-19, without further testing.

THOR UVC utilises 24 high output emitters, supplied to us by Signify, part of the Philips Group of Companies. Signify, in conjunction with Boston University, recently tested the current pathogen with their emitters and found SARS-CoV-2 was eradicated in minutes. Finsen Tech is now able to verify with confidence that THOR UVC can eradicate SARS-CoV-2, the virus that causes Covid-19, in minutes.

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Quarantining COVID

Purpose building quarantine facilities

With quarantine continuing to be a critical part of the Australian response to the COVID-19 pandemic, the Australian Government is working with the states and territories to purpose build quarantine accommodation hubs outside of major cities. A purpose-built facility will be located outside Melbourne's CBD, to combat and protect the community from COVID-19, with dedicated quarantine and emergency response facilities also planned for the Northern Territory, Queensland and Western Australia. The NSW Government has expressed interest in its own dedicated quarantine facility and is expected to put a proposal together to the federal government.[1]

Victoria's new facility — the Centre for National Resilience in Melbourne — will be constructed in Mickleham, at the site of the existing animal quarantine facility, owned by the Australian Department of Agriculture. Construction is anticipated to begin in September 2021, with the first stage of the hub anticipated to be operational in early 2022.[2]

Experts in public health and infection control have informed the design of the new hub, which is based on the existing standalone facility currently operating at Howard Springs in the Northern Territory. With its cabin-style, outdoor accommodation, Howard Springs has been widely acknowledged as the safest and most functional design for quarantine in Australia.

Images courtesy of the Victorian Government.

"With its cabin-style, outdoor accommodation, Howard Springs has been widely acknowledged as the safest and most functional design for quarantine in Australia."

The master plan for Victoria's hub includes dedicated onsite services, including catering that is tailored to be delivered alongside strong infection control and prevention measures. The first stage of the hub will provide 500 beds, with a second stage doubling capacity a short time later. The design will allow for an increase in capacity up to 3000 beds, as part of a scalable build if a larger facility is determined to be required at any point.

While being used for the purpose of COVID-19, COVID-19 Quarantine Victoria will run the facility. The hub's cabins will be relocatable so that they can be used for alternative and future needs, including ongoing quarantine arrangements, crisis accommodation and other emergencies.

The hub will have the following strict measures in place for safety, security and infection prevention and control:

- All staff will be vaccinated before they work at the quarantine facility.
- All staff will undertake daily health screening, COVID-19 tests and temperature checks. Staff will also be encouraged to get tested on their days off.
- Contact between staff and residents will be minimal. When required, all staff will follow strict procedures and be fitted and trained in full PPE, including N-95 masks.
- Staff will be solely deployed to the mandatory quarantine program — they will not work anywhere else.
- Staff will be provided with everything they need onsite, including all meals, and will not leave the facility during their shift.
- Access to the hub will be strictly controlled and enforced by Victoria Police and highly trained staff.

In addition to these measures, the hub's design will support infection prevention and control, including:

- Ventilation systems for accommodation facilities similar to healthcare settings to ensure that rooms are provided with a constant flow of filtered fresh air.
- Cabin-style accommodation with entry/exit points from dedicated decks, so the virus won't spread through shared internal corridors.
- Multiple separate self-contained blocks of approximately 60 cabins to accommodate up to 250 residents in each block, with dedicated entry and exit points.
- Staff will work on the same block each shift, limiting opportunities for transmission across multiple areas of the site.
- Onsite central services, including catering, laundry and administration, will support operations and limit the movement of goods and materials offsite.

In a June article published in The Conversation, infection control experts Associate Professor Philip Russo, Director of Cabrini Monash University Department of Nursing Research, Monash University and Professor of Nursing Brett Mitchell described the factors that should be considered when designing purpose-built quarantine facilities.[3]

Minimise interactions between staff and residents

According to Associate Professor Russo and Professor Mitchell, the design of quarantine facilities should be simple, reduce interactions between staff and residents, and allow for self-contained units that have their own ventilation systems.

"We need to support and meet the medical needs of residents. However, where these or any other support services can be done remotely or through technology, this should be encouraged. By doing this, we reduce the number of staff at the facility," they wrote.

"We also want to prevent residents from physically interacting with each other. These measures reduce the chance of being exposed to the virus, and spreading it. So in a dedicated new facility, we need to design to avoid these types of close contacts and to have clear separation of residents' living quarters."

Russo and Mitchell explained that a variety of living quarters, such as separate units or apartments, should be able to accommodate not just single people, but family groups as well, especially those with young children.

The authors stressed the importance of the units being easy to clean and wipe down, with hard surfaces like those seen in hospitals.

"We need a GP-type clinic on site. For example, there will be pregnant women who need antenatal check-ups and people with chronic diseases who need monitoring," they said. "Then there should be protocols for transferring people to hospital, if they need higher levels of care."

All staff working at the facility will need to be fully vaccinated, and healthcare workers — primarily nurses but also doctors — will need advanced skills in infection prevention and control. Security staff and cleaners will also need to be trained and tested in using PPE.

"Auditing and monitoring compliance with infection control measures, including cleaning, will be important," said the authors, who also highlighted the importance of clear and consistent policies about infection control, testing and transfers of residents.

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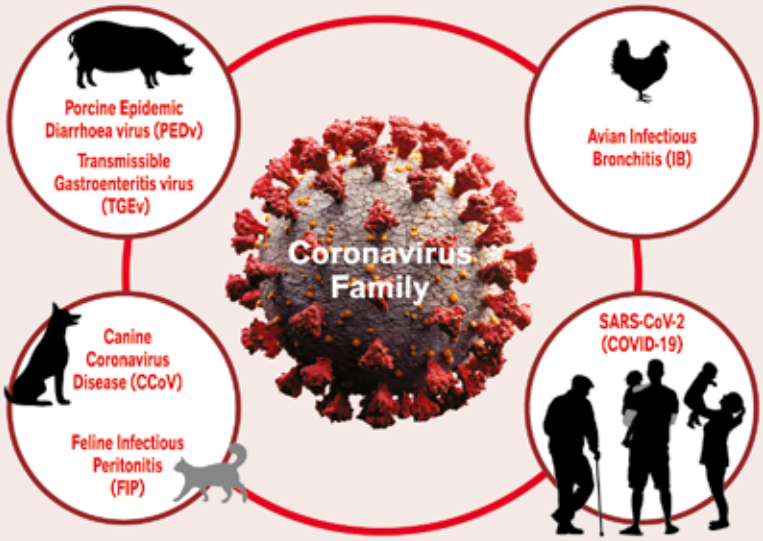
Coronavirus
Did you know?

The different types of coronavirus and their affects

There are many different varieties of coronavirus that affect animals, and up to six that can affect humans.

Each coronavirus strain causes very different diseases, and severity of symptoms. Some diseases caused by members of the coronavirus family may cause their hosts to have mild symptoms that make them feel unwell but given time make a full recovery, such as the coronavirus strain that causes the common cold in humans. Other strains of coronavirus will cause species specific disease, such as Porcine Epidemic Diarrhoea virus (PEDv) in pigs or Avian Infectious Bronchitis (IB) in chickens.

However, whilst all of these varieties belong to the same family only one of them causes the current global pandemic disease, COVID-19, affecting humans, and that is the SARS-CoV-2 strain of coronavirus.



Examples of different diseases caused by the coronavirus family

Just like antibiotics, antivirals and other medicines proven to treat specific diseases, disinfectants also have to be tested against each individual virus strain that cause disease, to ensure they can effectively and rapidly kill the pathogen of concern.

Disinfectants with similar chemistry can have widely different performance when it comes to efficacy and kill power against viral disease-causing pathogens.

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Use biocides safely. Always read the label and product information before use.

Coronavirus/26.08.21/AP/V1/G

Improving infection control with a reusable tourniquet

Tourniquets are classified as 'non-critical' medical devices and are one of the most widely used pieces of medical equipment across a number of settings. This includes spaces such as Emergency Departments (ED) and Intensive Care Units (ICU), theatres, vascular access clinics, pathology, cancer care services, and other routine and everyday areas such as wards.

However, the involvement of tourniquets in invasive procedures — such as blood collection, line insertion and other vascular access routines — as well as their ability to travel, means that a new or adequately cleaned/disinfected tourniquet is paramount for proper infection control procedures. Evidence — both anecdotal and published — suggests that this does not always occur.

Tourniquets are ordinarily mobile, multi-use and made from fabric. As a result, these are difficult and slow to disinfect due to the nature of their material and design, often resulting in inadequate disinfection. A recent review of existing studies found that the majority of published research showed >70% of tourniquets exhibited contamination[1]. The study also found that there are no standard practices, that tourniquets are shared and reused (sometimes for years) and patient safety may be jeopardised depending on material type and organisms found.

The introduction of disposable or single-use tourniquets can be more expensive and generate greater waste. Anecdotally, user satisfaction tends to be lower due to design and quality, as the item is manufactured for single use. Construction materials for both reusable and single-use tourniquets have been shown to both pick up and transfer microorganisms in a number of settings[2].

A third option of single patient tourniquets (where one tourniquet is assigned to a patient) reduces some of the risk, but is reliant on proper hand hygiene and handling, disinfection of surrounding surfaces, as well as disinfection or disposal of the device post-discharge, due to the risk of microbial dissemination. Crucially, a device could still be contaminated and used on a patient multiple times.

In a real-life example, a New Zealand study completed in a secondary-level hospital found various levels of contamination of tourniquets, with the highest levels found on the phlebotomy trolley post-ward round[3]. The facility disinfects all tourniquets overnight. They suggested a move to cost-comparable disposable tourniquets, but these were not preferred by staff and were found to be less comfortable for patients. Issuing patient specific reusables was cost-prohibitive. How could this example be generalised to larger facilities; to those with known MDRO issues; to those with greater frequency of use of tourniquets?

While there is ongoing research into the risk of bloodstream infections due to tourniquet contamination, the issue of tourniquet contamination itself is known and documented. Conventional tourniquets are routinely subjected to improper processing, if at all — a practice that does not occur with most other medical devices. So why should we settle for less? And what is the solution?

Enter daisygrip — a reusable tourniquet that can be completely disinfected by the user.

The daisygrip is manufactured from a smooth silicone band, which is comfortable for the patient, as well as being documented to pick up less contamination and being easier to disinfect than conventional fabrics[4]. With daisygrip, you can simply wipe, observe the required time, then use again. The band is coupled with an innovative and unique self-finding magnetic buckle, making closure faster, easier and able to be completed with one hand. Each unit can be reused thousands of times, saving on inventory and replacement. The daisygrip's patented, Red Dot Award-winning design has a focus on frequency and ease of use, as well as the ability to be completely disinfected in realistic times and places.

Improved infection control practices and hygienic vascular access, all via an easily disinfected, award-winning, reusable medical device. The daisygrip tourniquet — available exclusively through Tristel.

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the award winning reusable, hygienic tourniquet

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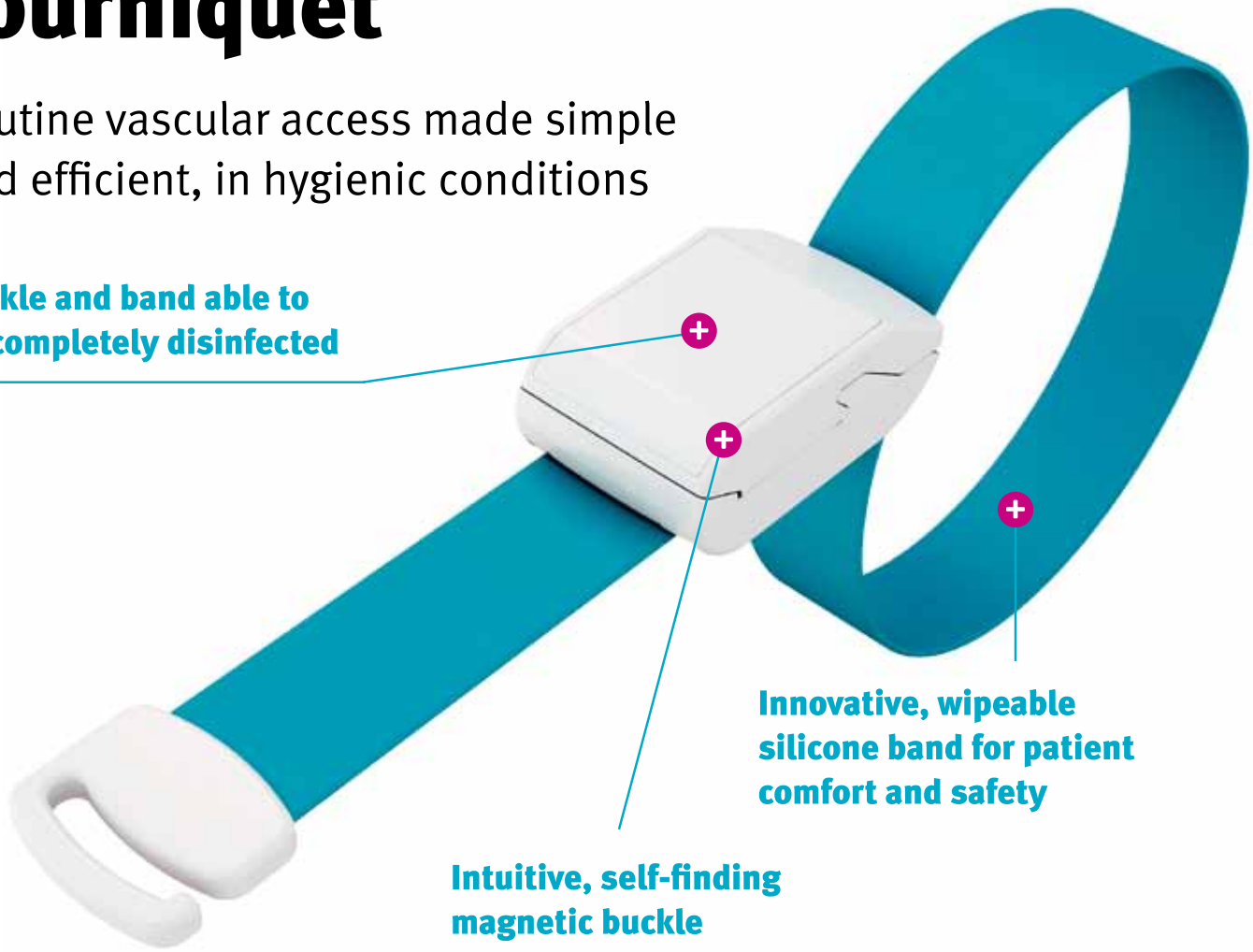
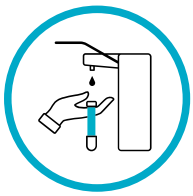
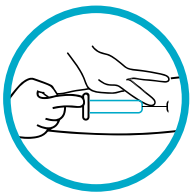


Intuitive, self-finding magnetic lock allowing for single-handed use.



Smooth and easy to wipe surfaces, greatly reducing the risk of hidden contaminants.

Ability to be disinfected quickly at the bedside, ensuring ease of integration into daily routines.



Easy alternative to conventional tourniquets, without disrupting familiar routines.

Improved infection control measures, resulting in reduced costs and better patient outcomes.

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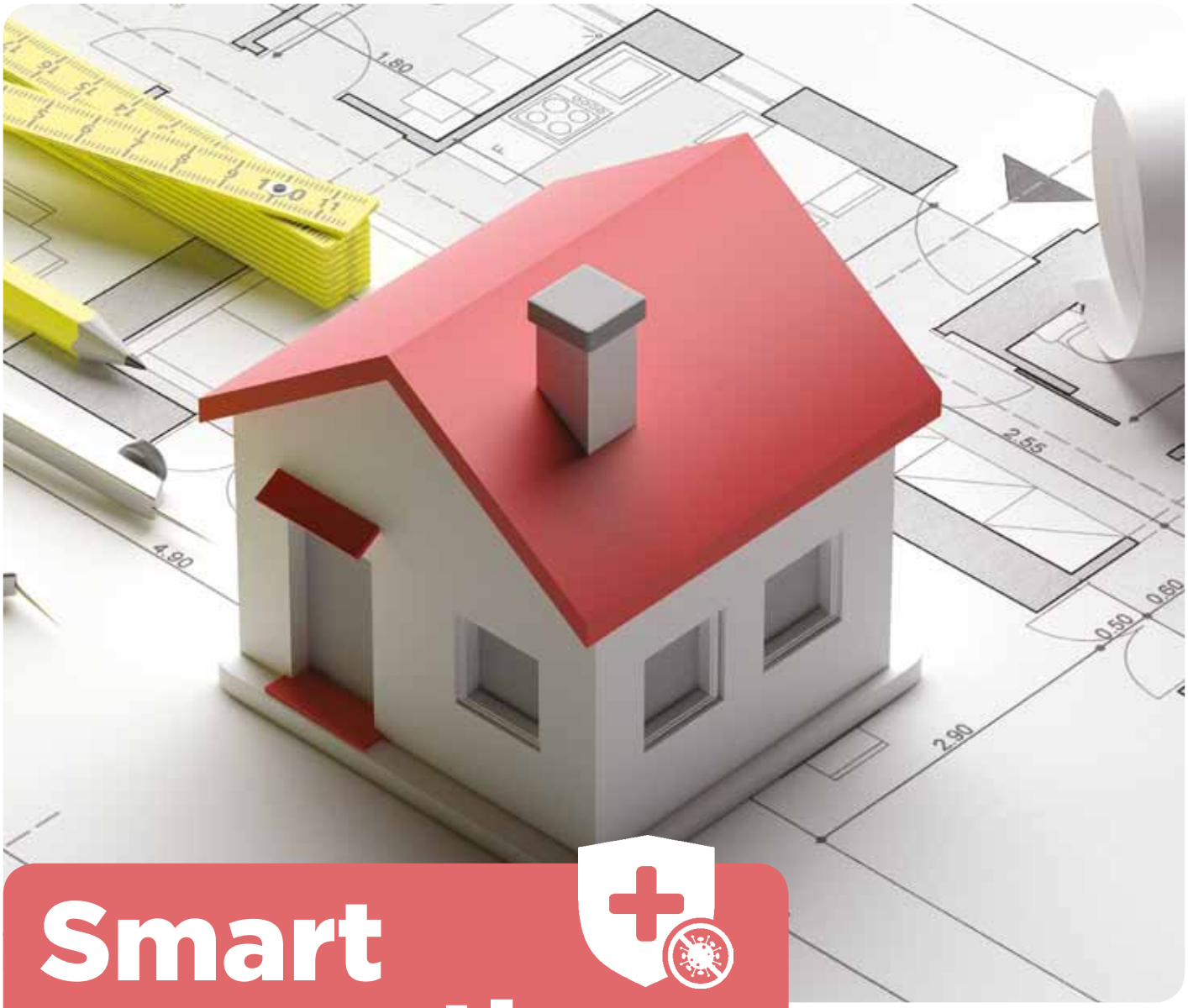

Smart quarantine: the next step for Australia

Jeff Connolly, Chairman and CEO of Siemens Australia & Pacific

Why intelligent and healthy quarantine infrastructure is now critical for Australia's future.

Australia is in an enviable position when it comes to COVID-19 (COVID) in terms of our global standing — both in terms of health and in terms of economy. However, it has come at a cost. Typically, community spread comes down to quarantine issues from returning citizens or travellers. Our ability to track and trace varies from state to state.

Methods to manage COVID outbreaks often include harsh measures such as lockdowns. Even a single case can generate restrictions such as a state-wide lockdown and interstate travel bans. Although effective from a COVID spread point of view, this isn't popular because we all value our freedom and mental health. And the economic impact is significant to say the least. Put simply, lockdowns can't be a long-term solution for Australia managing COVID.

AiGroup has calculated that a seven-day stoppage such as this [currently occurring in Melbourne] is likely to cost billions of dollars. Multiply this by all the lockdowns and it's just not a sensible long-term solution — especially when there are strong alternatives.

What's the long-term solution?

If the source of COVID is Australians returning from overseas — with the virus somehow escaping our quarantine system — then the answer is to make sure our quarantine system is airtight. Health procedures must be followed, but even more importantly, purpose-built hi-tech quarantine facilities must be established, which incorporate technologies that prevent or kill the spread of the virus and allow us to safely welcome returning Australians.

A broad range of digital services and technologies support healthy buildings and could be implemented in a purpose-built smart quarantine solution. Below are just some of the technologies available today.

Hotel quarantine and moving to a smarter long-term approach

To date we've taken standard hotel infrastructure and converted it into quarantine facilities. This approach worked as an interim measure and in fact was necessary, but it certainly isn't an airtight solution.

Some people have talked about mining huts in remote sites. This low-tech approach is not the solution either. We can do much better than this and we need a much smarter approach. An approach that employs intelligent infrastructure (which already exists) and an approach that not only protects us against the spread of the virus and against the multi-billion-dollar economic costs, but one that actually has the potential to form a new industry, skills, jobs and exports for Australia.

Comprehensive technology solutions are available now. Below is a snapshot of the Siemens 'Smart Air Quality Program'. There are many other existing technologies that would go into a smart-technology-driven quarantine solution.

Intelligent infrastructure technologies already exist to build a world-class quarantine solution. Examples include heating, ventilation and cooling, which has antibacterial and UV filtration capabilities; integrated IoT building management systems that can intelligently monitor and sensor almost anything in and outside of a building; hi-tech biosecurity access systems; apps and wearable devices that support effective tracking and tracing; and systems that can interact intelligently with healthcare providers by employing Industrial Internet of Things technologies.

The digital twin approach

A solution can be designed and built digitally before the first shovel hits the dirt so we can eliminate risk and maximise outcomes. Advanced industry and manufacturing already takes this approach. The vision would be to design and build a purpose-built world-class quarantine facility and system that not only allows Australia to properly manage COVID and bring people safely back into the country, but one which also has the potential to stimulate economic growth with new industries and skills that could be exported to the world.

Beyond the purpose-built quarantine solution, but not as critical as the current situation, we have a longer-term need to introduce healthy building technologies to our cities to improve city resilience, confidence and prosperity.

Building 4.0 CRC Q_Smart technology-led quarantine solution

Chaired by Dr Bronwyn Evans, Building 4.0 CRC is proposing a hi-tech quarantine solution called Q_Smart.

Q_Smart proposes a technology-enabled building and service delivery quarantine solution: a comprehensive, integrated system comprising a suite of processes, tools and products that are highly flexible and scalable for use in different locations, nationally and globally. The building solutions are factory made and can be assembled to suit a range of site conditions and requirements. The structures are easily dissembled and can be relocated and repurposed for other applications such as bushfire relief or affordable housing.

Do we have a business case?

COVID is not going away and undoubtedly the business case for Australia to invest in such a solution is as clear as daylight. Technology exists that can achieve this. There are people with skills in Australia to embark on this. There are suitable locations, and of all the world, Australia is in the best position to rapidly focus on and invest in this.

Jeff Connolly, Chairman and CEO of Siemens Australia & Pacific.

What has COVID-19 taught us about infection prevention and control?

Amy Sarcevic

There is nothing like a one-in-100-year pandemic to expose cracks in an infection prevention and control (IPC) strategy — and for parts of the world, the COVID-19 crisis has been no exception.

Although provisions like the two-week hotel quarantine program have been key to reducing community transmission, positive cases — including new overseas variants — have continued to break through.

In Australia, home to one of the most rigorous IPC systems, there were 16 hotel quarantine leaks in the five months between November 2020 and April 2021.[1]

Meanwhile, a review into Victoria's quarantine program found that 90% of the state's cases were genomically linked to a family that had completed their mandatory stay.[2]

Within aged care, too, efforts to contain outbreaks have fallen short, with more than three quarters of domestic COVID-19 deaths taking place in aged-care facilities.[3]

While the healthcare sector was not short of strong IPC guidelines pre-pandemic, what have we learned since about best practice?

Pre-empt the worst case scenario, as early as possible

One key observation about the IPC protocol surrounding COVID-19 globally was that it underplayed the possibility of airborne transmission. Instead, measures like hand hygiene, surgical mask wearing and social distancing were largely centred on the belief that droplets and fomites on surfaces were the main cause of spread.

More than one year since these measures were introduced, evidence for airborne transmission has evolved, with scientists calling for public health guidance — and indoor ventilation systems — to be overhauled. A COVID-19 outbreak in South Korea, for example, is believed to have occurred through faecal aerosols, caused by toilet flushing.[4]

However, the belated finding has cost us, with earlier IPC strategies not pre-empting this outcome — at least, not to the degree that they should. While global leaders, including Australia's Chief Medical Officer Professor Paul Kelly, have never denied the role of airborne transmission, many have maintained its role is minimal.

Appropriate PPE and training

Meanwhile, other experts have claimed that many pre-existing IPC plans — initially designed for healthcare-associated infections (HAI) like norovirus — were lacking the rigour needed for a respiratory pandemic.

For large parts of the world, early supply of personal protective equipment (PPE) was inadequate, with government-procured gear not fit for purpose, and again reflecting the understated role of airborne transmission.

Research shows that surgical masks and those made from cloth are not effective against aerosols.[5] Unlike respiratory particles, these droplets are less than five micrometres in diameter, can travel up to 10 metres, and stay in the air for hours. To combat aerosols, P2/N95 masks — respiratory PPE with a close facial fit — are more appropriate.[6]

Many early pandemic plans across the globe also failed to consider the importance of tailored training to ensure PPE was used properly. Within aged care, a sector in which IPC protocol and PPE usage does not feature as prominently as in acute healthcare settings, this approach proved costly.

Meanwhile, training on other aspects of IPC fell short within aged-care homes, with many unclear on their responsibilities.

Strict IPC compliance from the outset

While the broader healthcare sector is no stranger to strict IPC measures, there appeared to be a lag in shifting our collective state of complacency.

"People have been saying that you shouldn't come into work with a 'sniffle' for a while now, but it is only through COVID that we have started to take this advice seriously," said Kathy Dempsey of the Clinical Excellence Commission in NSW.

"Yes, staff are aware of their obligations surrounding IPC, but at the same time, there is a conflicting narrative that tells us we have to keep going when we feel a tiny bit unwell, otherwise, if we take time off, we'll make life harder for our colleagues. Thankfully COVID-19 has taught us this approach is not acceptable."

While COVID-19 did sharpen the focus on IPC measures, widespread behavioural compliance may have come later, with the lag creating leak holes in an otherwise watertight strategy.

At the extreme, non-compliance has also been an issue in some settings. In May 2021, a General Manager of a Victorian hotel quarantine facility was allegedly stood down for breaching IPC protocol and refusing to take a COVID-19 test, after visiting a facility.

Stamina is everything

While the virus may have exploited technical loopholes in IPC strategies around the world, one clear win has been Australia's sustained resilience — the glue holding it all together.

Behavioural compliance with IPC measures over time involves focus, sacrifice and stamina. For those clinicians tasked with enforcing IPC protocol — patient visitor restrictions, treatment delays, and reduced support — the journey has been equally fraught, with patients and families often directing their frustration at staff.

Despite this, Australia's approach has not waivered, with strong IPC, and a death toll far lower than that of other western nations.

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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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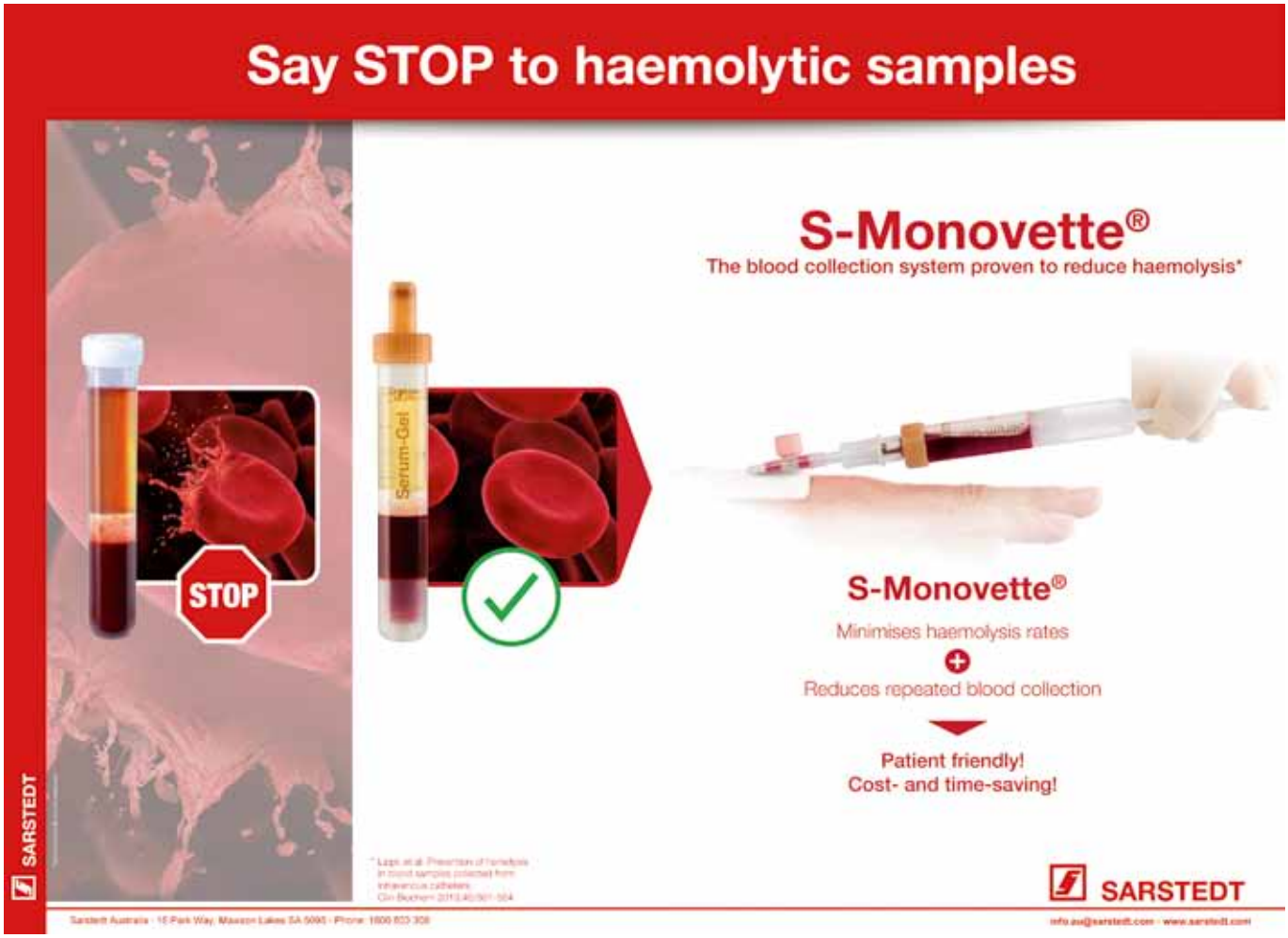

Sepsis in the spotlight

A national effort to support clinicians, consumers and health service organisations

Dr Carolyn Hullick*, Emergency Physician and Clinical Director, and Chris Boyd-Skinner*, Sepsis Program Manager, the Australian Commission on Safety and Quality in Health Care

Each year, sepsis — the life-threatening complication of infection which can lead to multiple organ failure — kills more Australians than breast or prostate cancer. National data indicate that sepsis cases are increasing in Australia, while a recent Global Burden of Disease report suggests that the international incidence of sepsis is vastly underestimated.

Yet recognising sepsis as a time-critical medical emergency can prevent the worst health complications. The Australian Commission on Safety and Quality in Health Care (the Commission), is joining the efforts of the states and territories to help improve outcomes for Australians with sepsis and raise awareness of this under-recognised condition.

Emergency physicians often find themselves in the unenviable position of witnessing how rapidly situations can escalate in patients with sepsis. Non-specific symptoms can make sepsis difficult to detect. In addition, when patients present to the emergency department, they may already be seriously unwell, leaving only a narrow window of opportunity to start life-saving treatment and to reduce ongoing morbidity.

The impact of sepsis on Australians is profound, affecting many age cohorts and high-risk populations. The recent 2020 Global Burden of Disease study reported an estimated 55,000 cases of sepsis in Australia annually, with approximately 8700 people succumbing to the condition.

Sepsis is also a major public health concern, placing substantial economic burden and strain on the Australian healthcare system. A new report commissioned by The George Institute for Global Health estimates the total annual cost of sepsis in Australia is $4.8 billion, with direct hospital costs accounting for $700m a year.

Sepsis is defined as a life-threatening condition that arises when the body's response to an infection damages its own tissues and organs. Patients who survive sepsis experience varying degrees of impairment following their hospital stay.

Ongoing health and cognitive issues may persist following the acute illness, and in more severe cases, significant physical disability may occur, including limb amputation. Post-sepsis syndrome is unfortunately not well understood or recognised by clinicians globally. However, the lingering health complications experienced by sepsis survivors are very real and well documented.

State and territory health departments and health service organisations alike have made commendable progress to facilitate improvements in detection, recognition and management of sepsis. Notably, New South Wales, Victoria and Queensland Health Departments have well-established and integrated programs of work in the context of sepsis. Trigger tools and sepsis pathways help support clinicians to identify the signs and symptoms of sepsis and manage care. However, to this point, there has been no national guidance for sepsis management.

A national effort against sepsis

The Commission, in partnership with the George Institute for Global Health, is leading the National Sepsis Program. The Program is being delivered on behalf of the Australian Government Department of Health following a funding announcement in 2019 by the Hon. Greg Hunt MP, Minister for Health and Aged Care.

The National Sepsis Program aims to improve sepsis outcomes for Australians by increasing awareness and recognition of sepsis, developing national guidance on best-practice sepsis management and driving improvements to comprehensive care of sepsis patients.

The National Sepsis Program consists of the following eight projects:

- An epidemiological report on sepsis in Australian Public Hospitals.
- Revision of the Antimicrobial Stewardship Clinical Care Standard.
- Resources to support health service organisations implement the National Safety and Quality Health Service (NSQHS) Standards relating to sepsis.
- A systematic review of trigger tools that support the identification of sepsis in healthcare settings.
- A scoping report on sepsis survivorship services.
- Development of a national Sepsis Clinical Care Standard.
- A national retrospective medical record review of sepsis patient documentation.

Expert consultation

As part of the National Sepsis Program, the Commission established the National Sepsis Clinical Reference Group (NSCRG). The NSCRG comprises 40 clinical and technical experts from a range of disciplines including: emergency medicine, intensive care, nursing, general practice, infectious diseases, pharmacy and antimicrobial stewardship, paediatrics, neonatology and Aboriginal and Torres Strait Islander health.

Survivors of sepsis and bereaved families are also represented in the group; ensuring that all work reflects the patient's perspective and experience of hospitalisation, recovery from sepsis and, where necessary, bereavement care. The NSCRG first convened in November 2020 to support delivery of key National Sepsis Program deliverables and continues to provide expert advice to the Commission on all aspects of the work to date.

Sepsis Clinical Care Standard

The hallmark project under the National Sepsis Program is development of a national Sepsis Clinical Care Standard. The Commission has a long history of developing clinical care standards on various topics. Each standard includes a number of quality statements describing the care patients should be offered by health professionals and health services for a specific clinical condition, in line with current best evidence.

Development of the Sepsis Clinical Care Standard stems from the Stopping Sepsis: National Action Plan developed by the Australian Sepsis Network in 2017, which called for a nationally recognised standard of care for sepsis detection and treatment.

The draft Sepsis Clinical Care Standard — which covers quality statements relating to time-critical treatment, antimicrobial therapy, patient and carer education and post-acute care — has recently undergone a public consultation process. The draft document received widespread support from consumers, healthcare professionals and state and territory health departments.

The new national standard is scheduled for publication in 2022.

National awareness campaign

The Australian Sepsis Network recently reported that only 23% of Australians were aware of the signs and symptoms of sepsis. To increase awareness of sepsis among both clinicians and the general public, the Commission is undertaking a National Sepsis Awareness Campaign. The campaign commenced on 13 September 2021 — World Sepsis Day — and continues to 26 November 2021.

The primary campaign message is "Just ask: could it be sepsis?" This statement is one of reflection and empowerment — encouraging clinicians to think "could it be sepsis?" and empowering patients and their families to speak up to hospital staff will help to bring sepsis into the spotlight.

To complement the campaign, the Commission has developed a resource toolkit including digital and print resources suitable for a range of target audiences and high-risk patient groups. This campaign will support the broader objectives of the National Sepsis Program.

There is now significant momentum across the healthcare sector — among clinicians, hospitals, health service organisations, policymakers, advocates and consumers — to collaborate in the national fight against sepsis. The National Sepsis Program is helping to raise awareness, ensure prompt recognition and treatment of sepsis, and educate and support healthcare professionals, to ultimately reduce the incidence and impact of this life-threatening condition.

*Dr Carolyn Hullick FACEM is Clinical Director at the Australian Commission on Safety and Quality in Health Care and is closely involved with comprehensive care and sepsis identification and management. At the Commission, she is also associated with projects focused on aged care, transitions of care and the appropriate use of anti-psychotics. In addition, Dr Hullick is an Emergency Physician in Newcastle, New South Wales, and has expertise in geriatric emergency medicine.

*Chris Boyd-Skinner is a registered nurse and Program Manager at the Australian Commission on Safety and Quality in Health Care. Chris manages all aspects of the National Sepsis Program, including consultation with the National Sepsis Clinical Reference Group, state and territory health departments and health consumer representatives. Chris practises clinically as an intensive care nurse and has experience in neuro/general intensive care and aeromedical retrieval.

A New Opportunity to Reduce Environmental Impacts From PPE Use

Personal protective equipment plays a vital role in keeping healthcare workers safe and healthy from the daily hazards they encounter.

This has become even more evident during the COVID-19 pandemic and seen the use of PPE increase substantially, with a recent study estimating 129 billion face masks and 65 billion examination gloves are used globally on a monthly basis. With this increased use comes the increased prospect of PPE polluting our environment which can take decades, even centuries, to degrade.

The latest data from 2018–19 collated by the Federal Department of Agriculture, Water and Environment showed 48,652 tonnes of clinical waste was generated, with 4,046 tonnes going directly to landfill. If not disposed and managed properly, this waste poses a serious threat to wildlife and the health of local communities over decades if released into terrestrial and marine environments. This danger comes from the accumulation and persistence of plastic waste in the environment over long periods, which allows it to enter the food chain. It is clear that new solutions are needed to reduce the impacts of plastic clinical waste.

The switch to biodegradable plastics represents a real opportunity for the healthcare sector to address this problem.

Biodegradable plastics are plastics that degrade through interactions with microorganisms such as bacteria, fungi and algae, and are converted back into carbon dioxide and water over a period of months or years as opposed to decades or centuries. Confusingly, biodegradable plastics can sometimes be referred to as bioplastics, which is an umbrella term for plastics that are either biodegradable, made from biobased materials, or both. It is important to note that not all bio-based plastics are biodegradable, while some conventional plastics are capable of this.

There are several key factors for biodegradation to occur. Firstly a material's molecular structure (also known as a polymer), rather than the material itself, must be able to be progressively broken down into its basic components by a microorganism community. Secondly, for biodegradation to occur the location where the material is placed must have the right conditions. Temperature, moisture, pH levels and oxygen content are all important environmental factors for the biodegradation of plastics. When put into the right combination of conditions that are friendly to specific microbes, plastics can be consumed and used as food for growth and reproduction by these microbes. Lastly, the microbes need to be able to identify the plastic waste as a food source to be able to start the biodegradation process.

New technology allows organic additives, that attract specific microbes in landfill environments, to be impregnated into the formulation of examination gloves to start biodegradation through a process called mineralisation. Mineralisation describes the degradation of a compound into its mineral components (i.e. carbon dioxide and water) as well as some biomass (i.e. inert soil). Examination gloves in an anaerobic landfill environment will undergo four biological and chemical stages as part of the mineralisation process: hydrolysis, acidogenesis, acetogenesis and methanogenesis. Each stage helps to break down the compounds in the glove into simpler forms until it is fully consumed. As these gloves can only biodegrade in these landfill conditions, the quality and safety they provide is unaffected and matches those of conventional examination gloves.

PPE will undoubtedly remain an essential way to protect healthcare workers from the hazards they face in the workplace. While in the past, the clinical waste generated from the disposal of PPE has represented a risk to the environment new innovations, especially for exam gloves, are able to provide viable options that help reduce this risk.

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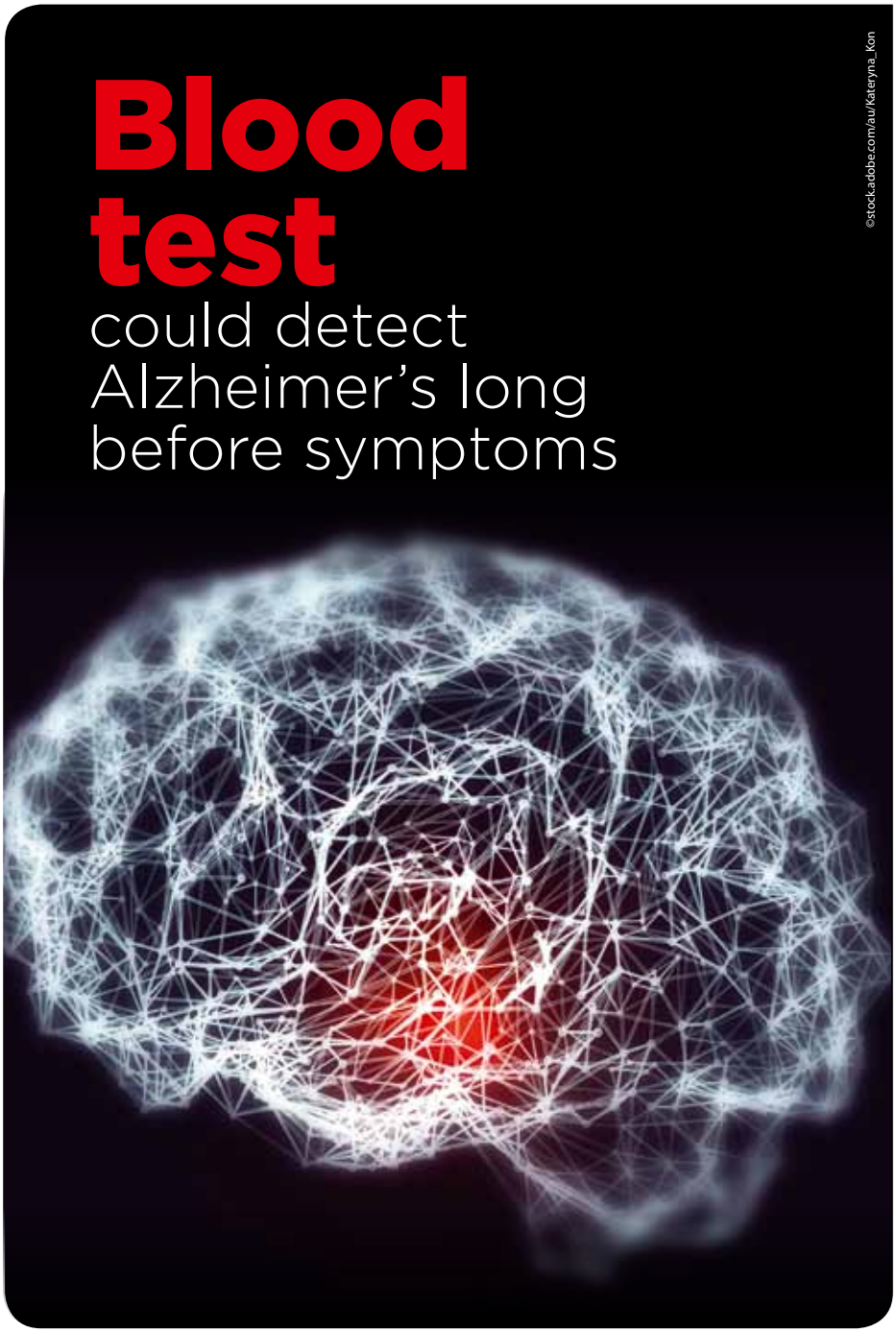
Blood test could detect Alzheimer's long before symptoms



A low-cost blood test could diagnose Alzheimer's disease up to 20 years before the onset of symptoms, according to new research by Macquarie University.

The research claims to be the first to show higher blood levels of Alzheimer's-related proteins in cognitively normal older adults whose brain scans showed pre-clinical Alzheimer's, than in otherwise similar adults with normal brain tissue.

More than 300,000 Australians suffer from this degenerative brain disease. The current diagnosis of the disease relies on cognitive tests which are not sensitive enough to detect changes in the brain before a person already shows symptoms.

The brain changes from Alzheimer's disease include abnormal protein build-up, which damages connections between brain cells and causes eventual cell death, shrinking brain volume. While the changes occur gradually, it can be more than 15 years before the accumulated damage is noticeable through behavioural change.

Scientists currently use specialised tests to identify these abnormal brain tissue changes in living patients, however these tests are expensive and/or invasive, making them unsuitable for widespread screening.

The research, headed by neurobiologist Professor Ralph Martins from Macquarie University's Department of Biomedical Sciences, who is also Foundation Chair of Ageing and Alzheimer's Disease at Edith Cowan University in Western Australia, involved an international, multi-disciplinary team from around Australia, the UK, the USA, Sweden and Belgium.

The Macquarie University-led study included 100 volunteers aged from 65 to 90 from the Kerr Anglican Retirement Village (co-established and coordinated by study co-author Associate Professor Kathryn Goozee), who were screened to exclude those with signs of cognitive impairment or other significant health factors.

All of the volunteers also had their brains scanned using a PET amyloid analysis, and researchers identified those with pre-clinical Alzheimer's based on the presence of abnormal protein deposits, or brain amyloidosis.

The blood proteins of all the volunteers were compared, and the results showed that people with pre-clinical Alzheimer's also showed higher blood levels of three proteins: GFAP, p-tau181 and p-tau231.

Other risk factors for Alzheimer's disease, including age, sex and a higher genetic predisposition were assessed through the presence of the Apolipoprotein E allele.

Researchers found that using GFAP in a statistical model with these risk factors gave a high accuracy of 86%, in distinguishing between people with pre-clinical Alzheimer's disease and cognitively normal older people without Alzheimer's-specific abnormal brain tissue changes.

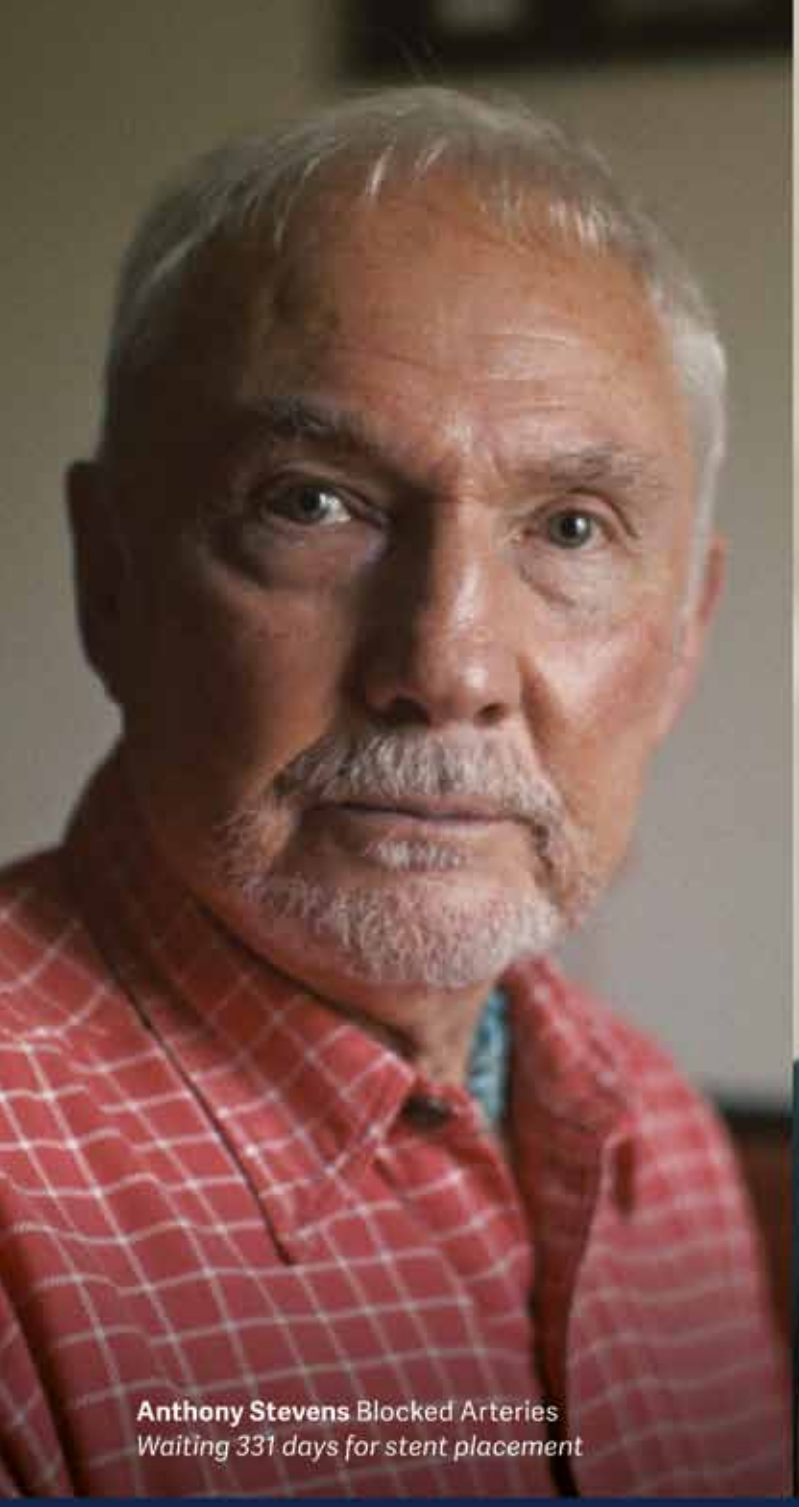
"We also found for the first time, that levels of GFAP and p-tau181 levels increased in pre-clinical Alzheimer's patients over 12 months, but these didn't increase in cognitively normal older people without Alzheimer's-specific abnormal brain tissue changes," Professor Ralph Martins said.

"Our findings highlight promising biomarkers for use in early diagnostic and prognostic blood tests for Alzheimer's disease, prior to symptoms," said Macquarie University's Department of Biomedical Sciences Research Fellow and lead author, Dr Pratishtha Chatterjee. The study was published in the journal *Alzheimer's & Dementia*.

These findings will allow more cost-effective screening and prognosis in clinical trials, Chatterjee said.

A PET brain amyloid scan can cost upwards of $2000 in Australia, and up to five times more in the US, so running clinical trials with hundreds or thousands of people would be prohibitively expensive — whereas blood tests would likely be under $50 each, at scale, Martins said.

"Being able to more easily identify people with very early signs of Alzheimer's disease is a real game-changer, it will allow clinical trials that are much more robust and potentially identify earlier interventions," Martins said.



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SENSITIVE CHOICE

Wollongong Hospital engages InovaAir for a clean air solution

Air filtration in hospital and healthcare environments has always been of critical importance in preventing the spread of airborne infection.

With the rapid spread of COVID-19 earlier this year, Dr. Trevor Gardner and the Wollongong Hospital COVID-19 task group were proactively looking for a solution to create negative pressure environments to reduce the potential spread of transmission contaminated air, to staff and patients for two of the hospital's COVID wards as well as their ICU. With the pandemic being a high priority, Wollongong ordered and fitted ~40 InovaAir commercial grade air filtration systems in order to comply with air movement regulations.

These systems were able to be quickly installed by the hospital's own contractors with minimal building modifications and were operational within days.

InovaAir is an Australian manufacturer of innovative, tailored medical-grade HEPA filtration systems. They manufacture and distribute air purification solutions for both domestic and commercial applications. Their air purifiers are designed to filter out everything from aerosols, bushfire smoke, mould spores, VOCs and ultra-fine particles at 99.95% efficiency down to 0.3 microns. Systems utilise a high efficiency pre-filter, HEPA filtration and final stage carbon filters. Unlike some of the cheaper plastic alternatives, InovaAir uses powder coated aluminium construction.

InovaAir systems are utilised in commercial applications such as hospitals, medical centres, schools, nursing homes, gyms and office spaces.

InovaAir's founder and owner Nicholas Kraus says, "Indoor air quality has always been important, however with the current situation with the pandemic as well as the rampant bushfire season of 2019/2020, we have found people are not just considering their air quality, they are now taking action for the safety of their staff and clients as well as themselves."

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From medical device ideas to clinical solutions

Wooden wave panelling.

Neo-Bionica, a joint venture between the Bionics Institute and The University of Melbourne, is an end-to-end medical device prototype development facility, recently launched in Melbourne.

With the bioengineering expertise and technology required to create first-in-human prototypes for clinical trials, the new facility and its processes have been designed to fast-track new treatments for people with conditions such as epilepsy, Parkinson's disease, arthritis, stroke and diabetes.

Bionics Institute CEO Robert Klupacs said the facility will enable homegrown inventions to be manufactured rapidly in Australia for the benefit of patients throughout the world.

"Australia has incredible engineering and clinical capability, and we wanted to create an environment where Bionics Institute and other Australian-made concepts can be manufactured locally and ultimately exported to the world," Klupacs said.

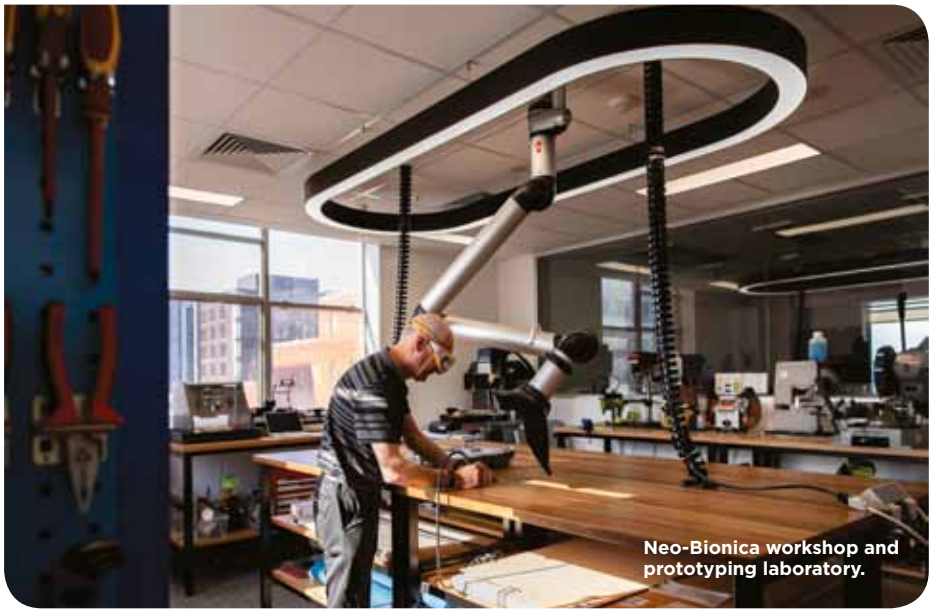
Located on the campus of St Vincent's hospital in Melbourne, Neo-Bionica enables clinicians, scientists, engineers and industry partners to collaborate in the quest to find solutions for people with hard-to-treat diseases like epilepsy.

Professor Mark Cook, epilepsy expert and Director of Neurology at St Vincent's Hospital, said, "The ability to walk from my consulting rooms to the Neo-Bionica facility and talk to the engineers developing prototypes for my patients to test will have a huge impact on the speed of developing new treatments, and the future of medicine in Australia."

Neo-Bionica designers Merat Architects and builders Alchemy Construct worked in close collaboration with the institute's engineers and laboratory team to not only capture the specialised functionality required but also incorporate the creative character of the teams and their work. This resulted in a rapid prototyping and development laboratory, two independent cleanrooms (ISO7: electrode and medical device fabrication and ISO8: electronics assembly), and a mechanical workshop with all areas fitted with specialty equipment.

Alchemy Construct Project Engineer Shabab Salahuddin said, "The new space provides an open plan workflow which is critical for the work being performed in the laboratory. The emphasis was on building a space which provided high-quality, clean zones."

Merat Architects Principal Barry Merat said their aim was to create a shared space with design and engineering teams co-located



Neo-Bionica workshop and prototyping laboratory.

of medical-grade components, alongside lighting to enable intricate work.

Glass has been used prominently throughout to create visual displays, link working spaces together and maximise use of the natural light. It also affords views over the Melbourne CBD and Carlton Gardens from the office space and meeting room. Use of wood throughout gives a calm and serene feel to the facility.

University of Melbourne Executive Director of Research, Innovation and Commercialisation Ken Jefferd said Neo-Bionica will grow Melbourne's reputation as a global biomedical powerhouse and boost the Australian economy.

"Not only will patients reap the benefits of groundbreaking medical devices more quickly, Neo-Bionica will attract international collaborators, generate employment, strengthen Australia's export capability and boost the economy," Jefferd said.

to ease the transition from design to fast prototyping and manufacturing. Merat hopes the design helps create inspiration for pioneering medical research.

A particularly striking design feature is the wooden panelling along the entryway of the facility, which takes the form of a wave, emulating an EEG recording of brain activity. This reflects research undertaken by engineers in Neo-Bionica, who develop medical devices for a range of conditions. One of these devices, developed in collaboration with Professor Cook, records brain activity in people with epilepsy, with the aim of predicting seizures in the future.

Each aspect of the facility has been carefully considered. Custom workstations have been designed and fitted to house medical device microfabrication equipment, 3D printers and high-speed machining tools. Specialised exhaust systems were fitted to maintain the air quality required for development

View over Melbourne's CBD and Carlton Gardens

View from the Neo-Bionica entrance showing display cases and cleanroom.

All images courtesy of Alchemy Construction.

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Below: The emergency and paediatric waiting areas have clear zones for waiting and circulation.

Treatment bays can be seen from the staff station, providing a visual connection to patients, but sound separation allows patient and staff comfort.

All images courtesy of Devlyn Construction and Johnathan Trusk.

The patient triage reception uses colour for clear wayfinding.

New appeal for WA's **Peel Health Campus**

Peel Health Campus in Mandurah, Western Australia, is a general hospital located one hour south of Perth. It is the major healthcare provider for the Peel region — one of the fastest-growing areas in Australia.

Peel Health Campus provides a wide range of healthcare services, with a 24-hour emergency care centre and comprehensive medical, surgical, maternity and rehabilitation services. The hospital accommodates a specialist medical centre as well as pharmacy and diagnostic services.

With health care becoming even more crucial in this challenging and rapidly evolving era, Hames Sharley was commissioned as the architect for a major refurbishment at the campus.

Devlyn Construction was selected to conduct the building works on the basis of its extensive experience in medical construction and reputation for delivering a high level of quality and meticulous attention to detail.

Paediatric waiting room playroom with integrated artwork.

The project involved staged redevelopment works to the emergency department and short-stay admission ward, as well as the server room. These works were carried out while both areas were kept operational. As access was limited, a scaffold was set up over the top of the building, with a hoist for material to minimise disruption to the hospital's operations.

Each area was sectioned off to create a construction zone, and the relevant areas were fully demolished internally and rebuilt to current healthcare design standards. Specifically, the work comprised a full upgrade of the mechanical, electrical, comms and nurse call, and a new consultation room, waiting room and reception area.

The emergency department was altered and extended to increase the size of the ambulance patient waiting, triage and fast-track treatment areas. Alterations were also made to the Rivers Suite to increase the number of short-stay beds.

In addition to erecting a hoist and scaffold to gain access over the top of the building, another main challenge faced by the Devlyn team was, understandably, the impact of COVID-19 — not only on the site but also transporting and moving material. There were also the customary challenges of working in a 'live' hospital: keeping noise to a minimum and incorporating effective dust-control measures.

Devlyn's main site compound and materials lay-down area were at the rear of the campus, 80 metres from the actual work zone, which meant that even the most mundane task involved careful planning to ensure the campus suffered no delays or negative impact.

The short-stay area has clear demarcation between circulation areas and patient zones.

Bearing in mind the limited access to building areas, all materials including cumbersome items such as concrete and bricks had to be delivered in small quantities and moved throughout the facility by hand, with no mess or impact to staff or patient movements. To achieve this, Devlyn engaged more labourers than usual to guarantee that materials were delivered without delay and areas were cleaned regularly.

In the end, even though all the work was subject to a tight schedule, each separable portion was handed over on time, with a satisfactory result for all those involved and no major accidents or incidents.

Devlyn worked closely with Ramsay Health staff to ensure the impact of construction work on a day-to-day basis was kept to an absolute minimum, with all access and egress areas kept clean at all times, construction noise carefully monitored and kept to a minimum, and stakeholders fully informed of progress and works to avoid any unforeseen impact.

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This is particularly relevant with the release of AS 1428.1:2021 Design for Access and Mobility which now requires backrests in Accessible Sole Occupancy Units be capable of being removed and refitted in accordance with clause 12.2.4 Backrest appendix (g).

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"The backrest shall — in an accessible sole-occupancy unit, be capable of being removed and refitted."

Ref: Australian Standards AS 1428.1:2021 Design for access and mobility.

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Have you seen the latest from Malmet's thermal disinfection range?

The front loading machine built for the dirty utility room

Renelle Harrison

Set to hit the market later this year, Malmet is giving *Hospital + Healthcare* readers a closer look at the latest addition to their range of thermal disinfection equipment.

After consultation across clinical and facility management contexts within the healthcare industry, the Malmet team is proud to present the front loading WDF. The WDF complements and extends Malmet's range of thermal disinfection options to offer a front loader, the first of its kind designed specifically for the Australian dirty utility room (DUR).

The newly minted WDF Utensil Washer Disinfector reflects Malmet's strong emphasis on people first and foremost. From functional design to quality Australian manufacturing, the robust research and development process has resulted in a machine that keeps the needs of users and care providers especially in mind.

"We know clinical care providers have infection prevention weighing on their minds," said Peter Kirkup, Malmet CEO.

"And we know that people really just want a solution for utensil processing that's reliable, functional, easy to use. The WDF is our answer to all of that — front loading functionality that fits with what care staff need in a productive DUR space. Healthcare staff are working on the frontline, and they deserve a range of products that makes the job easier and safer."

As infection prevention continues to remain paramount in our current clinical context, health and aged care facilities are looking towards results they can trust more than ever. At the same time, the DUR environment has evolved, and practical considerations of workspace and ease of use are also high on the agenda for care staff, supervisors and facility managers.

So how does the WDF measure up? We asked the DUR equipment experts, answering some common questions in the clinical context.

How does the WDF perform when it comes to Infection Prevention Standards?

Malmet has long been known for going above and beyond the standards for infection control and prevention. The WDF continues the same standard of excellence, providing high level thermal disinfection for utensils, with the ease and functionality of front loading access — so the Aussie manufacturer's long track record is in safe hands with the new addition.

"Our standards are high, because we know how important it is for managers and staff to have peace of mind when it comes to infection control and prevention," said Michael Larkin, Malmet Victorian Business Development Manager. "The WDF gives the same peace of mind that our clients know comes with every Malmet washer disinfector."

Like all Malmet washer disinfectors, the WDF has been tested to exceed compliance requirements for the highest relevant Australian and ISO Standards. This means that you can be sure your DUR environment is safe and effective when it comes to minimising the risks surrounding transmissible disease in the ward environment.

How easy is it to use?

With the WDF, there's no extra, unused programs, and no time-wasting trying to find the right cycle — just one single program

to give you the best results, time and time again.

Its streamlined functionality is designed especially for the reusables that you have in your DUR inventory — so you get all the bells and whistles, but only the ones you actually need. The WDF also solves the problem of inadvertent damage to reusable stock by eliminating the need for a decision tree when selecting the program. This means your inventory is well taken care of. It also means that facilities don't have to run the risk of forking out of the budget to replace stock that's been inadvertently damaged.

The WDF's simple, streamlined operation means facilities don't have the hassle of training staff to use special settings or complicated controls — just set once for the same reliable results right up until your next scheduled validation.

Will the WDF work in our facility?

A lot has changed over the years when it comes to functional design and use of the dirty utility workspace, with working and storage space at a premium. The front loading accessibility of the WDF means that bench space above the unit is freed up for waist-height work or storage. The large capacity machine fits all of its features under the bench, to help keep your care team on top of the tasks that need to be done to get reusables safely processed.

This underbench design also means there's extra room for other essential items or equipment such as storage or drying racks. The WDF allows your workflow to be adapted without loss of space above the bench.

There's also options for those facilities that require an increased working height. The WDF can be used in conjunction with a stand to manage work heights, room design requirements, or other equipment and storage. So you have maximum flexibility when it comes to the fit and layout of your facility's DUR space.

All in all, the WDF manages to achieve great versatility and adaptability — while still maintaining a sleek, streamlined operation. It's a win/win for healthcare providers who get to enjoy flexibility and functionality in one, high capacity machine.

What about Malmet's support and service schedule?

Many facilities have come to know and trust Malmet's team of highly skilled technicians. The team of Malmet-trained service personnel span nationwide, which means you won't be left high and dry in the case of border closures or lockdowns.

And with their dedicated team on hand, you can say goodbye to the headaches that come with lost productivity and down time due to difficulty getting parts. Instead, have the reassurance that service and validation will always be on schedule.

Who is the WDF for?

If your facility is looking to upgrade or install DUR equipment to ensure safety and compliance with the standards, then Malmet's newest washer disinfector could be the answer.

The WDF is perfect for:

- Facilities that require utensil processing and want it done with ease.
- Facilities wanting to maximise space in a capital works project or a dirty utility redesign and refurbishment.
- Facilities that require a dedicated DUR Utensil Washer Disinfector, but don't have the space for a top loading system.
- Any facility that wants the capacity that comes with a dedicated DUR Utensil Washer Disinfector, but doesn't want to trade off work space, can have the best of both worlds with the WDF.

Is the WDF really new?

For healthcare facilities that have experienced the reliability of Malmet's specialist DUR equipment and support provided over many years of service, then the WDF isn't really new at all. Malmet has adapted to the changing DUR environment — but when it comes down to it, there's some things that never really change.

If you've worked with Malmet in the past, then the WDF is simply getting what you've always had; Australian innovation, quality manufacturing and long term commitment to excellence — simply reimagined with functional and streamlined DUR design in mind. The same promise and real drive to serve and support the healthcare industry still remains at the heart of what we do.

Let's talk

Want to keep in the loop about the launch of the WDF? To get all the info or have your specific WDF questions answered, email info@malmet.com.au or call 02 6953 7677.

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Collaboration revolutionises healthcare delivery in aged care

Jane Allman

When it comes to healthcare delivery and patient outcomes, aged care is viewed as a tough nut to crack. The aged-care workforce is overworked, underpaid and overwhelmed, with a constant, and often shifting, mountain of procedures to perform. As identified by the Royal Commission into the Safety and Quality of Aged Care, the industry needs resources — people, funding and innovative technologies — to make the care of Australia's ageing population not only adequate, but something that could be described as world class.

Part of the solution, as identified by the Commission, is the adoption of technologies that will improve standards of care for residents and make life easier for aged-care staff. We have witnessed the increased uptake of telehealth alongside the continuation of the coronavirus pandemic as a critical infection control measure and as a more convenient way for aged-care residents to be assessed and treated for a range of conditions. Telehealth had been used to deliver health care to regional and remote communities for many years, but in more populous regions, it can sometimes be viewed as a back-up option when face-to-face care is unavailable or becomes more risky. But exciting developments in telehealth are set to turn this form of care delivery into a first-choice option for many Australians and their healthcare providers.

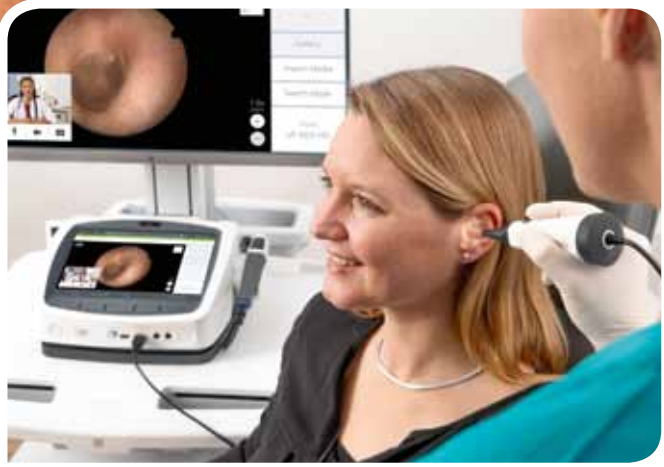
Innovation through collaboration

A collaboration between telehealth provider Coviu, medical device innovator VisionFlex and The University of Sydney is aiming to give aged-care providers the tools they need to optimise healthcare delivery and outcomes in aged care.

Recognised among the winners of the NSW Government's Innovation District Challenge, the collaboration integrates VisionFlex's digital examination toolkit into the Coviu platform, enabling health practitioners to carry out detailed, digitised medical examinations to provide enhanced care to one of our most vulnerable populations.

Visionflex's telehealth devices capture high-quality images, video and patient vitals data to improve diagnostic accuracy and enable earlier intervention, leading to better health outcomes. The examination toolkit includes devices such as a blood glucose reader, digital stethoscope, high-definition camera, otoscope, pulse oximeter, electrocardiogram and ultrasound devices, laryngoscope and thermometer. These devices connect to the ProEX Telehealth Hub via Bluetooth or USB connection, enabling health practitioners to carry out detailed medical examinations. Working from Coviu's telehealth platform, the tools allow a GP or specialist to see down a patient's throat or ear canal, examine a wound or determine blood oxygen levels; even perform an ultrasound scan.

"The highest risk to our vulnerable aged-care residents comes from the people entering the facility, so if we can mitigate this risk via telehealth, then we are working to prevent virus from spreading."
Dr Annie Banbury



Images courtesy of Visionflex.

"Telehealth has an important role to play in the aged-care sector because it can provide timely health care from a distance, removing the need for patients to travel to appointments," Coviu Clinical Research Lead Dr Annie Banbury explained.

"This collaboration of three unique organisations combines the Coviu telehealth platform, built specifically for the healthcare industry; Visionflex's cutting-edge peripheral devices; and the University of Sydney's research capabilities to analyse the data produced and assess the impact on patient outcomes."

With the telehealth solution currently in the engineering phase of development, Dr Banbury highlighted that the first step to bringing aged-care providers on board was to see uptake of telehealth in its simplest form.

"Aged-care facility managers are busy and often lack the time needed to plan and integrate new systems, but once implemented, systems such as ours will have enormous and beneficial impacts on aged-care staff, their patients, as well as healthcare professionals external to the aged-care facility, so it's worth the investment," Dr Banbury said.

Dr Banbury highlighted the importance of telehealth as a critical infection control tool, citing the ~700 deaths in aged care attributed to COVID-19.

"The highest risk to our vulnerable aged-care residents comes from the people entering the facility, so if we can mitigate this risk via telehealth, then we are working to prevent virus from spreading," she explained.

Cutting-edge technology supercharges consults

VisionFlex's Alex Hollings explained that the ProEX Telehealth Hub was originally designed for rural or remote health care in The Kimberley, providing a toolkit of examination devices to facilitate a clinical telehealth consultation.

"The integration of data — captured by the examination tools — with our patient management software allows system operators to create a digital patient file that maintains a comprehensive record of the care a patient receives. Images can be captured with the devices and stored in the patient's file; a Bluetooth thermometer takes a reading and is instantly logged; an ECG recording can be stored on file, too. The innovations are exciting and there's scope in the future to integrate capabilities such as AI and machine learning," Hollings said.

Aged-care residents benefit by receiving continued care from their regular GP; aged-care providers and staff are able to call for assistance, receive faster support and potentially reduce the need for patient transfer and hospital visits.

Contributing to the evidence base

Associate Professor Georgina Luscombe from The University of Sydney explained that the collaboration will contribute to the evidence base for clinical practice underpinned by real-world evaluation.

"As technology is deployed within aged care we need to evaluate its use. Robust evaluation will inform how technology can provide optimal care for one of our most vulnerable populations," she said.

"Winning this award [the Innovation District Challenge] has enabled the development of an innovation collaborative focused on improving the best quality care via telehealth for aged-care organisations. We would like to thank the support of the NSW Treasury for the grant."

UDI — Opportunities for health providers as a result of proposed regulatory changes

Australian healthcare is underpinned by a wide variety of standards. The many standards have been defined or chosen to improve how our health systems operate, ensure the highest quality and safety of care and enable a more digitised health system. These standards are often supported by regulations or similar frameworks.

Many of the global standards that have been chosen as part of the data foundations for an interoperable health system are known by simple acronyms. In the case of UDI — Unique Device Identification — the proposed regulation related to a UDI System provides the framework for the use of several global standards for the specific purpose of improving how Medical Devices are managed across our health system.

The initial concept of UDI was developed as a mechanism to support increased harmonisation of how medical devices are regulated globally. Most importantly, however, not only was the proposal for UDI systems a change for regulators, but it also focussed on greater consistency, availability and collection of data related to these products to support ongoing improvements to safety for patients and consumers. For more detail, you can refer to the International Medical Device Regulators Forum (IMDRF).

What is UDI exactly?

Each country that is implementing a UDI system is doing so whilst balancing local needs with a harmonised global approach. All UDI systems have an identification layer and a data capture layer that utilise global standards (such as GS1) and a database. The original IMDRF UDI guidance document from 2013, calls out that the purpose of a UDI system is to optimise patient care by improving five elements:
a. traceability of medical devices, especially for field safety corrective actions,
b. adequate identification of medical devices through distribution and use,
c. identification of medical devices in adverse events,
d. reduction of medical errors,
e. documenting and longitudinal capture of data on medical devices.
(Reference imdrf-tech-131209-udi-guidance-140901)

To find out more about the specific plans for Australia you are encouraged to visit their website https://www.tga.gov.au/unique-device-identification-system or attend the ongoing webinar series.

UDI is about the regulation of products, so how does this relate to a health provider?

Although the most impacted part of the sector with the introduction of UDI will be the manufacturer or product sponsors in each market, one of the areas with the greatest potential benefit is the health provider community and the patients that they serve. Whilst this is the case, even when reading the original intention of a UDI system, in many instances health providers have not investigated what their benefits could be.

Thankfully Australia is later to the implementation of these regulations so our health provider community can learn from their international peers. As a result of other countries already adopting UDI, we can already identify some of the benefits for health providers because of these regulations. Amongst the benefits found these include: unambiguous identification of medical devices; more efficient product recalls; improved ability to verify the legitimacy of medical devices; improved product data available for patient records; more accurate reports of adverse events; optimisation of supply chains; improved cost management; and improved reimbursement processes.

There are many case studies available to assist Australian Health Providers in understanding what their potential benefits may be. A few examples are:

St Joseph's Hospital, Chinese Taipei — Reported a 50% reduction in time to process an order, 96% scanning rate after only two months, increased patient safety with implementation of traceability and auto alert functionality, and significant improvements in inventory management.

Rigshospitalet Region Cardiac Catheterisation Laboratory, Denmark — Reported zero cancelled procedures, reduction in-stock items needed, freeing of the equivalent of 3 nurses (FTE) to focus on providing care to patients.

Franciscan Missionaries of Our Lady Health System (FMOLHS), United States — Reported improved inventory management, increased patient safety by implemented barcode scanning across care processes, improved cost of care/cost per case information available, better outcome bases information available for analysis of physicians, products and procedures that could be linked to more value-based approaches to care.

These and many similar stories can be found in the GS1 Global Reference Book 2020/21 https://www.gs1au.org/download/gs1-healthcare-reference-book-2020-2021.pdf/file.

What steps should health providers be undertaking to prepare for the benefits that UDI will bring for them?

There are probably four main steps that will ensure that Australian health providers can gain benefits from this regulatory change.

1. Assess your existing capability for capturing and using global standard identifiers, such as the Global Trade Item Number (GTIN) within the systems that are used to order products, manage inventory and track products used with/on patients. These standards are the identifiers used within UDI.
2. Assess your existing capability to scan standardised barcodes, including 2D Barcodes like the GS1 Datamatrix, as these are the barcodes and data formats that are used by suppliers when implementing UDI data capture.
3. Understand what processes could benefit from increased standardised identification, barcoding and data to start to create your plan for how your organisation can start increasing capability in normal BAU system upgrades.
4. Engage in the process of developing the UDI system for Australia by contacting the TGA UDI team udi@Health.gov.au.

For any additional information around GS1 standards, please do not hesitate to contact the GS1 Australia Healthcare team healthcareteam@gs1au.org.

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Cybersecurity: what are healthcare organisations missing?

John Yang, Vice President APJ, Progress

The Office of the Australian Information Commissioner (OAIC) has recently released its new Notifiable Data Breaches report for the January to June 2021 period. And once again, health care is the most affected industry when it comes to data breaches.

According to the report, the Australian healthcare sector alone represented 19% of all breaches reported to the OAIC. Actually, health service providers, followed by the finance industry have consistently reported the most data breaches compared to other industry sectors since the NDB scheme began.

Those new stats come a few months after cybersecurity experts pointed out Australian hospitals were amongst the organisations that are most vulnerable to a new wave of ransomware attacks.

The examples are not lacking, as with Victoria's second-largest public health service Eastern Health, which was targeted by a cyber attack forcing three major hospitals to postpone surgeries and shut down their IT systems.

Data protection regulations and cyber threats keep on growing, while the digitisation of healthcare services is at an all-time high as a result of the pandemic. Yet, cybersecurity, data protection and privacy as well as regulatory compliance seem to continue failing despite increased investments.

So, what are healthcare organisations missing?

It's not that cybersecurity isn't a priority for healthcare providers, it is that there is a gap between where the current investments are made and what needs to be prioritised.

External protections are useless if the data itself isn't secured

When you look at the most recent cyber attack trends, in particular the rise of ransomware, data is most of the time the asset targeted by hackers.

Investing in external protections without securing the data itself is a lost race against hackers.

Furthermore, focusing on the security of the end users, staff and infrastructure instead of the data itself at the point of capture means regulatory compliance will only become more challenging.

Healthcare leaders understand the importance of ramping up their cyber protection efforts surrounding data, but protecting data in any healthcare organisation is not an easy task.

It starts with identifying where data is at its most vulnerable, and then applying high levels of embedded security so even if the data ends up in bad actors' hands it cannot be used.

Data transfer: one of the most overlooked risks to data health

The risk that is often the most overlooked is the security and privacy of data and files as they transit within the organisation and with third parties.

This is a challenge because healthcare providers and their partners must balance protecting patient privacy with delivering effective patient care whilst simultaneously meeting strict regulatory requirements around data privacy.

Protected health information (PHI) is among an individual's most sensitive (and for criminals, valuable) private data. The guidelines for healthcare providers and organisations that handle, use or transmit patient information include strict data protection requirements, and those will keep on getting stricter.

From email attachments to automated machine-to-machine transfers at scale, healthcare providers face a unique set of risks that they are obliged to address with penalties for failure.

But, instead of taking proactive steps to secure data at the source — which would not only increase data security and privacy but also ease up regulatory compliance — most organisations are adding layer upon layer of security technologies.

This approach is simply ineffective if the data itself isn't secure.

Embedded security and file encryption a non-negotiable anymore

Healthcare providers need to prioritise strategies and solutions where cybersecurity is embedded at the core of the data and business processes, instead of relying on users and infrastructure-based security.

Data and file encryption is the only way to provide the level of security and privacy needed to achieve and futureproof security, privacy and compliance.

Encryption means that even if the data were to fall into bad actors' hands, it would be unusable, and thus worthless to the attacker.

A key component of creating a viable PHI security strategy is determining how data is moved, whether by individual users or as part of some automated process. Best practice dictates that healthcare organisations can ensure that technology is deployed to encrypt that data both at rest and in transit — regardless of how it is actually transferred.

It is important Australian health organisations look at file transfer and data collection methods that can secure data during all aspects of its journey, from creation to final deletion, and invest in platforms with a level of encryption automation. This approach means organisations won't even have to worry about changing regulations, and they can guarantee the level of security and privacy expected by patients today.

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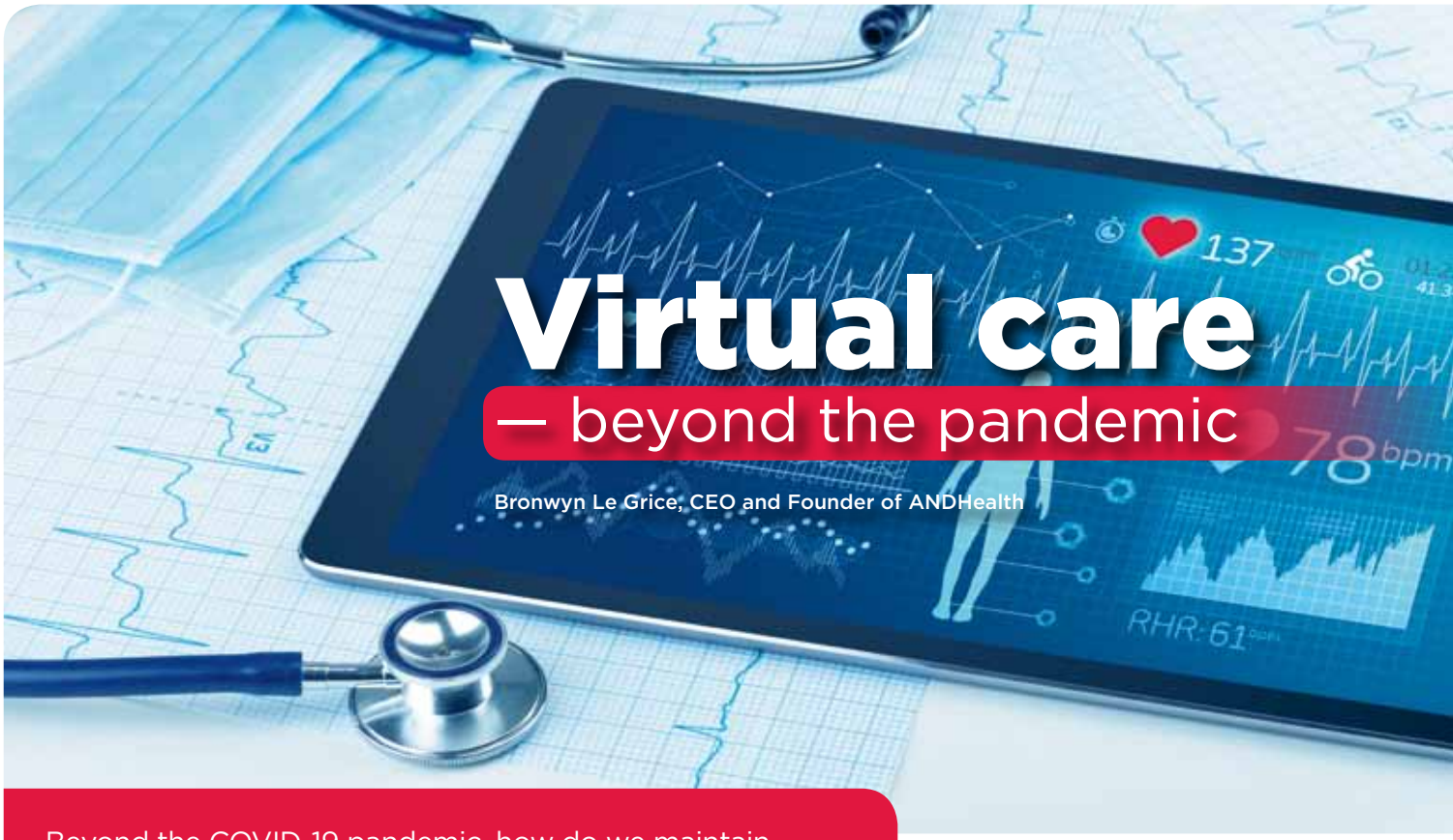

Virtual care — beyond the pandemic

Bronwyn Le Grice, CEO and Founder of ANDHealth

Beyond the COVID-19 pandemic, how do we maintain the momentum in virtual care that is transforming our health system?

After years of ongoing debate on the validity of telehealth and connected health care, Australia has made decades' worth of progress and investment in platforms to deliver virtual care as a means to protect from infection during COVID-19.

Between March 2020 and April 2021, more than 56 million telehealth services were delivered to 13.6 million patients, equating to almost $2.9 billion in Medicare benefits paid. The recent federal Budget continued the investment into telehealth by a further $204.6 million, bringing the total to date to $3.6 billion. However, the reimbursement piece is still, at this stage, temporary.

The tip of the iceberg

In a truly modern healthcare system, platforms and infrastructure for connectivity, such as telehealth, are only the tip of the iceberg. Core infrastructure such as telehealth and electronic health records are critical platforms for enabling more sophisticated remote patient management technologies, which support the prevention, diagnosis and treatment of health conditions.

Such digital medicine and digital therapeutics technologies go beyond electronic medical records, connectivity and infrastructure, to technologies that are proven in clinical trials to have a direct, measurable and safe impact on the welfare of patients and healthcare consumers. These technologies represent the cutting edge of medical product development and engagement with empowered consumers to deliver greater healthcare outcomes for all.

The challenge of system structures

At the recent ANDHealth digital health commercialisation masterclass, we brought together global experts in digital health innovation to share their experiences in tackling the challenge of building a truly modern healthcare system, providing care to those who need it, whenever they need it, wherever they are.

Keynote speaker Drew Schiller, CEO and co-founder of US company Validic, was clear that the technology and expertise needed to connect patient-generated data from home medical devices, apps and wearables into the health system already exist (at least in the US). The challenge is that these technologies cannot simply be overlaid onto our existing healthcare system.

"The biggest impediment to taking innovation and scaling it for widespread use, especially in large healthcare systems, is the inertia of 'digital health operations'," he said. There is no shortage of ideas for innovation but often those ideas lose momentum as clinicians and innovators push through operational hurdles, with an "endless cycle of pilots to get traction while nothing seems to grip".

For digital health to grow, systems and structures need to accommodate these new technologies. Implemented earlier this year, changes to regulations around Software as a Medical Device in Australia are an important step in this direction. However, more needs to be done for clinicians and patients to take up these technologies, including reimbursement for their time to review monitoring data, such as in the US, or reimbursement for prescription apps themselves, such as in Germany.

Evolution to point of patient care

As well as the adoption of remote consultation platforms, COVID-19 has highlighted broader changes in patient and clinician attitudes and behaviours.

In today's world, a person's healthcare data is not just a sum of a patient's medical interactions, scans, tests and clinician notes, but also the data generated and gathered by consumers using their own devices. This consumer-generated data offers an unprecedented glimpse into the lives of patients outside the clinical environment, often providing an objective snapshot of behaviours and symptoms, which may or may not be accurately conveyed in a patient-to-clinician conversation. Such data offers incredible insight for clinicians and can inform more effective diagnosis, prevention and treatment of chronic and acute conditions.

Digital interventions have already been proven, across many clinical areas, to be able to deliver substantial healthcare benefits, be it in the management of type 2 diabetes, improving adherence and reducing hospitalisations in chronic respiratory disease, or in providing support and treatment in mental health.

At-home connected diagnostics, including COVID tests, are enabling patients to stay home when they are unwell, protecting themselves and their communities. Increasing use of point-of-care diagnostics can reduce the time to receive results and make for faster and more accurate diagnoses, with connected healthcare platforms allowing this information to seamlessly reach a patient's regular physician or clinical care team.

All of these types of technologies can transform lives, and improve the affordability and effectiveness of our healthcare system, reducing emergency presentations and providing actionable insights in real time to both clinicians and consumers.

Why Australia?

Australia has long been recognised as a global centre of excellence for health and medical research. This, combined with our growing technology sector, puts us in a prime position to build a world-class digital health sector, delivering cutting-edge health interventions and growing scalable high-technology health businesses, headquartered in Australia and serving the global patient population.

ANDHealth has worked with more than 450 of these emerging digital health companies over the past four years, supporting them to address a diverse range of health system needs. Recent regulatory clarity from the Therapeutic Goods Administration with respect to Software as a Medical Device has paved the way for the extraordinary work of these innovators to be recognised as genuine medical-grade interventions, which is a step towards these technologies reaching the hands of patients.

"A post-pandemic future is one that shifts care from the clinic or hospital to the home."

Post-pandemic health care

A post-pandemic future is one that shifts care from the clinic or hospital to the home. In this human-centric healthcare system of the future, digital health solutions can deliver on disease prevention, diagnoses, management and treatment while at the same time improving the efficiency of our healthcare system, and the ability of all Australians to access it.

3 critical ways to keep your data healthy

Lucas Salter, General Manager, Data Protection Solutions, Asia Pacific & Japan, Dell Technologies

Working with large datasets, the health industry has embraced artificial intelligence and machine learning to solve challenges in everything from patient care, medical imaging, diagnosis to genetic analysis and drug research and development. This critical and valuable data needs to be handled with the utmost care and kept securely to comply with government regulations and to protect patient confidentiality.

The correct handling and storage of this data is a concern for many in the sector. According to a recent survey by Dell Technologies[1], 74% of health industry decision-makers say they struggle to find suitable data protection for their AI and machine learning solutions. These evolving technologies will contribute to already ever-growing datasets with Statista reporting that the total amount of data consumed globally will reach 180 zettabytes in 2025, up from 64.2 zettabytes this year[2].

Data faces a range of threats — from cyber attacks, to human error, to technical glitches. When a business is unable to access the data that's driving business services, it causes a ripple effect. Departments are unable to work, money is lost and the IT team has to down tools to get systems back online.

IT leaders are changing their mindset to act as if cyber attacks or downtime are an inevitable threat, with 62% of respondents in the Dell Technologies Global Data Protection Index[3] survey worried they will experience a disruptive event in the next 12 months and 65% lacking confidence that their business-critical data can be recovered.

However, the right data protection strategy and recovery solution can protect and keep this valuable data safe. To help IT leaders in the health industry know how to navigate the management of data, we have outlined the three steps for success.

1. Lay the right foundation

Managing data is a barrier all IT teams face. With legacy infrastructure systems under pressure, the health industry is looking to new as-a-service (aaS) cloud-based solutions that can be easily scaled up or down when required and can be managed externally. The Dell Technologies Data Paradox Research[4] discovered 59% of health leaders surveyed plan to move to a data aaS model and 48% believe that an aaS model would stop them from being held back by outdated infrastructure.

In an industry that manages highly sensitive data, for example electronic medical records, scheduling, payment and billing systems, IT managers, medical professionals and patients need to have peace of mind knowing that the data, essential for the day-to-day running of their business, is secure and can be easily recovered.

An as-a-service platform, such as Dell Technologies APEX[5], marries the flexibility of cloud with the security of the data centre, allowing IT teams to focus on innovation. The turnkey solution is managed remotely, freeing up valuable resources to focus on improving patient care or developing apps to help with essential research and development (R&D). This easily scalable model means you

only pay for what you use, providing cost-efficiency and transparency.

2. Focus on risk reduction and resilience

Six out of 10 health professionals plan to monetise their data in the next 1–3 years[6], so putting in place a solution that will protect this valuable commodity is vital to achieving business goals. Today, cyber resiliency needs to be centred around risk reduction and resiliency, and be an integral part of your overall business strategy, driven and sponsored at board level.

According to Cybersecurity Ventures[7], in 2021, a cyber or ransomware attack occurs every 11 seconds globally and, worryingly, the health industry is named as one of the sectors most heavily impacted. Looking at the threats closer to home, in Australia an average of 164 cybersecurity incidents are reported per day — or 1 every 10 minutes[8].

The key to a solid data protection strategy is to build it into your infrastructure and regularly review and amend to make sure it's suitable for the ever-evolving threat landscape. In fact, the Dell Technologies Global Data Protection Index[9] found 82% of respondents were worried their existing data protection solution won't be able to meet all future business challenges and 62% were concerned their existing data protection wouldn't cope with malware and ransomware threats, which shows that you just can't 'set and forget' with data protection.

3. Understand local and industry regulations

The health industry faces another unique challenge with managing data, as it's often highly sensitive and subject to industry data retention requirements, adding significant cost overhead to deliver health services. The Dell Technologies Global Data Protection Index revealed that 64% of health leaders aren't very confident their current data protection solutions are compliant with the government's data regulations.

When it comes to choosing whether to invest in a cloud solution or store your data on-premises, make sure you're aware of the regulations specific to your industry. Many Australian organisations, including the medical industry, should start familiarising themselves with the Critical Infrastructure Bill, which is currently passing through parliament. The new legislation will "protect the essential services all Australians rely on, uplifting the security and resilience of critical infrastructure"[10]. Changes to the amendment will require more sectors to report on data breaches, providing the federal government with a more coordinated and effective approach to dealing with cybersecurity, and failure to do so will result in significant penalties. So, what does this mean for businesses? You will be required to have robust procedures in place to mitigate impacts in the event a threat has been realised, and recover as quickly as possible.

Futureproofing your most valuable asset

As the past 18 months have shown us, no one can predict the future. But understanding how you can protect and recover your data will play an important role in business success. Due to outdated IT systems, lack of cybersecurity protocols, reduced IT staff and highly sensitive data, the health industry is an attractive target to cybercriminals. It's estimated the health industry will spend $125 billion between 2020 and 2025 to modernise its cybersecurity capabilities[11].

Over the next five years, data will continue to grow, and businesses will learn to monetise it in order to stay ahead of the competition. For the healthcare industry that delivers the critical services, futureproofing your data is key to remaining a reliable and trusted organisation in the community.

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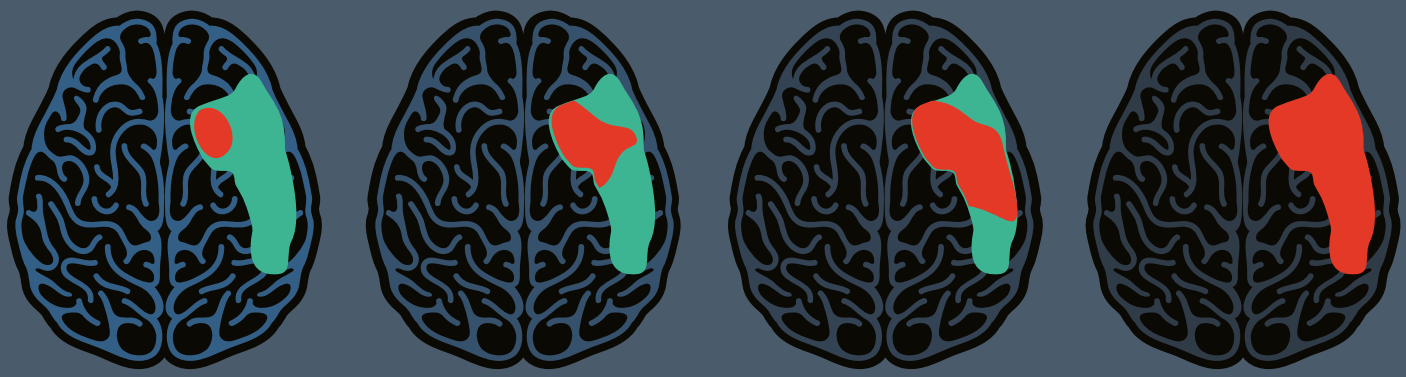
The device set to reform stroke care for all Australians



Scott Kirkland is Co-Founder and Executive Director at EMVision, a healthcare technology company aiming to change the stroke care paradigm. EMVision has developed a portable brain scanner for rapid, point-of-care stroke diagnosis and monitoring, which is set to transform stroke care, particularly for Australians living in regional areas, who are 17% more likely to suffer a stroke than those in metropolitan areas, and often unable to access specialised care. There is a critical need to narrow the gap in stroke care between Indigenous and non-Indigenous Australians living in regional areas, with First Nations Peoples having close to three times the rate of acute ischemic stroke incidence and mortality.

Kirkland told *Hospital + Healthcare* about the company's mission to provide equal access to healthcare, how EMVision's technology is set to transform stroke care and diagnosis for rural/regional Australians, and why we need to act urgently.

What factors contribute to the higher rate of stroke and poorer stroke outcomes outside metropolitan areas?

For stroke outcomes, time is everything. The best outcomes are achieved when a patient is treated in the first few hours after stroke onset, ideally within the 'golden hour'. The tyrannies of distance play a significant role here. Unfortunately, only 3% of patients in rural and remote areas of Australia are treated in a stroke unit, compared with 77% of patients in metropolitan areas. In fact, most rural and remote patients need to travel more than 200 kilometres to access care.

Stroke is highly treatable but requires access to urgent neuroimaging first to help health practitioners accurately diagnose and treat the condition.

Taking away the urban/regional factor, is there a marked difference in stroke rates between Indigenous Australians and non-Indigenous Australians in regional areas and, if so, what are the main reasons for this?

There are unacceptable disparities in stroke outcomes between Indigenous Australians and non-Indigenous Australians. Indigenous Australians are twice as likely to be hospitalised with stroke and 1.4 times as likely to die from stroke than non-Indigenous Australians. Of additional concern, life expectancy for Indigenous Australians is already 10 years shorter.

The Stroke Foundation's National Audit of Acute Services found that Indigenous patients have a greater prevalence of stroke risk factors, such as diabetes — more had intracerebral haemorrhages, and were less likely to be treated in a stroke unit than non-Indigenous patients.

What steps are being taken to address rates of stroke in regional areas and for Indigenous communities?

Earlier this year, the Australian Stroke Alliance (ASA) — which is working with Aboriginal and Torres Strait Islander communities as well as Indigenous health experts — was awarded a $40 million Medical Research Fund grant to tackle these challenges, in partnership with EMVision.

Through the ASA program, we'll adapt our lightweight and affordable portable brain scanner technology for road ambulances and air deployment with the Royal Flying Doctor Service, which paired with a national telehealth platform, will help enable all Australians to receive time-critical stroke care, regardless of their location.

More recently, the federal government announced a further $180 million in medical research funding and investment to tackle stroke. This investment will support home-grown research into cardiovascular health, from real-time cardiac monitoring to after-stroke care for Aboriginal and Torres Strait Islander patients.

It's clear that improving stroke outcomes and reducing the huge health economic burden is top of mind for our federal government.

Can you provide more details about the neuroimaging tools that you plan to deploy in regional areas and what impact they will have?

Neuroimaging is a critical first step in distinguishing whether an ischaemic or haemorrhagic stroke has occurred in the patient. This distinction needs to take place before any further clinical decisions are made and proven effective treatment is applied. This is because the treatments are diametrically opposed depending on whether the patient has a blockage or a bleed.

In order to reach more Australians, we need ultra-lightweight, portable and cost-effective neuroimaging tools that can be deployed by

EMVision's portable, lightweight brain scanner will bring vital stroke care services to Australians in regional areas.

"In order to reach more Australians, we need ultra-lightweight, portable and cost-effective neuroimaging tools that can be deployed by standard rural ambulances and the Royal Flying Doctor Service."

standard rural ambulances and the Royal Flying Doctor Service. As it stands, the ASA has already delivered Australia's first mobile stroke road ambulance, which Ambulance Victoria operates within a 20 km radius of the Royal Melbourne Hospital — it has cut treatment time by 41 minutes and treated 10 times as many patients in the first 'golden hour' after stroke. Our goal is to extend this emerging standard of care with a scalable imaging solution to the regional and remote areas of Australia, where over a third of our population resides.

Please describe the development process for EMVision's portable brain scanner and how the technology works.

Our scanner is the brainchild (excuse the pun) of some of the brightest minds in electromagnetic imaging out of the University of Queensland. These researchers have spent the better part of a decade advancing imaging techniques. Our IP portfolio was originally developed by Professor Amin Abbosh and Professor Stuart Crozier alongside a team of approximately 30 researchers.

EMVision was subsequently founded to acquire this IP, commercialise the technology and in doing so, provide more accessible imaging to patients everywhere.

Our technology uses signals in the electromagnetic spectrum (non-ionising) to distinguish between ischaemic and haemorrhagic strokes in a matter of minutes. It acquires data in under 30 seconds and does not require any contrast agents. It's also very light, portable and easy to use, meaning it's faster, safer and more accessible for time-sensitive medical emergencies like stroke.

How will EMVision's technology help to provide equal access to health care?

Today's imaging technologies provide fantastic images but for the most part, they are heavy, immobile, expensive and require purpose-built rooms.

The goal with our technology is to help enable stroke diagnosis and care wherever the patient is, whether that's by the bedside in a hospital, or in the future, out in the community or in an ambulance.

With the support of the ASA, we plan to test, validate and implement a new model of care across our country and in doing so, create a template for the implementation of innovative stroke care across the globe.

How IoT is transforming on-premise laundry dosing in healthcare

As we continue into the second decade of the fourth industrial revolution, the cleaning and hygiene sector finds itself in the midst of an exciting and fast-moving era of communication and connectivity.

Known as the Internet of Things (IoT), this technological growth is a marriage of smart device technology and data generation, processing and accessibility. In the consumer sector, this has resulted in the emergence of the smart home, with users benefitting from the ability to remotely control a multitude of household items — from lighting and heating to kitchen appliances and security devices — via computers, smartphones and tablets.

And there's no sign of this boom slowing any time soon, as Statistica estimates that the worldwide installed base of internet-connected devices will increase from 13.8 billion today to more than 30 billion by the middle of the decade.

This extends far beyond domestic use, however. Businesses around the world are embracing Industry 4.0 — also known as the Industrial Internet of Things (IIoT) — by embedding technology in physical applications to help managers improve everything from operational efficiency to environmental compliance.

As a world-leading manufacturer of chemical dosing pumps and control systems, SEKO is influencing and witnessing first-hand the extent to which this cutting-edge technology is changing what is possible in traditional chemical dosing pump applications, including commercial and on-premise laundry dosing.

In the healthcare sector, where hospital laundry costs account for 2–3% of budget on average, site management have a distinct choice between the installation, operation and maintenance of an on-premise laundry or outsourcing the washing of items such as bed sheets, blankets, towels, uniforms, scrub suits and gowns to a contractor.

The argument against an in-house setup is often that, beyond the initial outlay, it brings with it ongoing costs such as utilities, chemicals, maintenance and repair. However, should the service be outsourced, it is likely that the selected contractor also faces such costs which would ultimately be passed on to the customer — in this case the hospital, where budgets may be especially tight due to the effects of the COVID-19 pandemic.

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While outsourcing laundry removes the hospital's responsibility for managing the process and the need for a dedicated laundry room, it does leave it bound to the contractor's inflexible turnaround times and the potential for service interruption. Meanwhile, in some cases mass cleaning methods, such as the use of a higher concentration of hydrogen peroxide at greater temperatures, cause chemical and mechanical damage to towels, linen and other fabrics which leads to more frequent replacement and subsequently increases costs.

Despite the many pros and cons, it is generally accepted that an on-premise laundry ultimately delivers a better wash performance, longer fabric life and greater flexibility than can be achieved via outsourcing, which is why around two thirds of hospitals choose to launder in house.

In order to manage such operations, there is a clear need within the healthcare sector for chemical dosing systems that have the capacity to handle high load demand across multiple machines while maintaining precision and consistency over an extended period.

In addition, the rapid growth of IoT in everyday life means equipment users now expect the latest systems to provide them with some measure of remote access and control via smartphone, tablet or laptop.

This is one of the reasons operators in the healthcare sector striving for improvements to performance, efficiency, convenience, reliability and sustainability are increasingly specifying web-enabled pump systems for commercial laundry machines within sites such as hospitals and nursing homes.

In the healthcare sector, where infection control is paramount and heavy, stubborn soiling is common, only the highest standard of laundering is acceptable in order to properly protect patients, residents and staff, and IoT-ready dosing and control systems can help operators to consistently achieve this over the equipment's lifespan.

As well as the benefits for patients and residents, a major draw of IoT is that features such as up-to-date downloadable manuals, intelligent auto-tuning sensors and online step-by-step technical support can accelerate installation, setup and commissioning and reduce associated time and costs.

During operation, data is harvested on multiple pump values, including wash cycle status, chemical consumption and equipment performance, which can then be accessed historically or in real time via a cloud-based platform thanks to the system's built-in web server.

With this vital information at their fingertips, users can programme and adjust wash formulas, maximum flow rate, unit of measure and other parameters as well as selecting pump operating modes such as manual, batch and timed in order to optimize performance and minimize chemical consumption.

Common features include the option to view chemical consumption in financial terms, which allows projected detergent and fabric softener savings to be precisely calculated and presented to key decision makers when considering dosing changes.

Reducing chemical and energy consumption this way means operators benefit from immediate efficiency improvements while being able to budget more accurately and streamline stored chemical volume — especially useful on smaller sites where space is at a premium.

Most IoT-based systems include an alarm log that enables users to identify and action faults immediately, helping them to improve efficiency in equipment maintenance, repair and upgrade planning and to minimize costly and inconvenient unplanned downtime.

The technology allows even specific component performance and status to be assessed, meaning the user can be alerted that a part is due for replacement and have it changed before it fails and causes expensive unplanned downtime. For healthcare sites operating on tight budgets, this would allow them to avoid using contract laundry services as a stop gap which would, on a short-term basis, prove expensive.

Meanwhile, the prevalence of data logging and analysis means laundry machine manufacturers are able to monitor trends, user preferences and common problems over time in order to refine equipment and improve their product offering. This ultimately benefits end users, who get to operate the latest, most advanced laundry dosing equipment and exploit new features that improve wash performance and chemical consumption.

It's not only the efficiency of equipment and utilities that can be improved. For those managing public and private healthcare facilities across multiple sites (which may be in in different countries or even continents), IIoT means operations management can be anywhere in the world and still be as effective as they would be whilst stood in front of the laundry system itself.

Plus, wasted journeys by maintenance technicians to perform routine servicing — who may travel a considerable distance to assess a system's condition only to find it in perfect working order — can be eliminated, as they need only be deployed when required.

As the global healthcare sector looks towards a post-COVID future, the benefits of IIoT provide operators today with the ability to take control of in-house laundry costs over both the short and long term, helping to deliver reliability and confidence at a time of great uncertainty.

SEKO is a worldwide manufacturer of chemical dosing systems for multiple sectors, and has supplied its leading on-premise laundry equipment — including the highly-regarded Wash Series IoT-enabled units — to hospitals, care homes and other healthcare sites over many years. The complete range can be viewed at www.seko.com, where you'll also find contact details for your local SEKO representative.

Infection control in aged care

Sean Rooney, Chief Executive Officer, Leading Age Services Australia (LASA)

In recent times we have increased protections for older Australians in aged care, with the Infection Prevention and Control (IPC) leads in aged-care homes, high-rate vaccinations for residents and mandatory immunisation for staff.

The Australian Institute of Health and Welfare has reported on the direct and indirect health effects of the pandemic across the country, covering the 12 months since April 2020.

People living in residential aged-care facilities made up 75% of Australian deaths from COVID-19, despite only making up 7% of the total cases. Until the beginning of December, there were 671 older people who died from COVID-19 in aged-care homes and they were at least 24% in the 85- to 89-year age group and 34% in those aged 90 and over.

As COVID-19 infections played out across our communities in 2020, we all learnt it was nothing like a gastro or influenza outbreak.

Sadly, there were deaths in Dorothy Henderson Lodge and Newmarch House in Sydney and when COVID-19 appeared in homes in Melbourne, it hit with speed across multiples of homes across a very short period. All at a time when personal protective equipment (PPE) was unavailable or highly priced.

People in general — aged-care teams, governments and sector specialists — were all still learning how this virus was spreading; we were building the plane as it was taking off.

Should we wear masks, should case zero be sent to a hospital or remain in a specific area of a non-purpose built nursing home?

When facilities notified public health authorities of a positive case, some waited four days for testing of staff and residents.

Now we have more understanding of the virus, enhanced Outbreak Management Plans based on lessons learned, trained IPC leads and trained teams of aged-care staff and the use of rapid antigen testing (RAT) in some settings.

We also understand the importance of donning and doffing PPE safely, plus the other controls of new respiratory etiquette, wearing face masks, physical distancing and improving hand hygiene.

Some aged-care providers have sourced their own teams to assist with polymerase chain reaction or RAT testing and now conduct their own contact tracing.

At the end of 2020, the Royal Commission released a special report on COVID-19, calling for an 'infection control champion' in every aged-care facility in Australia.

The federal government accepted the recommendation and provided funding of $217.6 million to residential aged-care providers and required all sites to engage an infection prevention control (IPC) lead. Depending on the individual, the focus on online coursework was also challenging. The course was designed to be completed in 80 hours and the targeted IPC training included delivery in a face-to-face format.

Training delivery is sensitive to the aged-care setting, the workforce composition, language proficiency, background education, demographics and flexible to be replicated in rural and regional locations.

The older age groups were among the most vulnerable during the pandemic and that remains the case, although the vaccinations will have given them added protection.

It is important to remember that many hundreds of aged-care homes remained — and continue to remain — COVID-free.

While older Australians remain among those most vulnerable to COVID-19, a number of things are different now, when compared to the first nine months of the pandemic in 2020.

A majority of older Australians in residential aged care are now fully vaccinated and residential aged-care providers have adequate supplies of PPE and hand sanitiser, and have strict hygiene and infection control protocols.

With the Visitor Access Code in place, the providers and federal, state and territory health departments are better prepared.

They have improved communications with the sector, with residents, staff and families and with each other.

These changes mean that our vulnerable older people are better protected, safer and keep infections down in residential care.

In the eight weeks since the Prime Minister announced that vaccination would become mandatory for all residential aged-care workers there has been a concerted effort by providers and workers to respond.

In the aged-care sector we know better than most that COVID-19 can be devastating and have been calling for vaccination of our workforce to be a first priority.

Around 99.3% of workers have received their first dose and around 82% are fully vaccinated against Covid-19, now that vaccines are more readily available to these frontline residential aged care workers. This number is expected to go to 100% soon.

However, for a small number of staff there are valid reasons why they can't be vaccinated — due to medical reasons or because they haven't been able to gain access to a vaccine in the time available.

In some cases, under the state and territory public health orders temporary exemptions will be in place to ensure there is continuity of care, quality and safety for both the residents and the staff caring from them.

We are actively monitoring progress to achieve vaccination and working in collaboration with government to ensure all the supports that are required to providers are given so that they achieve the vaccination target and maintain the care and safety of those in their care.

At the end of the day protecting older Australians and those who care for them is our number one priority and we are *#ProudtoProtect* them.

We would expect that with these measures in place and armed with what we have learned from the outbreaks in aged care in Sydney and Melbourne, older Australians in care are better protected in 2021 than in 2020.

It is important to remember that many hundreds of aged-care homes remained — and continue to remain — COVID-free.

The presence of well-rehearsed COVID plans by aged-care providers means that any COVID infections of residents or staff are quickly contained and do not spread through the home.

How correct ultrasound disinfection procedures protect patients

Jon Burdach, PhD
Head of Clinical Affairs, Nanosonics Limited

Introduction

Correct disinfection of reusable medical devices including ultrasound probes is important to prevent infection transmission. The number of ultrasound procedures is rapidly increasing and the need to keep up to date on reprocessing requirements may be challenging for some ultrasound users.

In Australia, ultrasound is increasingly utilised as an imaging modality across a broad range of health care departments/specialties. Many of these probes may be used on intact skin, non-intact skin or mucous membranes or could even occasionally contact sterile tissue. This presents a complex challenge as contact with these various body sites necessitates different levels of disinfection (e.g. low level disinfection or high level disinfection) prior to the probe's use.

Procedures are now taking place in different hospital inpatient and outpatient departments by health professions which include sonographers, physicians, nurses, anaesthetists, interventional radiologists, OBGYNs, nurse practitioners, and physician assistants. This has resulted in an increased use of surface probes for semi-critical and critical procedures such as biopsies, cell retrieval, cannulation, catheterisation, injections, ablations, surgical, aspirations and drainages.

Risks

Recent publications have highlighted the risk of using ultrasound if proper disinfection procedures are not followed.

In 2012, a patient died from a hepatitis B infection which was likely to have been caused by a failure to appropriately decontaminate a transoesophageal echocardiography probe between each patient use. As result of this fatality, an alert was released by the UK medical devices regulatory agency advising users to appropriately decontaminate all types of reusable ultrasound probes.[1]

Furthermore, according to a 2017 study carried out by National Health Services Scotland, patients were 41% more likely to receive positive bacterial cultures after a transvaginal scan when probes were only low level disinfected.[2]

Users should not only be concerned about correct probe disinfection, but also probe handle disinfection as a study found that probe handles are not routinely disinfected and 80% were found to be contaminated.[3]

Another important point for consideration is that while many sonographers believe that their transvaginal ultrasound patients are protected from infection risk by using barrier shields, and/or condoms, research has shown that up to 9% leak.[4-7] Australian guidelines require that these probes undergo high level disinfection (HLD) even when a sheath is used.[8]

Correct reprocessing

The diverse use of ultrasound probes is now prompting a renewed focus on correct probe reprocessing to ensure patient safety.

The ACIPC-ASUM Guidelines on the reprocessing of ultrasound probes (released February 2017) follow Australian and New Zealand standards (AS/NZS 4187:2014 and AS/NZS4815:2006). These guidelines are a world first joint guideline between an infection prevention and ultrasound society and form the minimum recommended practice for reprocessing ultrasound probes in Australia. They highlight that to ensure best practice standards, infection preventionists and ultrasound users need to work together to reduce the risk of infection that is associated with using ultrasound probes.

It's not just intracavity probes that require HLD

Guidelines from around the world, including those here in Australia, require ultrasound probes that come into contact with mucous membranes and non-intact, broken skin, to be high level disinfected.[8-15, 17]

A number of guidelines even specifically outline that automated validated processes for ultrasound reprocessing are the preferred option. This is supported by a study relating to manual disinfection methods which found that only 1.4% were fully compliant when using manual methods compared to 75.4% when using semi-automated disinfection methods.[16]

Conclusion

Ultrasound users should work with their infection prevention colleagues to understand current Australian guidelines and standards for reprocessing ultrasound probes. While the expansion of ultrasound carries potential infection control challenges, proper education is key to maintaining patient safety and minimising the risk of infection.

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Innovative healthcare delivery to our most remote regions

The town of Balgo (Wirrimanu) is one of Australia's most remote Aboriginal communities located in the south-east Kimberley region of Western Australia on the northern edge of the Great Sandy Desert and on the western edge of the Tanami Desert.

A groundbreaking telehealth service is reaching remote Aboriginal communities in the Kimberley. The technology allows doctors to 'see' their patients remotely using connected examination tools such as digital stethoscopes and high-definition cameras.

Aboriginal Australians living in some of the world's most isolated locations will soon be able to receive remote medical examinations for the first time, with the rollout of a new telehealth system from Visionflex.

The technology enables health practitioners around the world to deliver medical care via real-time, high-definition video conference, and remotely perform detailed clinical medical examinations. Visionflex's ProEX system supports a suite of approved medical devices, revolutionising the way remote medical professionals examine, diagnose, monitor and treat patients who, importantly, can now remain in community for health care.

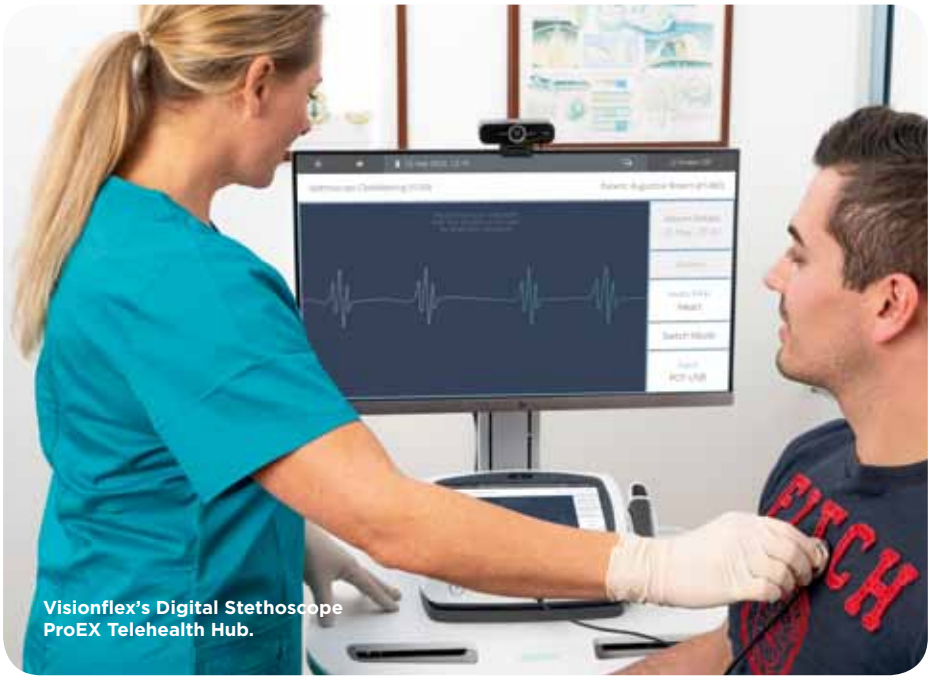
Peak body, Kimberley Aboriginal Medical Services (KAMS), oversees delivery of primary health care across the Kimberley region in the north-west corner of Western Australia. With financial assistance from the Woodside COVID-19 Community Fund, KAMS is deploying the Visionflex ProEX telehealth system across the region.

KAMS Medical Director Dr Lorraine Anderson expects that the Visionflex telehealth system will transform the delivery of primary health care to Aboriginal communities in the region.

"The ProEX system is going to mean that there's a better, more accurate service going into these communities," Dr Anderson said.

"It's going to be more timely, so patients are not going to have to wait until the doctor comes and it's also going to mean that people don't have to leave the community as often to seek medical care outside.

"We will also be able to look after a significant proportion of people by using telehealth."



Visionflex's Digital Stethoscope ProEX Telehealth Hub.

Visionflex CEO and Co-founder Mike Harman said, "Bringing health services to remote communities around Australia is a huge challenge and KAMS has been a leading example on how this can be achieved in the Kimberley region of Australia. The area covered by KAMS and the number of communities they work with is staggering when we remember that this is one of the most remote regions in the world.

"The team at Visionflex are thrilled to be working with KAMS on this important rollout of telehealth technology to bring the communities closer together and to improve their access to health services.

"As an Australian technology provider, we appreciate the confidence that KAMS has placed in us to help them meet the challenge and we look forward to working closely with them to achieve a successful outcome."

In the Kimberley, many communities do not have full-time doctors on site and appointments for medical and specialist treatment as well as hospital care, typically require patients to travel out of community, usually alone, to larger centres such as Kununurra, Broome, Perth (more than 2000 km from Broome) and Darwin (1800 km away).

Travelling out of community without any family support can be a stressful experience for a culture that traditionally practises informed, group decision-making. Travel costs are also prohibitive, with specialist visits typically requiring at least three appointments, including a pre-op consultation and post-treatment check-ups.

Language and medical terminology are additional barriers. For many Kimberley Aboriginal people, English is their third or fourth language and they may require assistance at medical consultations to translate or explain treatment details.

For Kimberley Aboriginal communities, the ProEX telehealth system, plus medical devices, offers several key benefits:

- Remote doctors can see inside a patient's ear, nose and throat, and listen to and observe diagnostic quality heart, chest and body sounds in real-time.
- Delivery of remote medical specialists and allied health professionals anywhere, anytime.
- Health decision-making is kept in the community.
- Patients can remain in community for treatment.
- The cost and stress of travel for unnecessary medical visits is reduced.
- Facilitates training and mentorship of local healthcare workers.

According to the Australian Institute of Health and Welfare, in 2018–19, Indigenous Australians experienced a burden of disease that was 2.3 times the rate of non-Indigenous Australians. This overall poorer health result creates a greater need for access to health services.

Dr Anderson said that until now, KAMS' existing telehealth system had no clinical capability, which meant Kimberley Aboriginal people often had to leave their communities and travel huge distances for medical treatment.

"We were unable to see into throats, or to listen to hearts and lungs. These were big issues and that is what we're looking to resolve with the Visionflex equipment that we have purchased," Dr Anderson explained.

"We've got very good clinicians, nurses and Aboriginal Health Practitioners on the ground in our clinics, but we don't necessarily have doctors in every clinic, every day and there are no doctors on call in the clinics at night; the on-call process has traditionally been by phone.

"What our Visionflex equipment means is the patient can be seen. The patient has got a clinician with them — either a nurse or an Aboriginal Health Practitioner — and they can dial up the doctor and the doctor can instruct them on what they need to do.

"They can see through the Video Examination Glasses and know exactly what the Health Worker is looking at. They can take photos and video, and it's all done in real time across the technology.

"Most importantly, the technology is going to allow, for example, the nurse or health worker to look inside someone's throat, and for the doctor on the other end to be able to see what they are looking at so they can make a diagnosis and treat accordingly. The same applies to looking in ears.

"The other piece of equipment that we're very excited about is the digital stethoscope. We can listen to heart sounds and we can listen to lung sounds and the doctor at the far end can get the health worker or the nurse to just pop the stethoscope in the right place, get the patient to breathe, and the doctor on the other end can see and hear what's going on.

"This will transform a lot of the work we do across telehealth."

KAMS is using Visionflex's desktop ProEX Telehealth Hub and the tablet-size ProEX Mobile to conduct real-time telehealth video conferences, plus a range of Visionflex-approved medical devices including digital stethoscope; pulse oximeter; blood pressure monitor; infrared forehead thermometer; and video USB otoscope with LED illumination. KAMS is already using a pair of Visionflex Video Examination Glasses HD.

Dr Anderson was careful to point out that telehealth will never be a replacement for in-person medical visits, but she believes the new system will greatly improve health outcomes for Kimberley Aboriginal people, and support closing the gap on access to primary healthcare services.

"We know for sure that the health outcomes are better when people can be treated in community," Dr Anderson said. "They feel comfortable in the community clinic with one of the clinicians... We've got people who can translate; we've got family who can support; and it makes a big difference — it's more acceptable and it's safer for people."

KAMS Medical Director Dr Lorraine Anderson.

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Mark Dawson's inquisitive mind has sparked innovation in cancer research

Jane Allman

After completing his training as a clinician, Professor Mark Dawson was frustrated that, when it came to treating cancer, many questions remained unanswered. Why was it that two people of similar age, with the same cancer — which looked identical under a microscope — and given the same treatment, had such different treatment outcomes — with one responding well and another poorly?

The desire to find answers to questions such as these led Professor Dawson to pursue a scholarship with the General Sir John Monash Foundation — an organisation established to support exceptional Australian students with postgraduate scholarships to study overseas. The program aims to foster leadership, expertise and international networks, and build Australia's capabilities for the future. The scholarship took Professor Dawson to the UK's Cambridge University to study a PhD in epigenetics and work towards expanding the understanding of different cancers and new approaches to treat them.

"I wouldn't be where I am today without the Sir John Monash Foundation," Professor Dawson said. "The scholarship gave me the opportunity to go anywhere in the world, to learn from and work with the best people, and pursue my career."

"In recent years our knowledge of this disease has grown — we have a better understanding of what mutations exist and how they drive specific cancers." — Professor Mark Dawson

Professor Dawson explained that current approaches to cancer treatment revolve around five pillars: surgery, chemotherapy, targeted therapies, radiotherapy and immunotherapy — the newest and most promising therapy that can leverage our own immune system to fight cancer cells.

"In recent years our knowledge of this disease has grown — we have a better understanding of what mutations exist and how they drive specific cancers. Exploring the specialised functions of certain cells has enabled us to develop more targeted therapies. Asking questions and searching for answers is what drives scientific discoveries forward."

Currently based at the Peter MacCallum Cancer Centre and the University of Melbourne Centre for Cancer Research, Professor Dawson runs a group of 26 researchers trained in cancer epigenetics. He also co-leads the Cancer Biology and Therapy Program, which operates 13 different labs.

"The lab uses curiosity-driven science to make discoveries that will inform better therapies," Professor Dawson said.

"We need curiosity to innovate and move forward."

Professor Dawson's research has identified novel therapeutic strategies for several cancers and has helped to establish clinical trials with epigenetic therapies.

Researchers in Professor Dawson's laboratory are working to develop a molecular understanding of the role that epigenetic regulators play in the initiation and maintenance of cancer and discover the mechanisms by which malignancies evade therapeutic pressure. The hope is that these findings will translate into personalised approaches that advance clinical care.

The diverse research team of clinicians and scientists has broad expertise spanning biochemistry, cell biology, molecular biology, genomics, chemical biology, immunology, animal models of disease and bioinformatics. This multidisciplinary approach is considered critical in pursuing curiosity-driven innovations in cancer care.

Sparking National Conversations on Surgical Site Infections in Australia

On May 20 2021, Johnson & Johnson Medical Pty Ltd hosted the inaugural Ethicon Surgical Site Infection (SSI) Symposium which sought to raise awareness on SSI, and the important role of SSI surveillance in Australia by bringing together leading experts in their fields to discuss the latest evidence, tools and resources.

Why does this matter? Healthcare-associated infections are the most common hospital-acquired complication in Australian hospitals[1].

SSI's adversely impact a patient's quality of life and place an additional economic burden on the Australian national healthcare system[2]. According to the Commission on Safety and Quality in Healthcare, hospitalisation of an SSI can cost a hospital up to $42,102[1] in extra costs.

Despite what we know about the incidence and impact of SSI's, monitoring and surveillance in Australian hospitals remains inconsistent. This makes it challenging for surgeons, nurses, and infection control specialists to be fully aware of the large-scale implications of SSI's and effective infection prevention methodologies. Therefore, Ethicon is committed to partnering with policy makers, healthcare facilities and healthcare professionals to increase awareness about SSI prevention and improve patient outcomes.

SSI's are preventable with the right evidence based solutions and interventions. Using Plus triclosan-coated sutures as part of a bundle of care approach, effectively reduces the risk associated with SSI's by 28%[3]. With this, the implementation of national and international guidelines and SSI management protocols can save lives and significantly improve the outcomes of patients.

Throughout the SSI Symposium, international experts Professor David Leaper of the Institute of Skin Integrity of the University of Huddersfield, UK; Dr. Ken Loi, a bariatric and upper gastrointestinal and oncology surgeon; Dr. Cath Murphy, Professional Standards Officer at ACORN; and Professor Phillip Russo, President of the Australian College of Infection Prevention (ACIPC), shared the latest insights regarding the cause and prevalence of SSI's together with specific techniques, protocols, and guidelines that should be standardised in hospitals and health care settings.

Additionally, surveillance and epidemiological specialists emphasised the importance of consistent and robust participation in SSI surveillance measurement across healthcare facilities.

"As part of our commitment to ongoing professional education and partnership with healthcare professionals, we were delighted with the feedback from attendees who found the event to be 'informative and insightful in how small and inexpensive changes can impact and positively improve patient outcomes'."– Jennifer Spurgeon, Vice President, Ethicon Australia.

At Ethicon, we firmly believe that by sharing knowledge and raising awareness of evidence based guidelines, we can improve surveillance of SSI's and prevent them from the onset. We are committed to developing technologies which help surgeons improve outcomes and to the education of healthcare practitioners on what we can do together to achieve our collective goal of zero surgical site infections in Australian Hospitals.

Update August 2021

Since the SSI Symposium NICE (National Institute for Health and Care Excellence, UK) issued a recommendation for the use of Ethicon PLUS sutures in all surgeries across the National Health Service[5]. https://www.nice.org.uk/guidance/mtg59/chapter/1-Recommendations

This recommendation, as well as the inclusion of antimicrobial coated sutures on the NHMRC Australian Guidelines for the Prevention and Control of Infection in Healthcare 2019[4], WHO (World Health Organisation)[6] and CDC (Centre for Disease Control)[7]* reinforce the importance of recognising the role that sutures can play as a source of infection and how PLUS sutures can prevent SSI's.

*NHMRC, WHO and CDC guidelines on reducing the risk of surgical site infections are general to triclosan-coated sutures and are not specific to any one brand.

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4. Australian Guidelines for the Prevention and Control of Infection in Healthcare, Canberra: National Health and Medical Research Council (2019).
5. https://www.nice.org.uk/guidance/mtg59/chapter/1-Recommendations Plus Sutures for preventing surgical site infection 28 June 2021 Accessed 13 August 2021
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7. Berríos-Torres SI, Umscheid CA, Bratzler DW, et al. Centers for Disease Control and Prevention Guideline for the Prevention of Surgical Site Infection, 2017. JAMA Surg. doi:10.1001/jamasurg.2017.0904

One plate at a time

Shaping better meals for older Australians

Jane Allman

The Pure Food Co's mission is to nourish the world's older people through quality food and nutrition, and to make a positive difference for senior Australians who may be struggling to maintain the nutritional levels required to lead happy and healthy lives.

Founded off the back of first-hand experience watching illness make it impossible for a loved one to eat, the company has been innovating and collaborating to bring the Shapes of Goodness range to aged-care homes and hospitals across New Zealand and Australia.

Launched in July this year, Shapes of Goodness is a range of texture-modified food — crafted to be delicious, nutritious, and safe and easy to swallow. The product is shaped to bring back the joy of mealtimes, with diners reported to consume up to 40% more.

The Pure Food Co Co-Founder Sam Bridgewater explained how his personal experience spurred him to make a difference.

"My world changed forever when I watched a family member's illness make it impossible for him to eat. The emotional impact set off a journey to uncover how other people with such challenges cope.

"Our research revealed that too many people were struggling to enjoy food and therefore get the nutrition they need. In fact, almost a quarter of older people are malnourished, meaning they are more frail, less independent and, too often, unhappy," Bridgewater said.

"Our mission is to reclaim the true value of food by creating delicious food that will help people thrive when they are at their most vulnerable."

Hospital + Healthcare spoke to The PureFood Co's Dee Reddy about nutritional needs as we age and how aged-care providers can make an impact in this area.

As we age, what dietary nutrients become particularly important and what happens if these requirements are not met?

"Evidence shows that as we age our need for protein increases to maintain good health, recover from illnesses and maintain bodily functions. Often our energy requirements are heightened, despite the fact that activity levels are often reduced.

"Depending on the level of comorbidities and health of the individual, older Australians will require additional energy in the form of kilojoules to support positive health outcomes. If these requirements are not met, malnutrition and weight loss will most likely occur, impacting quality of life and health outcomes. This, in turn, increases the level of care needed and therefore the workload of health workers.

"Malnutrition in the elderly can lead to weakened immune systems, poor wound healing, increased falls, decreased bone/muscle mass and impaired ability to fight infection."

What specific nutrient requirements are difficult to achieve in an aged-care setting and how does the Shapes of Goodness range help to overcome this challenge?

"People in aged-care facilities often have heightened requirements for protein and energy, particularly individuals on texture-modified diets. It can be difficult to get enough nutrients into texture-modified food as it can be challenging for seniors to eat large amounts of modified food.

"Shapes of Goodness are nutritionally fortified to provide extra protein and energy in every mouthful, allowing individuals on texture-modified diets to meet their heightened requirements more easily."

Within an aged-care setting, roughly what percentage of residents require texture-modified meals and what are the main reasons for this?

"About 15% of Australian aged-care residents are on texture-modified diets. Residents can be placed on a texture-modified diet

as part of the management of a swallowing difficulty (dysphagia). Dysphagic individuals have an altered swallowing process that can occur from conditions such as dementia, stroke, head injury, Parkinson's disease, motor neurone disease, cerebral palsy and achalasia."

What factors led to the development of Shapes of Goodness?

"We believe food is not just fuel for our body, it's truly much more. We have experts in health care and food who curate recipes and flavours that are specially made for seniors. For example our roast lamb is so rich in flavour and visual appeal (looks like a lamb chop) that for those eating it, it will remind them of a Sunday Roast, helping them eat well and stay happy.

"Food is usually the highlight of the day for most residents living in care homes and we make mealtimes enjoyable with our beautiful shapes."

What kind of responses have you received from residents and aged-care workers?

"We have received positive feedback from seniors and aged-care professionals. Aged-care workers have commented on the huge improvements in the texture-modified food being provided to their residents. They say they have peace of mind that their residents are receiving the best presented and tasting food that is packed with nutrition."

Feedback from aged-care professionals

"I am a Kitchen Manager at a Taradale Rest Home. We have been using The Pure Food Co's products for some time. Just started using the shaped product and love it! Looks great, saves time and a lot of our residents on texture-modified diets are unable to give verbal feedback, but we notice they are eating well. It is also good for families, seeing that we do all we can to maintain their loved ones dignity and show them respect." Amanda Jean Olsen

"Absolutely recommend this company and this product. The presentation of the shaped food is excellent and there has been a great response by residents. A friend who also needed minced, moist and then pureed food said it was the best he had tasted." Trish Gapes, Selwyn Foundation

What are the factors that need to be considered when it comes to providing meals to residents in aged-care facilities?

"Training and education is key when it comes to the meals provided for residents on special diets. We offer courses specific to providing safe texture and increasing nutritional needs.

"Other important considerations are staff engagement, the capabilities of the kitchen to prepare meals correctly and the budget of the aged-care facility."

Foodservice:
best practice in food safety

Andrew Thomson, Think ST Solutions

Is your food safe by good luck or good management?

Across foodservice there is a reliance on government food regulatory authorities for advice and information to help manage food safety within their food business. These operations take advantage of a government template to develop a food safety program but fail to customise it to reflect food handling activities within their business. This puts a foodservice operation at risk.

Fresh thinking and approaches will deliver best practice results and better management of risk.

Leadership

The best foodservice operations will have chief executive commitment. This commitment is visible and active with a high-standard food safety management policy. Chief executives are familiar with Hazard Analysis Critical Control Point (HACCP) food safety management systems and have a solid understanding of food law requirements as they are ultimately responsible for food safety management.

The operating system is supported with the appropriate policies and procedures as part of a risk-based approach to food safety management.

Senior leaders are inspirational and adopt inclusive approaches; they are a reliable source of food safety information for the chief executive and customers; keep the trust of food regulators and accreditation assessors; earn the confidence of clients; and are a catalyst to improve food safety across the organisation.

A foodservice business is accountable for fully implementing the food safety management system and continuously seeks ways to improve. Food handling employees (and leaders) are responsible for implementing the food safety policies, procedures, and continuous improvement in these areas.

Employee learning

The best foodservice operations demonstrate they have well-developed strategies for employee learning that are aligned to organisational objectives, including a learning management framework to achieve a skilled and capable workforce (read my previous article Achieving a skilled foodservice workforce).

Best-practice food operations have started with:

- ensuring management and employee commitment and accountability;
- considering organisation priorities, policies and methods for allocating resources for delivering performance and learning, and incorporating these into training programs;
- ensuring training is aimed at the employees' level of understanding and education;
- incorporating hands-on training, so the individual can see what needs to be done and then do it themselves;
- incorporating informal learning strategies to build employee skills; and
- providing ongoing support for all employees.

Learning is viewed positively when it translates into practical skills on the job. When people develop confidence, they automatically become proactive and solutions-focused and this has a positive flow-on effect on all employees across the team.

Risk monitoring and reporting

The best foodservice operations have an effective monitoring and reporting process for managing operational risk. There is judicious reporting of key information on all aspects of food safety management to senior leaders and the board of directors to support proactive management of risks.

Customer satisfaction

The best foodservice operations know the importance of obtaining information on customer satisfaction: measurement, analysis and improvement. Leaders study the results on all feedback and evaluations as they understand this is vital information on business performance.

The way forward

The best food operations will far exceed minimal government standards, will proactively test to verify their food safety systems are working, will transparently publicise those results and will brag about their excellence in food safety by marketing so consumers can choose safe food (Dr Doug Powell).

What's in it for you?

- Confidence in knowing your food is safe
- Control over food safety
- Growing customer confidence
- Marketing edge over competitors
- Save time, money and worry by detecting problems early
- There will be no 'surprises'

SPC and the Increasing Importance of Food Safety

The ongoing COVID global pandemic continues to impact daily life and is projected to linger for some time. Prioritising hygiene has become a concern for Australian consumers and one that will likely become the new norm as we adapt our routines. During these uncertain times, consumers increasingly look for food security, reassurance, and trusted brands. It is now more important than ever for the food industry to be providing safe food choices which support both local agricultural and food production economies.

SPC is a proud Australian manufacturer of fruit and vegetables, based in the Goulburn Valley Region of Victoria. SPC is committed to the important role it plays in the Australian economy and manufacturing industry. Local growers provide clean, green, and safe produce which is manufactured in full compliance with Food Standards Australia New Zealand (FSANZ).

SPC's manufacturing site in Shepparton is regularly tested and audited against the most stringent food safety and environmental standards in the world. This includes Total Quality Management Systems which ensure traceability from farm to plate.

SPC ProVital Diced and Puree Fruit cup packaging has been specifically developed in collaboration with Arthritis Australia's Accessible Design Division and aims to provide an accessible fruit snack including for those consumers with fine motor skill difficulties. This award-winning, innovative package design is easy to grip and provides an optimised seal to reduce opening force while guaranteeing food safety.

The use of individually sealed portion-controlled fruit cups is ideal for infection control management as it reduces the risk of food handling-related infection. It also reduces waste associated with the use of bulk formats where you would have to individually portion out the serves. Food waste and sustainability in these uncertain times are other key considerations for all Australians. The SPC ProVital fruit cup has been recognised by the Australian Institute of Packaging as contributing to reduced food waste.[1]

SPC ProVital Diced Fruit in Juice

The SPC ProVital diced fruit range is produced using state of the art 'cold fill' technology for gentler processing to lock in vibrant fruit colours, consistent texture, and fruit cuts. This results in a great-tasting snack based on the natural goodness of fruit.

SPC ProVital Fruit Puree

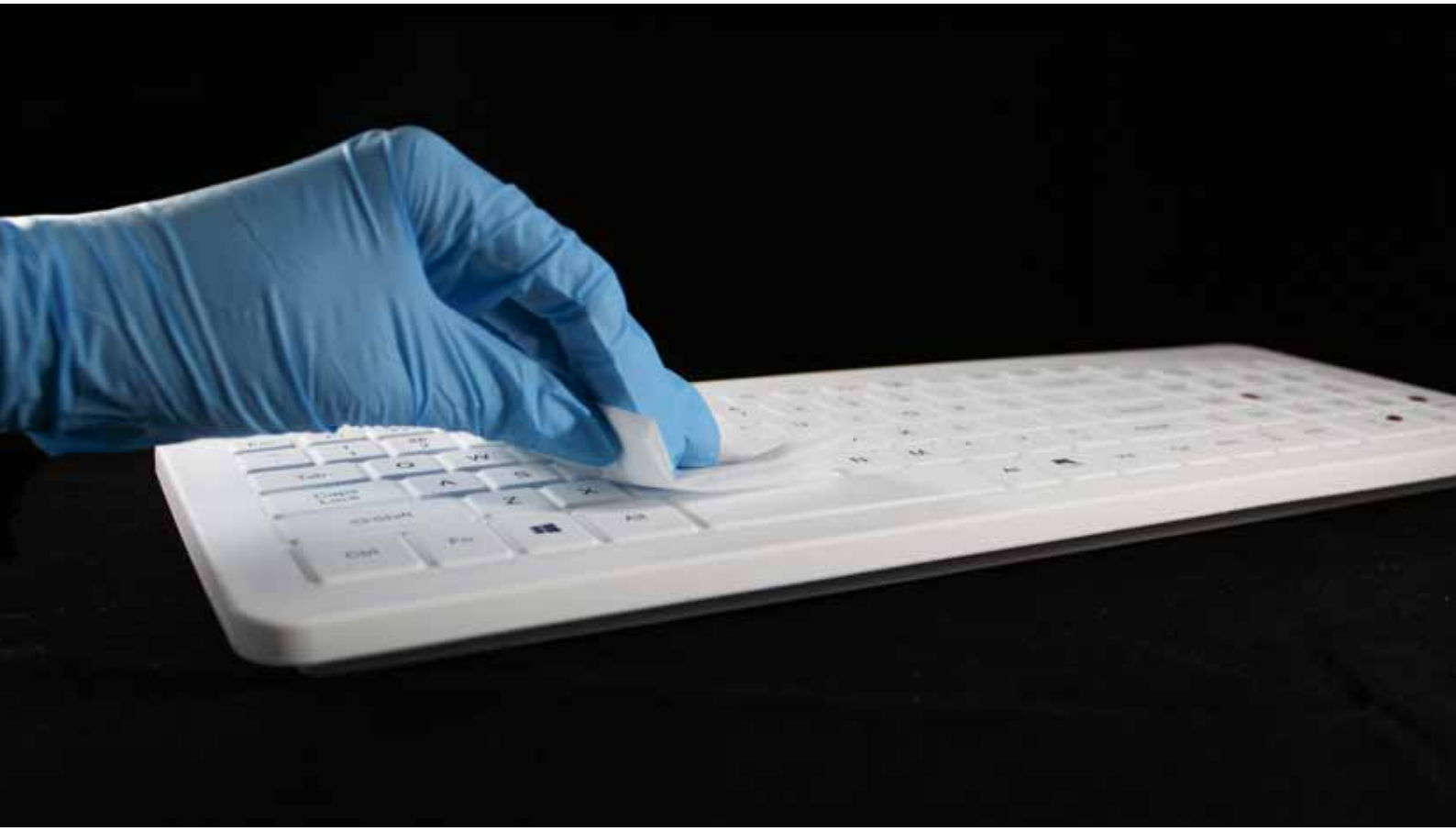
The SPC ProVital Level 4 Pureed range of delicious, nutritious, and expertly formulated fruit-based products, has been designed and rigorously tested to meet the strict guidelines of IDDSI Food and Drinks Classification for Level 4 Pureed foods. This type of texture-modified diet may be recommended for individuals who have Dysphagia. This is the difficulty of swallowing food and or drinking fluids. Dysphagia may occur for several reasons, including stroke, Parkinson's disease, motor neuron disease and dementia[2].

NEW! SPC ProVital Diced Fruit Variety Pack – Now Available!

SPC ProVital is excited to announce the launch of SPC ProVital Diced Fruit in a 12-count variety pack. Perfect for at-home use or within your health facility. Delicious flavours include Diced Peach, Diced Two Fruits and Diced Fruit Salad with each 120 g cup providing natural goodness of Australian grown fruit. Reach out to Jelica Vrkic (Jelica.vrkic@spc.com.au) for additional details.

1. June 2016: SPC ProVital® easy-open cup won Food Service category in the Australian Institute of Packaging (AIP)/World Packaging Organisation (WPO) Save Food Packaging Awards. This new award recognises companies which are developing innovative and sustainable packaging that minimises food losses and food waste.
2. Swallowing Fact Sheet. Speech Pathology Australia. Available @ www.speechpathologyaustralia.org.au

Protect your patients. Protect your staff.



High-touch surfaces in medical environments, such as keyboards and mice, need to be properly cleaned and disinfected throughout the day. Standard plastic keyboards cannot withstand repeated cleanings with harsh disinfectants. Constant use of consumer-grade wipes will wear off keyboard characters and, over time, damage the internal components. Cleaning and disinfecting your keyboard and mouse between patients is the best solution.

Founded in 1982, Man & Machine, Inc. has 39 years of experience in computer peripherals and custom hardware solutions, and 18 years of experience in the design and manufacturing of washable keyboards and mice. By listening to our customers, paying attention to ever changing safety protocols, and remaining flexible as a company, MMI has become the leading USA based manufacturer of waterproof and disinfectable keyboards and mice. Our products are designed to maximize infection control protocols.

Man & Machine established the Medical Grade™ requirements as a standard for all keyboards and mice to be measured against when considering them for use in healthcare. These requirements include the product being hygienic white to easily identify the presence of blood and splatter; silent and ergonomic; able to be terminally cleaned in a 1:10 bleach solution per CDC guidelines; and able to stand up to the rigors of a medical environment with multiple users 24/7 and repeated harsh cleaning and disinfection.

In addition, MMI has developed an extensive range of lower cost washable keyboards and mice that can be used in clinical and administrative areas in the medical industry. Our washable keyboards and mice have been designed to meet a variety of applications and requirements. From IP68 to Wireless to Lockable to Backlight, we give you what you want and need, at a price that works for your organization.

Through our years of experience, we have developed a partnership with HP, to provide the keyboard and mouse that is packaged with their Healthcare Edition AIO. Based on the success of this partnership, we have since developed sterilizable silicone barriers for key areas on the HP MFP Printers (available exclusively through HP).

Man & Machine's Fit for Purpose solutions also include barriers (laptop drapes and keyboard covers), and silicone mouse pads that can be sterilized in an autoclave. We also can provide Asset IDentification solutions to easily identify where an asset should be located within your facility.

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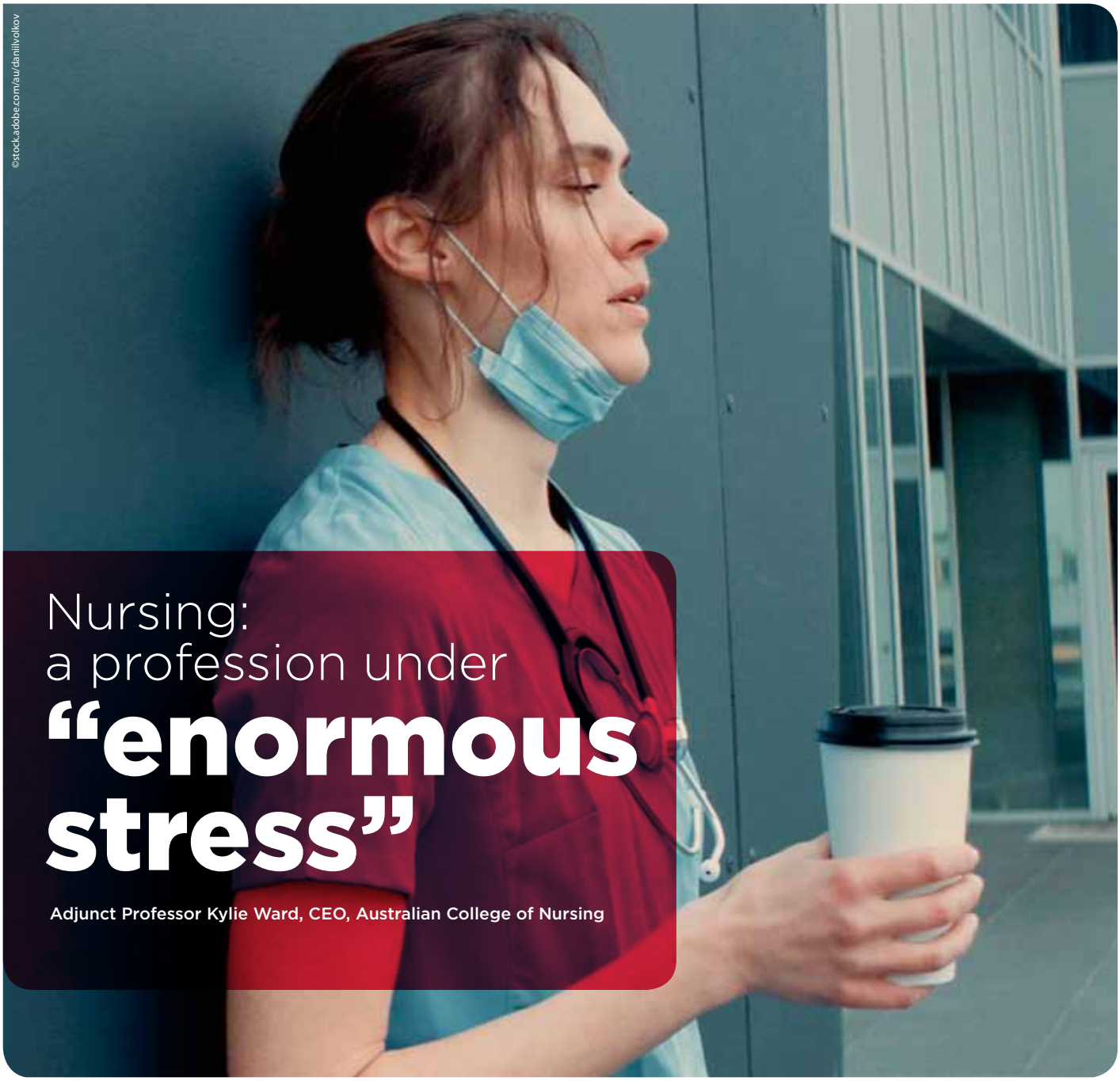
For more information
Man & Machine
www.man-machine.com



Nursing: a profession under "enormous stress"

Adjunct Professor Kylie Ward, CEO, Australian College of Nursing

Nursing, already under pressure, is reaching breaking point due to the pressures of COVID-19 and a disjointed healthcare system, including the acute, primary and aged care sectors. We must act now to protect our nurses and healthcare; the time has come for a national reckoning on nursing in Australia.

Australian nurses cannot continue to work under the extreme pressure they are currently operating under — the impacts are mounting.

The almost 400,000 Australian nurses — the largest and most trusted health professionals in the country[1] — are a constant presence in every one of our major life milestones, national emergencies and global crises.

The nurse of today holds a science degree, possesses highly technical training, valuable medical opinions and front-row expertise, is an effective trainer, and is skilled in population and systemic thinking.

Importantly, there is also a major emotional and physical toll on nurses.

For too long there has been a reliance on the 'giving and goodness' of nurses — however, there is not an endless bucket of personal resources to draw upon, to keep the profession fronting up to do the job, whether that be in policy, research, in hospitals, in the community, in academia, politics and across the aged care and disability sectors.

And now the signs are unmissable for a profession under enormous stress.

We desperately need a rethink about how we support and provide nursing care in Australia.

Nurses around Australia are reporting to the Australian College of Nursing higher than normal levels of occupational violence over the last 20 months. This comes off the back of unacceptably high levels; in 2019, up to 10% of nurses reported they had been either physically assaulted, verbally abused and/or subject to sexual innuendo, abuse or threats[2].

Harassment and intimidation of nurses in the workforce has become so regular that, in some workplaces, it is considered 'just part of the job'. When I was establishing myself as a nurse, I also experienced harassment and violence, but we didn't have the language or understanding to know we didn't have to tolerate it. This outdated and damaging mentality of workplace culture needs to end, and it is the reason I am championing as loudly as I can in my role.

As a predominately female workforce[3] (90%), the issues of sexual assault against women echo loudly through our profession, as society grapples with the impacts of the Me Too movement, the Brittany Higgins case and even the Women's Safety Summit hosted recently by the federal government. For nurses, the

Kylie Ward has served as the CEO of Australian College of Nursing (ACN) since 2015. Over that time, ACN has grown to become Australia's beacon for Nurse Leadership.

Ward has led an extensive program of works including establishing the ACN Foundation, launched Nurse Strong and has been instrumental in numerous key national policy campaigns which support greater access and equity for all. She holds honorary academic appointments with five Australian universities, was ministerially appointed to ADHA and NHMRC Health Translation Advisory Committee, won Telstra Businesswoman of the Year in ACT for Purpose and Social Enterprise in 2017 and in 2020, was named as one of the Top 100 Health Voices for LinkedIn worldwide.

topic of domestic and family violence as well as occupational violence is front of mind.

From a professional perspective, the high rates of abuse sustained by the nursing profession have deep, lasting impacts and many members of the Australian College of Nursing report symptoms of trauma, post-traumatic stress syndrome and vicarious trauma. In January 2021, the World Health Organisation confirmed the 'mass trauma' of healthcare workers, which was highlighted by the International College of Nursing (ICN)[4].

This needs to change. Today.

The pressure on the nursing profession is mounting on a day-to-day level, when nurses are required to isolate from their family and friends after being exposed to COVID-19 at work.

Nurses have informed me, in some sectors, they get paid for the first three days of that isolation in the public health system; however, if they acquire the virus, they are expected to take sick leave for the remainder of their recovery. Many nurses are not permanent or full-time staff, rather casual, part-time or working as agency nurses, who are often not entitled to sick leave. This vulnerable group of workers — most often women — is left without a means to earn an income, after virus exposure.

The regular absences of clinical staff in client-facing health environments means teams are short-staffed, or managers, clinical nurse consultants and nurse educators — all vital for the coordination, oversight and safety of health systems — are pulled off their work and asked to be clinically facing. This leaves these nursing experts to work extensive hours each day, as there is no back fill for their roles.

Nurses are turning away from the profession as a result.

In March 2021, the International College of Nursing (ICN) conducted global research in nurse shortages one year on from the World Health Organisation (WHO) declaring COVID-19 a pandemic. They reported that nearly one in five of the National Nursing Associations surveyed reported an increase in the number of nurses leaving the profession, and 90% of them are "somewhat or extremely concerned" that heavy workloads, insufficient resources, burnout and stress are the factors that are driving that exodus.[5]

The 2020 Aged Care Workforce Census reported that 29% of their direct care workforce had left their employment over the 12 months from November 2019 to November 2020[6] and there were almost 10,000 vacant roles in aged care alone. That was before the current extended lockdowns both Victoria and New South Wales are experiencing.

Whilst the issues are challenging, there are strategies that can be put into place to ease the pressure, to support nurses and nursing care in Australia.

The ICN reports: The world entered the pandemic with a shortfall of up to six million nurses and an additional four million expected to retire by 2030, which puts the global nursing workforce under an intolerable strain. ICN says large numbers of experienced nurses are leaving the profession or considering calling time after the pandemic, which should be a wake-up call for governments to invest in nursing jobs, education, and leadership before it is too late[7].

Whilst the issues are challenging, there are strategies that can be put into place to ease the pressure, to support nurses and nursing care in Australia.

Firstly, we need to immediately support the graduating class of 2021. Right now, thousands of third-year nursing students are at risk of being ineligible to graduate this year as they are struggling to obtain clinical placement hours required of their three-year tertiary degrees due to disruptions to the healthcare system. It is estimated almost 20,000 nurses across Australia are due to graduate, in their final semester. This workforce will make a tremendous contribution, with adequate support, to all healthcare sectors. Governments and employers should be working to secure employment for all graduating nurses to provide a pipeline for workforce planning for 2022 and beyond.

We need additional funding for refresher courses for retired Registered Nurses and Enrolled Nurses, as well as non-clinical active Registered Nurses, so they can supplement the

workforce across Australia. This needs to be coupled with job certainty and tangible benefits to them for coming back into the workforce[8].

The Australian College of Nursing has always championed overseas trained eligible Registered Nurses provided with Right to Work VISAs in Australia. Skilled nursing migration enhances opportunity, diversity and care delivery to those living in Australia, and nursing has long been considered a profession that can take you around the world.

Support and relief must be given to the Executive Directors, Directors of Nursing, and other senior workforce executives who are dealing with tired, burnt out and exhausted staff — they must be given the support and resources they need to manage their teams, and patients. The complete transformation of health systems to deal with the impacts of COVID-19 have largely landed on their shoulders, and they need practical support, people, funds and the go-ahead to overcome policies and procedures not suited to the current challenges.

Funding models are outdated and exclude Mental Health Nurses, Nurse Practitioners and Registered Nurses from accessing Medicare numbers in order to be paid for the work they do. This is having the greatest impact in rural and remote Australia, where community healthcare systems are often staffed by nurses who cover enormous areas. Your postcode should not determine your health outcomes in the 21st century, but in Australia it does.

The Australian College of Nursing (ACN) is a for-purpose organisation working to make real and lasting change for the profession, by helping to shape health care by advancing nursing. ACN works across the entire nursing profession — members and non-members — empowering and supporting professional career growth and inspiring leadership journeys and are shaped by their contributions and learnings. They continue to spearhead the advancing of the nursing profession in partnership with all levels of government, the business community, health systems and community.

We recommend a national summit to be sponsored by the federal government in collaboration with the Australian College of Nursing which is representative of all the healthcare systems — including aged care and disability — so a national action plan for a sustainable and supported nursing workforce can be established, prioritised and actioned — in light of the pending crisis.

Finally, and most urgently, we ask all Australians to please consider the way fear, frustration and stress is expressed in clinical, aged care and community settings, for this is having a major and lasting impact on the emotional and mental health of Australian nurses. We thank and acknowledge those of you who are patient, express kindness and gratitude, it means so much. We are, and have always been, the caring profession so we appreciate what toll COVID-19 is taking on people, but harassment, violence and intimidation of nurses and women in our society and workplaces will never be okay.

1. http://www.roymorgan.com/findings/8691-image-of-professions-2021-april-2021-202104260655
2. https://www.stuff.co.nz/national/health/121473761/nurses-added-to-proposed-law-which-imposes-minimum-prison-sentences-for-assaults-against-healthcare-workers
3. 86% of Aged Care Nurses are female: https://www.theweeklysource.com.au/almost-10000-vacant-roles-and-37-np-and-rn-turnover-in-just-12-months-2020-aged-care-workforce-census/ and 89% of Australian nurses are female: Australian Government Job Outlook, "Registered Nurses", www.joboutlook.gov.au.
4. https://www.icn.ch/news/covid-19-pandemic-one-year-icn-warns-exodus-experienced-nurses-compounding-current-shortages
5. https://www.icn.ch/news/covid-19-pandemic-one-year-icn-warns-exodus-experienced-nurses-compounding-current-shortages
6. https://www.health.gov.au/resources/publications/2020-aged-care-workforce-census
7. https://www.icn.ch/news/covid-19-pandemic-one-year-icn-warns-exodus-experienced-nurses-compounding-current-shortages
8. In 2020, the Australian College of Nursing secured federal government funding to deliver 3,000 refresher courses to non-clinical RN. The Australian College of Nursing invested an additional $500,000 to extend the refresher course to Enrolled Nurses.

Featured Products

Keep up with the latest industry innovations

Aged-care flooring products

Tarkett's Powerbond Garden Walk Collection is a flooring solution designed for aged-care facilities.

With an impervious backing, Powerbond looks and feels like carpet, but works like vinyl, protecting the slab from moisture penetration, and preventing offensive odours and moisture build-up, a common frustration for aged-care facilities. The product's chemically welded seams create a wall-to-wall moisture barrier that allows leaks and spills to be easily extracted without reaching the substrate.

The flooring provides the warmth and comfort of relaxed living, creating a setting for healing, lifestyle and leisure. This warm array of colour and pattern gently alludes to organic materials from the outdoor environment and embraces the imperfect beauty of the natural world. Each sophisticated design carries deep, soothing tones that create a tranquil atmosphere and lends itself to feelings of wellbeing.

Tarkett Australia Pty Ltd
www.tarkett.com.au

Energy-saving air filters

Opakfil ES is part of Camfil's Energy Saver filter range, designed for optimal energy-efficient air distribution, resulting in longer filter life and a lower total cost of ownership (TCO) for facilities. The high-performance filter requires less frequent replacement, with lower resistance operation resulting in reduced fan horsepower and energy consumption.

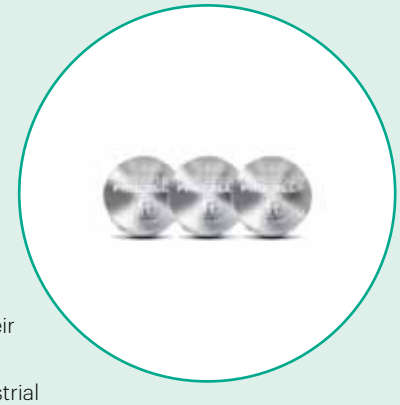
Designed to provide high-efficiency filtration to target PM1 particles, Camfil Opakfil ES filters remove airborne contaminants such as smoke, bacteria, fumes, fungi and virus-bearing droplet nuclei; and are designed for use as a premium-grade secondary filter within the fresh air intakes of hospital and healthcare facilities.

The filters are suitable for use in humid and tropical and coastal areas, with effective operation in 100% humidity and temperatures up to 70°C.

Camfil Opakfil ES filters are available in M6, F7, F8 and F9 efficiencies to EN 779. Certain models are also offered with ProSafe certification for pharmaceutical processing and life science industries.

Camfil Australia Pty Ltd
www.camfil.com.au

Lithium coin batteries



Procell Lithium Coin cell batteries are designed for compact professional electronic devices and aim to minimise the time and costs spent on battery replacements, so that doctors, nurses and staff can focus on their patients.

Procell Lithium Coin industrial batteries are designed to deliver reliable power in professional devices. Available in 2032, 2025 and 2016 sizes, the batteries have a high energy density with a flat and low self-discharge. The design, safety, manufacturing and qualification of the batteries follow Procell's stringent battery standards, which incorporate parts of the ANSI and IEC battery standards.

The batteries come in child-secure packaging, with a double-blister, tamper-proof pack that cannot be opened without scissors.

Procell
www.procell.com

Duress alarms

MePACS Duress alarms utilise 4G mobile technology to help lone workers feel safer and have the confidence to get on with their job.

MePACS offers a 24/7 fast response emergency alarm service, which is ideal for lone workers and people who work in the community, at night, or who are isolated. Trained professionals respond to the fully monitored service, providing assurance that when assistance is required, help is despatched quickly.

In the event of an accident, violence, assault, fire or medical emergency, staff can signal for help with the press of a button. MePACS' response team will answer within two minutes, assess the situation and call for whatever help is needed most — whether it is a manager, security team or emergency services.

MePacs
www.mepacs.com.au

Microdial Flowmeter
A smoother transition to room air

Working in partnership with neonatologists, BPR Medical has designed a special range of Microdial flowmeters that provide Neonatal ICU and Special Care Baby Units with the precision and control needed to effectively treat premature babies with medical oxygen.

Innovation in the treatment of oxygen dependency in infants

Premature babies with Respiratory Distress Syndrome (RDS), may receive mechanical ventilation as a lifesaving intervention. This ventilation can cause damage to the lungs, leading to a chronic lung disease, often referred to as bronchopulmonary dysplasia (BPD). An infant with BPD will often need to be weaned off oxygen over several weeks or months — with the level of effectiveness depending on the controlled gradual reduction in levels of "fraction of inspired oxygen" (FiO_2).

To enable controlled adjustments of FiO_2 levels, BPR Microdial flowmeters feature a Microflow™ dial control that enables precise and reversible mini step changes in the oxygen flow. This dial technology delivers oxygen flow rates in gradual steps of as little as 10 cc per minute (Table 1).

Microdial flowmeters are available in two models; a paediatric version with flow rates of 0–3 lpm and a neonatal version with flow rates of 0–1 lpm. These two models allow minute changes of FiO_2 levels, facilitating a smoother transition to room air. (Table 2).

With advanced technologies, Microdial flowmeters ensure reliability and superior performance. A built in pressure regulator ensures the oxygen flow remains consistent, irrespective of varying supply pressure. Furthermore, gas quality is assured by a dual filtration system which includes a 40 micron pre-filter and a 5 micron internal filter.

TABLE 1: Nominal flow rates (lpm) per Microdial selector setting

Flow Rates Neonatal 0–1 lpm	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	1.0
Flow Rates Paediatric 0–3 lpm	0.02	0.03	0.05	0.08	0.12	0.20	0.30	0.50	0.75	1.0	3.0

Notes: Tolerances on delivered flow rate are +/- 15% for setting below 1 litre per minute and +/-10% for 1 l/min and above.

TABLE 2*: Estimated FiO_2 levels associated with flowmeter flow settings against patient weight (neonatal model)

Weight (kg)	1	0.1	0.09	0.08	0.07	0.06	0.05	0.04	0.03	0.02	0.01	Flow rates (lpm)
0.7	100.0%	32.2%	31.1%	30.0%	28.9%	27.7%	26.6%	25.5%	24.4%	23.3%	22.1%	FiO_2 levels
1	100.0%	28.9%	28.1%	27.3%	26.5%	25.7%	25.0%	24.2%	23.4%	22.6%	21.8%	
1.25	84.2%	27.1%	26.5%	25.9%	25.3%	24.6%	24.0%	23.4%	22.8%	22.2%	21.6%	
1.5	73.9%	26.3%	25.8%	25.2%	24.7%	24.2%	23.6%	23.1%	22.6%	22.1%	21.5%	
2	60.5%	25.0%	24.6%	24.2%	23.8%	23.4%	23.0%	22.6%	22.2%	21.8%	21.4%	
2.5	52.6%	24.2%	23.8%	23.5%	23.2%	22.9%	22.6%	22.3%	21.9%	21.6%	21.3%	
3	47.1%	23.6%	23.3%	23.1%	22.8%	22.6%	22.3%	22.0%	21.8%	21.5%	21.3%	
3.5	43.9%	23.3%	23.1%	22.8%	22.6%	22.4%	22.1%	21.9%	21.7%	21.5%	21.2%	
4	40.8%	23.0%	22.8%	22.6%	22.4%	22.2%	22.0%	21.8%	21.6%	21.4%	21.2%	

*Notes: 1 Adapted from Benaron DA & Benitz WE, Maximizing the Stability of Oxygen Delivered Via Nasal Cannula, Arch. Pediatr. Adolesc Med 148: 294–300, March 1994; 2 Assumes inspiratory time of 0.3 seconds; 3 Assumes tidal volume 5 ml/kg; 4 Assumes all nasal cannula output inhaled ; 5 This information is provided to demonstrate possible applications for Microdial Flowmeters. It is not provided for clinical use and should not be relied upon for such purposes.

A Day in the Life of **Registered Nurse Eloise Forster**

Registered Nurse Eloise Forster shares her day at the Sandringham Hospital Emergency Room.

05:30: I'm woken by my trusty Google Mini for a shower, breakfast and alone time with my coffee before my household wakes up. This is an important ritual for me as I set some personal intentions for my day ahead and it prepares me for the day. You never know what the day will bring in Emergency.

06:30: I leave for work. I have my scrubs, sneakers and 'Nursing Bag' by the door ready to leave.

07:00: Handover begins. We discuss the latest updates and achievements in relation to the department. We touch on difficult situations that may have occurred on shift and then it's open forum for questions before we head to our allocations.

08:30–08:45: It's time for a break for a much-needed coffee and a nibble. We are big on breaks and all staff must take their breaks, so we don't risk nurse burnout.

05:30 | 06:30 | 06:40 | 07:00 | 07:10 | 07:30 | 08:30

06:40: Arriving at work, I change into scrubs, peruse the board to see where my allocation will be for the day and head to the tearoom. Our tearoom is full of laughs, warm greetings and loud conversations. We are a tight-knit team who pride ourselves on being friendly, open and welcoming. We love it when we have new 'gradlings' (graduates) starting!

It's important we provide a culture that nourishes growth and learning as no-one learns in an environment that is hostile and unfriendly. We are a teaching hospital, and welcome new faces enthusiastically.

07:10: Patient handover begins and, once completed, we do our safety checks in cubicles and replace any equipment that may have been used overnight. This is imperative as you don't want to be caught in a resus situation without functioning suction, O_2 or any other life-saving devices.

Drug Count is done and, once completed with no discrepancies, night staff can go home to sleep.

07:30: Night staff leave, and the day begins. I start by looking over patients' notes and then look over the cubicle and do a discreet visual assessment. Are any patients pale, diaphoretic or do they have a dusky look? Sometimes people are trying to be well so they can go home and at times the best place for them is in hospital. No-one is pulling the wool over my eyes!

I go into each cubicle and introduce myself. People are either happy to see me or they are hangry (hungry/angry) due to fasting for a procedure or scan. It can go either way, so I brace myself for both and duck for cover (joke).

I then perform my own set of observations, check patients' pain scores and med charts, then make them as comfortable as possible.

08:45–12:30: There are no two days the same. Multiple patients have come and gone from cubicles. Some patients are in isolation for (S)COVID (suspected COVID) or gastro. Already I have collared two patients involved in MVAs [motor vehicle accidents]; performed multiple ECGs, IV cannulas and bloods; and administered general medication, pain relief and IV antibiotics.

Then onto three wound dressings, COVID swabs requiring me to gown up and gown down at least six times, toileted three patients, did multiple bed cleans and handed over patients to other departments, Ambulance Victoria and National Patient Transport.

Several discharges have occurred, which means the removal of IV cannulas, performing discharge observations and most importantly, educating patients on current symptoms or injuries and how to recognise the signs of deterioration that may need further investigation back in ED.

All throughout this time I communicate constantly with the resource nurse and make written notes about each patient. If it's not documented, it didn't get done.

13:10: Patients are handed over to the afternoon staff. I attend education activities and my team member has their lunch break.

13:40: I return to the floor and alleviate the afternoon staff for their first break. During this time I continue to care for my patients and assist my team members until the morning shift is over.

08:45 · 12:30 · 13:00 · 13:10 · 13:40 · 15:30

12:30: Lunch. Everything is fast — we eat fast, we talk fast and then have a quick cuppa. No wonder I get indigestion! We use this time to catch up, laugh and decompress. It's not all fun and games, sometimes we're teary, overwhelmed and need to debrief. We are an affectionate lot so when someone needs a hug, it's very hard when we must refrain due to COVID, so we find a way to support from afar. This is a big adjustment for us all. The beauty is we laugh and cry as a team, so therefore we consider each other 'work family'.

13:00: The afternoon staff arrive and attend handover. Everyone breathes a sigh of relief for the extra set of hands required. We are in double staff time now.

15:30: I get changed into casual wear, keeping my scrubs and shoes in a separate bag. I then jump in my car and head to the ocean for my cold-water immersion, rain, hail or shine.

Then, it's time to attend to my family! Phew!

A Day in the Life is a regular column opening the door into the life of a person working in their field of health care. If you would like to share a day in your working life, please write to: **hh@wfmedia.com.au**.

Integrated Design for Improved Infection Control

Ergotron was built on a desire to produce solutions that support the health and wellbeing of the individual and our vision is to be the world leader in improving how people work, learn, play and care for others.

Harry Sweere, the founder of Ergotron, designed computer workstations based on ergonomic principles and scientific anthropometric data for more than 20 years.

Harry's legacy of innovation and commitment to ergonomics lives on in Ergotron's mission of moving people forward with solutions that remove constraints for workers to thrive.

The commitment to health and efficient workspaces has driven Ergotron to be leaders in the field of designing solutions to enhance wellness and assist to create workspaces based on human centered design principles.

Why Design, Durability and Disinfectability are important

Within the Ergotron architecture all components have been considered and infection control is integrated into the very design and selection of materials for their disinfectability and durability. Effective infection prevention and control is central to providing high quality healthcare for patients and a safe working environment for those who work in healthcare settings.

Disinfectability of materials is essential to the ability of withstanding harsh chemicals and technology necessary to kill pathogens in healthcare settings.

The surfaces of the Ergotron Styleview range of medical workstations on wheels are treated with an antimicrobial finish, antimicrobial finishes and materials are simple to sanitise or are naturally germ resistant making it easier to maintain the high levels of cleanliness crucial in a healthcare environment.

Practically all hospital grade cleaning solutions can be used on all plastic and metal surfaces including quaternary ammonia compounds, ammonia enzyme cleaners, hydrogen peroxide bleach and alcohol solutions without surface damage.

The materials used in production are an important consideration as durability is key to preventing cracks, chips and flaws allowing dirt to accumulate making the surfaces difficult to clean.

All materials used in the Ergotron range are composed of aluminum, high grade plastic and zinc plated steel to support infection control. The unique cable management system conceals and organizes cords making cleaning easy and adds another layer to Ergotron's commitment to products designed to meet the intense requirements of healthcare settings.

While the design, durability and disinfectability have all been considered, infection control administrators or epidemiologists should always be consulted for all cleaning procedures and processes.

For patient and caregiver safety the entire power system, in addition to the full cart are certified to UL/EN/IEC 60601-1 and CAN/CSA C22.2 No.601.1 M90. Also complies with EMI limits of FCC Part 15 Class A.

From the very first design when computers were a rarity in the workspace to today, where technology is integrated into virtually every aspect of the daily work environment, Ergotron has remained committed to the designing and creation of solutions that are fit for purpose.

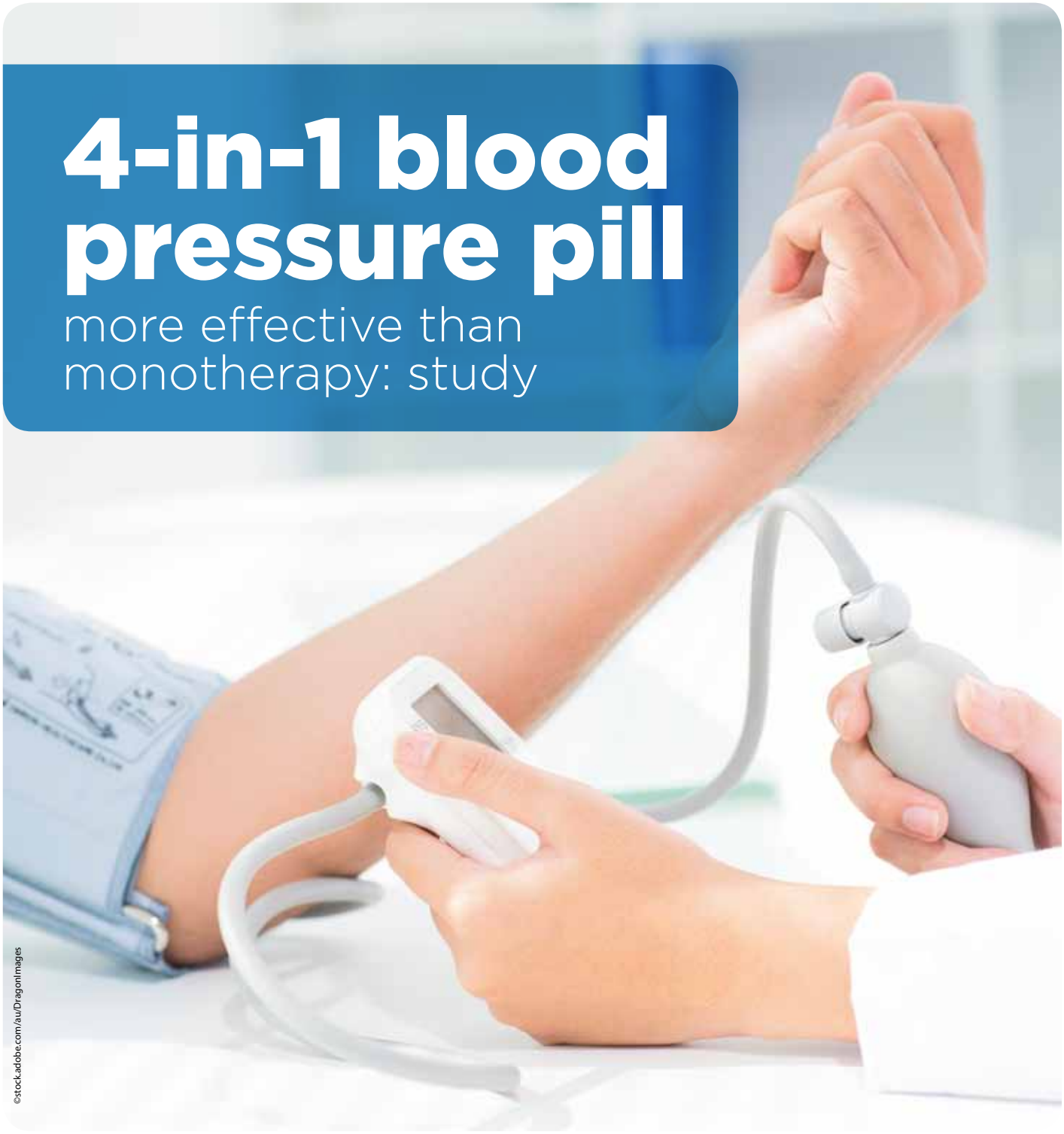
For more information visit www.ergotron.com or call 0403 986 442.

ergotron HEALTHCARE

» For more information visit **www.ergotron.com**

4-in-1 blood pressure pill

more effective than monotherapy: study



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The first large-scale, long-term trial of a new strategy using combinations of very low doses in one capsule has demonstrated significantly improved control of high blood pressure — the leading cause of heart attack and stroke.

A new strategy where patients are started on a pill containing four medicines, each at a quarter of their usual doses, has been shown to be much more effective in getting blood pressure under control, compared to the common practice of monotherapy, where treatment commences with just one drug.

This first large-scale, randomised controlled clinical trial of starting this novel combination blood pressure medication brought blood pressure under control in 80% of participants in 12 weeks, compared to 60% in the control group who nonetheless had access to the best patient care.

Traditionally doctors have started with one drug and then follow up to consider adding or changing treatment — but this strategy is often not successful in practice and blood pressure control rates have remained stubbornly low for decades.

The results of the Australian study published in *The Lancet* and are being presented at the world-leading European Society of Cardiology conference, ESC Congress 2021.

Professor Clara Chow, lead and corresponding author and Director of the University of Sydney's Westmead Applied Research Centre, said in a separate Comment in *The Lancet* this week that control of high blood pressure, known as hypertension, was not ideal anywhere, and in some regions such as Africa, fewer than one in 10 had hypertension under control.

"Statistics on the global burden of high blood pressure this week show that there's been a doubling in the past 30 years of hypertension cases — the leading cause of the world's top killer: heart attack and stroke," Professor Chow said.

Dr Emily Atkins from The George Institute for Global Health*, UNSW Sydney and the University of Sydney said, "In settings with high levels of specialist care and full access to a range of existing blood pressure medicines — like the centres in this trial — the improved reduction in blood pressure with this strategy would be expected to reduce the risk of heart attacks and strokes by about 20%. In settings with little or no existing hypertension treatment, the benefits would be much greater."

The multi-centre, Australian clinical trial of a potential future 'quadpill' dose of four medications, termed Quadruple UltrA-low-dose tReatment for hypErTension (QUARTET), has demonstrated that a single pill containing ultra-low quadruple combination is much more effective than the traditional approach of starting with monotherapy.

The study funded by the National Health and Medical Research Council enrolled 591 participants with high blood pressure either in no treatment or single therapy across 10 centres in Australia. The primary outcome was the significantly reduced blood pressure in the group starting on the quadpill, at 12 weeks. These differences were sustained, with blood pressure control still better with the quadpill approach compared to the standard approach at 12 months, and no differences in side effects.

Senior author Professor Anthony Rodgers of The George Institute, UNSW Sydney and Imperial College London, said, "Our trial has overwhelmingly demonstrated the efficacy, tolerability and safety of this ultra-low-dose combination strategy — a potentially simple and scalable hypertension management strategy to treat hypertension."

Professor Chow said the study built on their previous study comparing a quadpill approach to placebo. "We aimed to test this new quadpill strategy against usual care in Australia; as is often seen in clinical trials, people in the comparison group got much better treatment than average. Nonetheless our new quadpill strategy was much better," she said.

"This was the first study to show the benefits are maintained long term without any reduction over time. Even though much more add-on blood pressure medicines were used in the comparison group throughout follow-up, they never caught up with the quadpill group."

Changing global practice

Professor Chow said there were still important research questions. "For people who may be having side effects from their current treatments, we would like to know whether a switch to an ultra-low-dose combination can improve things.

"Also, the WHO Hypertension Guidelines released this week, just like other recent hypertension guidelines in Europe, US and elsewhere, recommend most patients start on two blood pressure drugs rather than one. We need to know how that would compare to a quadpill strategy."

There is also a major research translation challenge ahead: "These kinds of strategies will only make a major impact on global health if they are available and affordable for patients most in need," Professor Chow said.

"When we find treatments that are this effective, simple and safe we must do our best to get them to those who can benefit most."

Professor Chow said a simple and effective combination quadpill strategy had potential to impact people's lives worldwide. "High blood pressure is the leading cause of preventable deaths globally — we hope our world-leading findings will be translated swiftly into a product available for the general public," she concluded.

The *Lancet* paper was led by the University of Sydney's Westmead Applied Research Centre (WARC) in the Faculty of Medicine and Health, with co-authors including The George Institute for Global Health, UNSW Sydney and Imperial College London; University of Western Australia; University of Tasmania; Western Sydney University, UTS Sydney, Monash University and Curtin University.

**The George Institute for Global Health has submitted patent applications in respect of low fixed-dose combination products for the treatment of cardiovascular or cardiometabolic disease, with Professor Rodgers and Professor Chow listed as inventors. Professor Rodgers is employed by The George Institute and seconded part-time to George Medicines. George Health Enterprises (GHE) and its subsidiary, GM, have received investment funds to develop fixed-dose combination products, including combinations of blood pressure-lowering drugs. GHE is the social enterprise arm of TGI. Professor Rodgers and Professor Chow do not have direct financial interests in these patent applications or investments.*

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The first and last lines of defence in the fight against the spread of infection

We want to recognise our front line — all of our hard working nurses, doctors, emergency services, and the admin staff that support them. They are a group of amazing people. Their tireless work, not only in these difficult times but always, is to be appreciated and celebrated.

We also want to recognise the people that represent our first and last lines of defence in the fight against infection.

The people that have ensured a safe environment before you arrive, the ones that stay with you as you go about your day and the ones who come after you leave to start it all again.

These people are made up of the front line, nurses and emergency service workers who clean as they go, making sure that our environments are kept safe.

The lines are also made up of the people in the ever growing number of cleaning services which have now become such an important part of our daily lives.

We want to also celebrate this group of people and organisations that can make a huge difference to our safety.

Medclean Pty Ltd is one of these organisations. Led by managing director Michael Miljkovic, Medclean have been specialising in cleaning and laundry services for the aged care sector for over 20 years.

They are passionate about enriching the lives of the residents they serve and have earned respect for their work ethic and common sense approach to cleaning and disinfection to achieve the best results for their clients.

They are recognised for their experience and wealth of knowledge in their field. They are members of the Leading Age Services Australia (LASA) and the Australian Cleaning Contractors' Alliance (ACCA) and believe in building strong and long-lasting working relationships. By implementing best-practice systems used throughout their organisation they provide excellent results with a dedication to customer service.

Their unique approach provides a complete solution to their clients and is what makes Medclean one of the organisations that stand out. They believe that providing the best results is a combination of using the right products with the right methodology in tandem.

This has led to them working in facilities that have sadly been impacted by the pandemic to help and in some cases, in just over 24 hours, they have brought an end to the spread of infection and stopped further loss or impact to precious lives.

Medclean have been using S-7XTRA products for 6 years and they believe it is part of the reason for their success.

Recently, Daniel Tola, State Manager for Medclean had this to say about S-7XTRA and Anaeron:

Medclean is a provider of cleaning and laundry services specifically to the aged care industry.

As such, we are very selective in the products we use to clean and sanitise our clients' facilities.

I have no hesitation in recommending S-7Xtra as an excellent product.

Manufactured in a TGA certified Australian based plant, S-7Xtra has undergone rigorous testing in order to qualify for TGA certification (with claims).

Medclean has been using this product for some 6 years, in all its forms:
1. as a bio-misting agent
2. hand sanitiser
3. surface wipes
4. cleaning agent

In all its uses, S-7Xtra has consistently performed exceptionally well; living up to, if not exceeding, all expectations. In a world which has recently been flooded with new products making sometimes extraordinary claims regarding their capabilities, we choose to continue using and recommending S-7Xtra. This is our product of choice and the one we trust to meet our high expectations.

Its TGA certified Reactive Barrier Technology makes this product invaluable in the fight against not just Cov19, but any pathogen found in the environment.

The support we receive from the staff at Anaeron is second to none. They are very knowledgeable in their field, professional and ethical. They are always available to provide assistance and advice to their clients.

We are very pleased and proud to be able to partner with them.

Anaeron has been proud to partner with Medclean among a number of similar organisations who provide high quality services.

S-7XTRA is proudly made in Australia bringing peace of mind and simplifying your training and cleaning protocols — helping the first line, the last line and the front line in the fight against the spread of infection.

Contact us for more information or a trial.

anaeron Pty Ltd

» For more information phone us on **1300 936 044** or visit **www.anaeron.com.au**.

Image courtesy of My Emergency Doctor

Relief for the frontline

COVID-19 has had a profound impact on Australia's healthcare workers. While two-thirds of Australians have been working from home since the beginning of the pandemic, a large number of healthcare workers have been putting themselves at risk on the frontline, working extended hours and taking on a greater workload, to ensure health and safety of all of us. Many have been experiencing exhaustion and burnout.

A recent survey of frontline healthcare staff by Edith Cowan University found that during Australia's first COVID-19 wave, workers wrestled with their obligation to work and the risk of infecting themselves and their families, with 42% less willing to work than they had been prior to the outbreak.

A service founded by a Sydney-based emergency physician, Dr Justin Bowra, can support hospital and healthcare services in offering a much-needed respite to their workers. Driven by his first-hand experience as a Senior Emergency Specialist in a busy emergency department, Dr Bowra wanted to create a service which would provide access to emergency specialist doctors to Australians, no matter where they lived. In 2016, he established My Emergency Doctor, a telemedicine service that connects Australians with a team of emergency specialist doctors via a phone or video call.

The service, which started with a small group of emergency specialists operating on a rotating call roster to support patients who needed on-demand emergency services, provides hospitals and healthcare services a complementary model of care in improving patient flow. It also supports onsite clinicians during surge in patient loads and enhances patient experience and health outcomes.

"It has been a busy, long year with COVID-19. Many clinicians will be wanting to take some time off in the lead-up to Christmas/the New Year and the school holiday break. We can work alongside hospitals and healthcare services to manage the ups and downs of capacity in an emergency department (ED) and support these providers in offering relief to their staff after what has been a tumultuous year," said Bill Maiden CEO, My Emergency Doctor.

The service currently employs over 90 senior emergency physicians, Fellows of the Australasian College for Emergency Medicine (FACEM), some of whom are still actively heading major emergency departments across Australia. These emergency specialists are deployed to support ambulance services, hospitals, primary health network, residential aged-care facilities, urgent care centres and multipurpose service centres.

"This can involve providing relief for doctor's on duty, so they can actually get some sleep at night, through to secondary triage for ambulance services, to supporting onsite clinicians across the full spectrum of low acuity cases through to Category 1 to 2 triaged cases – which is where facilities are really making use of 'telehealth and virtual care' and taking it to the next level," Maiden said.

The group claims to be one of the largest employers of Australian qualified emergency specialist doctors (FACEMs), and has undertaken over 75,000 consultations since its launch, with over 70% of the consultations managed in situ, meaning patients were treated without the need to necessarily require an ambulance call-out or present themselves to the ED, thereby freeing up much needed hospital resources to care for the sickest of patients.

Whilst the pandemic has accelerated the adoption of telehealth and virtual care services overall, it has also further created additional load on healthcare systems where it is timely for those managing patient demands and staffing capacity forecasts to investigate ways now in which they can easily scale up their workforce when needed to ensure patient care remain paramount, Maiden said.

"Technology has transformed emergency care, and we are also seeing some incredible innovative application of telehealth technology sit in areas that was probably once considered impossible," he said.

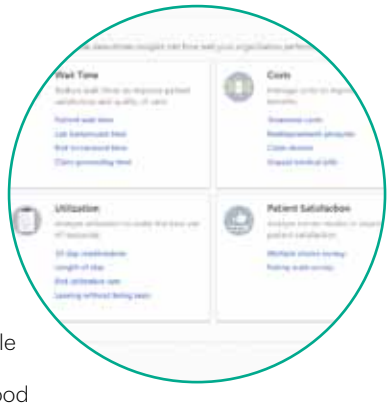
"Telehealth has always traditionally been seen as an alternative for general practice (GP) consultations; however, the application of telehealth for emergency medicine has really gained ground. Not only has it gained ground, but we have been in the midst of seeing how successfully it can be deployed as a complementary model of care to support our hospitals and healthcare services in Australia," Maiden concluded.

"We can work alongside hospitals and healthcare services to manage the ups and downs of capacity in an emergency department (ED) and support these providers in offering relief to their staff."

Bill Maiden, Chief Executive Officer, My Emergency Doctor

Featured Products

Statistical analysis software



Minitab Statistical Software Healthcare Module helps healthcare organisations improve quality of care, provide safety and achieve cost savings using data analysis and smart process management.

Created with healthcare professionals in mind, the module provides guided data analysis in commonly used and understood healthcare terms. It allows uses to shift their focus on improving key performance indicators (KPIs) like wait time, costs, utilisation, patient safety and patient satisfaction without worrying about which analysis to use.

Information icons connect users to support pages written in healthcare terminology with specific healthcare examples, while the company's technical support team is available via phone or email to help as needed.

Minitab Pty Ltd
www.minitab.com.au

Alkaline batteries

Procell Alkaline Intense Power Batteries are engineered for long-lasting performance in high-drain professional devices. The batteries help to minimise the time and costs spent on battery replacements, so that doctors, nurses and staff can focus on their patients.

Procell Alkaline Intense Power batteries are specifically designed to last longer than previous Procell Alkaline batteries in high-drain professional devices that require a high amount of power or peaks of power, such as infusion pumps, oxygen pumps, syringe pumps and hand sanitisers. The batteries are available in AA, AAA, C, D and 9 V sizes.

Procell
www.procell.com

Featured Products

Home office microphone

Shure's MV5C Home Office Microphone is designed for professionals to use at home and in the office.

Compatible with third-party software conferencing platforms including Zoom and Microsoft Teams, the device is plugged in with the supplied cables to a Mac or Windows computer so that users can join virtual meetings with the confidence that they sound just as good remotely as they do face to face.

The Shure MV5C is compact, versatile and designed for medical professionals who require a reliable microphone for remote telehealth appointments and other important conversations. The MV5C can be used with or without headphones.

Jands Pty Ltd
www.jands.com.au

Ultraclean ventilation systems

Camfil Airepure FOCUS ultraclean ventilation (UCV) systems cater to a range of operating theatre requirements; from day surgeries and surgical rooms with less demanding airflow requirements through to orthopaedic and neuro-operating theatres where deep-wound surgery is carried out and there is a high risk of hospital-acquired infection via airborne routes.

Due to extensive design research, CFD modelling and refinement over 20 years of installations in Australian hospitals, FOCUS unidirectional and UCV systems are claimed to provide superior air quality at the operating theatre table level compared with the conventional arrangement of individual terminal ceiling mounted HEPA filters.

FOCUS systems comply with the local Australian Council on Health Care Standards (ACHS) guidelines for air flow and velocity at the operating table level and international standards nominated in UK HTM-03 and European standard ISO/DIN 1946-4 (2008-12).

Each Camfil Airepure FOCUS is custom designed to suit the specific requirements of each client, with available options including gel or gasket seal HEPA filtration, integrated return air and perimeter lighting; and low-profile, hybrid or bulkhead-style configurations.

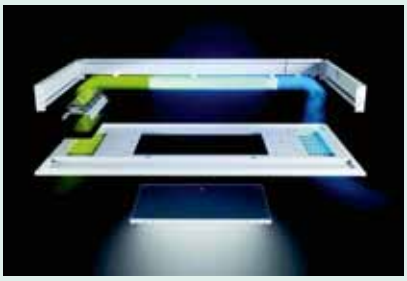
Camfil Airepure can support and service clients through the entire process from system design to installation as well as after sales service, NATA accredited testing and maintenance.

Camfil Australia Pty Ltd
www.camfil.com.au

Featured Products

UV-C air treatment system

Hospital Products Australia (HPA) has introduced the UV Angel Clean Air system to Australia and New Zealand for use in health care, aged care and workspaces. UV Angel Clean Air is a UV-C air treatment system that reduces levels of viruses, bacteria and fungi by automatically and continuously treating the air to create healthier environments. It is unobtrusive and designed to fit in with any facility's architectural and clinical considerations and operates 24/7/365 without interruption.



The UV-C light in the Clean Air system has a comparatively short wavelength, suitable for penetrating microbial protective barriers, disrupting their delicate DNA/RNA structures and effectively neutralising affected pathogens including gram-negative and gram-positive bacteria, fungal pathogens and viral surrogates. The UV Angel Clean Air laboratory results show elimination rates up to 99.99%.

The product quietly and continuously draws air from the room into a sealed UV-C treatment chamber where high-intensity UV-C light is used to neutralise airborne pathogens. The treated air is returned to the room, creating a safer environment. IoT connectivity allows control and integration into a facility's technology stack.

Hospital Products Australia
www.hpaust.com

Defibrillator

The ZOLL R Series monitor/defibrillator uses Real CPR Help technology to provide audio and visual feedback that guides rescuers to consistently deliver high-quality CPR. If compressions aren't deep enough, the device says, "Push harder". Detailed visual feedback, including the rate and depth of each compression, is displayed on the CPR Dashboard.

One of the most common reasons for interruptions in CPR is stopping to determine whether an organised, shockable rhythm has developed. With ZOLL's patented See-Thru CPR technology, the compression artifact is filtered out, making it possible to see whether an organised rhythm is present during CPR.

The R Series is claimed to be the first device to provide a paediatric electrode with a built-in CPR sensor. The CPR Dashboard reports the actual depth and rate of compressions delivered.

After a cardiac arrest, the R Series supports continuous quality improvement (CQI) initiatives with the push of two buttons, sending the code data to a designated server. This comprehensive data includes the number of shocks, ECG, end-tidal CO_2 values and CPR quality, which can be viewed using a number of ZOLL software solutions.

ZOLL Medical Australia
www.zoll.com/au

Leveraging AI and automation **to save lives**

The COVID-19 pandemic has stretched healthcare systems to their limits and highlighted the need for digital innovation within our hospital facilities.

Amidst the struggles to suppress the outbreak, technological leaders have continued to develop smart healthcare solutions to improve patient outcomes, using automation and AI to ultimately save lives.

"Being able to predict a medical issue could have a life-or-death outcome," said Daniel Garcia Gil, a Solution Architect with automation and digital solutions corporation Schneider Electric. "If you use an early-warning system that constantly monitors a patient's vital signs, this system could automatically detect whether or not the patient is at risk of developing a serious medical condition."

By integrating a range of digital solutions within a healthcare facility's assessment workflow — from automating patient monitoring to predict treatment, to digital systems to improve staff efficiency and workload — hospitals have the capacity to improve patient care and comfort as well as reduce critical care scenarios.

Commonly, critical care teams manually measure and record vital signs for assessment by a physician, whereas an integrated digital solution could perform the same tasks, continually measuring and assessing the patient's condition, then recommending an appropriate course of treatment based on predictive analysis.

"This could mean predicting a stroke or a heart attack, or another serious medical condition," Garcia Gil said. "The patient is then treated before their condition worsens. For the patient, they could avoid a life-or-death issue or consequences in the long term; for the facility, they've just avoided a fatality."

When considering the outcomes of automating clinical processes, the potential scenarios are literally life-changing.

"A common scenario could be as simple as avoiding a potential admission," Garcia Gil said. "If a person is waiting in an emergency department and their situation gets worse and ends in an admission, there's a chance that could have been avoided."

A system could combine both a traditional clinical assessment process coupled with a digital monitoring and reporting system to

enable expedited assessment of a patient's needs. The combined result would equate to more care time with patients as well as automated assessment of symptoms presented to predict health events.

RapidResponse is one such system. Part of a suite of software services developed by Schneider Electric partner ThoughtWire, the company worked with Hamilton Health Sciences, Ontario, Canada, to implement an AI-powered digital solution to access patient data and provide care outcomes physicians can use immediately, while administering care.

The aim of the project was to take real-time data, captured directly from patient interviews, and turn it into usable knowledge that staff in any step of the workflow could access immediately.

"Patient comfort and satisfaction can be improved by using predictive systems to prevent equipment malfunctions before they occur"

To accomplish this, staff first use handheld smart devices to capture patient data which is fed into the RapidResponse app. Automated software then reports appropriate data directly to the most appropriate physician for their needs. The system has reduced incident response times by an average of five minutes, or roughly 50%, and saw a 61% reduction in Code Blue calls.

Another aspect of this level of automation is the ability to reduce the time medical staff spend on paperwork and the improvement in patient experience that results. In a normal reporting situation, a physician or nurse will interview a patient or take their vitals, then return to a nursing station to record notes in a computer. When this process is automated, a more beneficial outcome can result.

Rather than monitoring patients from afar in such a way, RapidResponse keeps nursing staff and physicians right at the patient's bedside as they record vitals or symptomatic data. The benefits of increasing time with patients and removing the requirement to manually produce reports are felt both ways.

"In this use case scenario, it's not just about treating more patients, it's about the whole experience as a clinician and their feeling of satisfaction," Garcia Gil said.

"They go home thinking 'I'm doing the job that I really love', which is treating patients. This also impacts the staff retention rate."

The implementation and orchestration of such automation is not as simple as swapping in a few new computers and giving staff tablets to record data. Teams of system designers, including Solution Architects, like Garcia Gil, embark on a lengthy process to determine the needs of an individual healthcare facility, and its staff and patients, before any equipment or software is even considered.

For example, a mental healthcare facility will require different systems and processes to an oncology centre, because staff interact with patients in a different manner and the testing procedures required of each facility vary widely. Whether the facility is a new development or an existing institute will also dictate the approach of the project. These designs are then divided into facilities services and clinical systems.

Through the automation of facilities services, facets such as environmental systems and patient comfort services — like in-room entertainment — are continually monitored, and managed automatically. This can have a variety of positive outcomes.

"Patient comfort and satisfaction can be improved by using predictive systems to prevent equipment malfunctions before they occur," Garcia Gil said. "A patient won't have to wait if their TV isn't working or the heating or air conditioning in their room breaks down [because automation] can predict when that facility system is going to fail and indicate prevention measures or deal with failures more swiftly when they do happen."

From a clinical equipment perspective, utilising automation can reduce the cost and frequency of equipment malfunctions and servicing, and even prevent failures in the first place. Monitoring is performed by IoT devices, which capture lifetime usage data to be collated against manufacturer specifications and real-world data collected anonymously from other equipment users. Smart software then monitors equipment and predicts maintenance events accordingly, issuing automated work requests before failures ever occur.

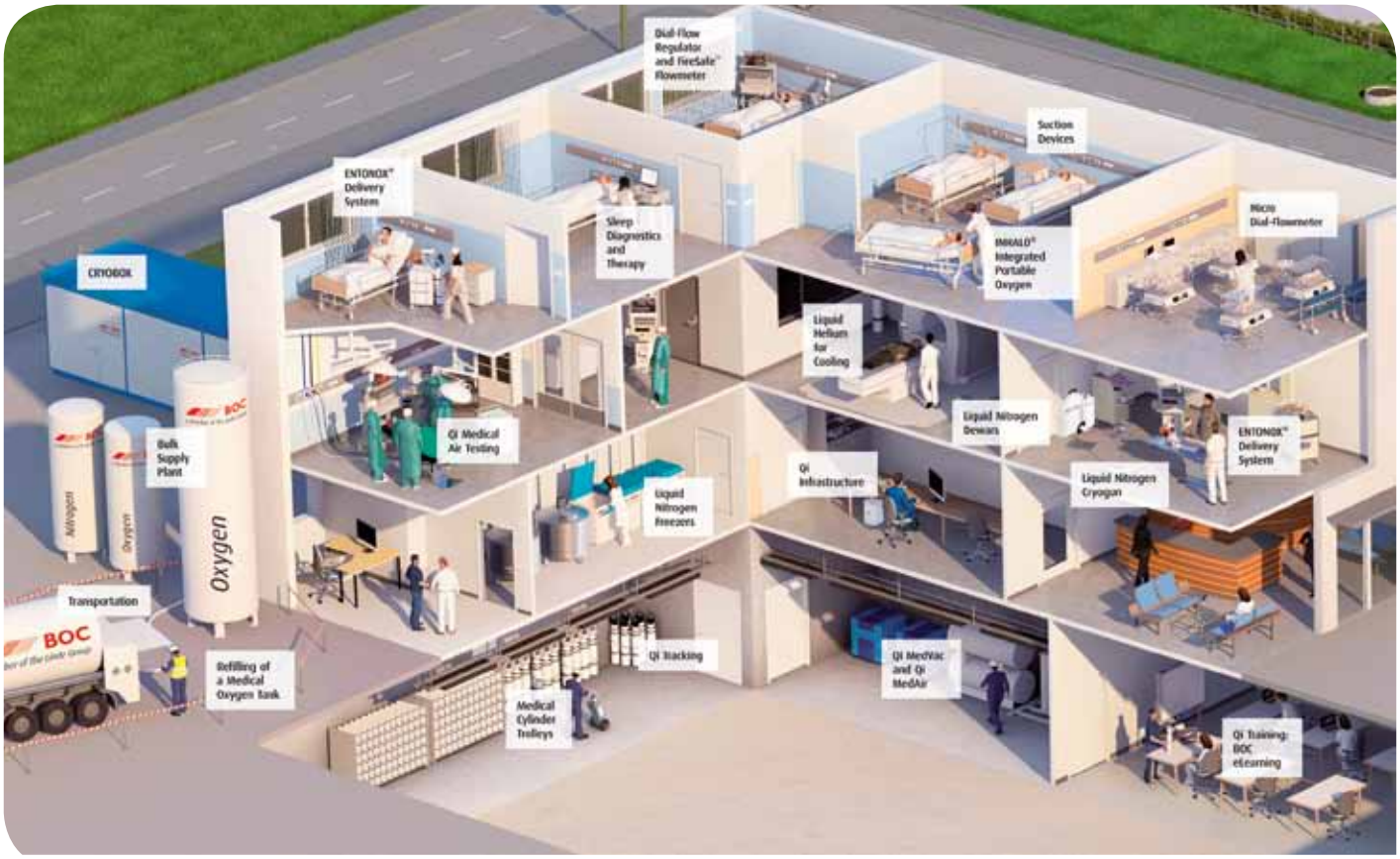
An innovation project was recently completed on an Australian paediatric hospital, which saw the integration of roughly 40 different systems throughout the green-star facility to automate assessment management, operational procedures and patient experience. The implementation of services and equipment encompassed a variety of disciplines, encouraging collaboration and efficiency between workflows.

The facility's systems, built on the EcoStruxure software platform, developed and managed by Schneider Electric, offered staff and facilities managers the ability to manage building services and patient data from a 'single pane of glass' — an iPad or other smart device.

The ability to automate workflows and building services saw operational efficiency increase across both clinical staff and facilities teams, and an increase in patient safety and satisfaction, ensuring the facility gives our most vulnerable the greatest chance of recovery and good health they have.

While digital innovation in any industry will require a substantial budget, when that industry is health care, these kinds of benefits clearly outweigh the costs. To ensure the hospitals of the future deliver the best level care possible, the time to implement this technology is now.

For more information about hospitals of the future, visit se.com/au/healthcare.



QI Risk Medical gas pipeline system and operational assessment

A well maintained, fit-for-purpose medical gas reticulation system is critical to a healthcare facility's ability to deliver reliable and safe patient care. However, hazards in the system can be easily overlooked, potentially compromising reliable and safe operation of the facility.

Common medical gas system hazards within a healthcare facility can include:

- Outdated gas cylinder manifolds that no longer comply with safety design standards.
- Unmaintained or non-compliant medical air plants, compromising reliability of supply and delivering poor-quality medical air.
- Insufficient pipeline and instrumentation drawings, increasing the difficulty of troubleshooting and repair of the medical gas system.
- Non-compliant cylinder storage or cylinder segregation resulting in fire and asphyxiation hazards.

Drawing on over 60 years' experience of providing medical gas solutions and support, BOC has developed QI® Risk as a proactive approach to manage the safety, reliability and compliance of medical gas reticulation systems.

QI Risk is a comprehensive medical gas pipeline and operational assessment package involving a thorough inspection, risk assessment, detailed reporting and recommendations by one of BOC's medical gas reticulation experts; giving your healthcare facility the insight required to ensure safe and reliable operation of the complete medical gas reticulation system.

BOC will work closely with you to tailor the scope of the QI Risk assessment package to meet the specific requirements of your healthcare facility — this assessment can include all or part of the following areas:

- Liquid oxygen supply.
- Cylinder storage.
- Manifolds and manifold rooms.
- Medical gas alarm systems.
- Plant rooms, medical air and medical vacuum plants.
- Medical gas reticulation.
- Department, ward and theatre medical gas infrastructure.
- Medical gas training, policies and procedures.
- Safety regulatory requirements.

BOC can assist in the design, supply and fitting of medical gas infrastructure, equipment and maintenance; developing best practice solutions specific to a healthcare facility's needs and assisting in maintaining compliance and accreditation within current regulatory standards.

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For more information call us on **1800 050 999** or email **healthcare@boc.com** or visit **www.boc-healthcare.com.au**

We need more expert pharmacists in era of medicine miracles

Kristin Michaels, SHPA Chief Executive

As we live through the lengthening tail of a persistent pandemic, it is challenging to consider the simpler medicines landscape of 20 years ago.

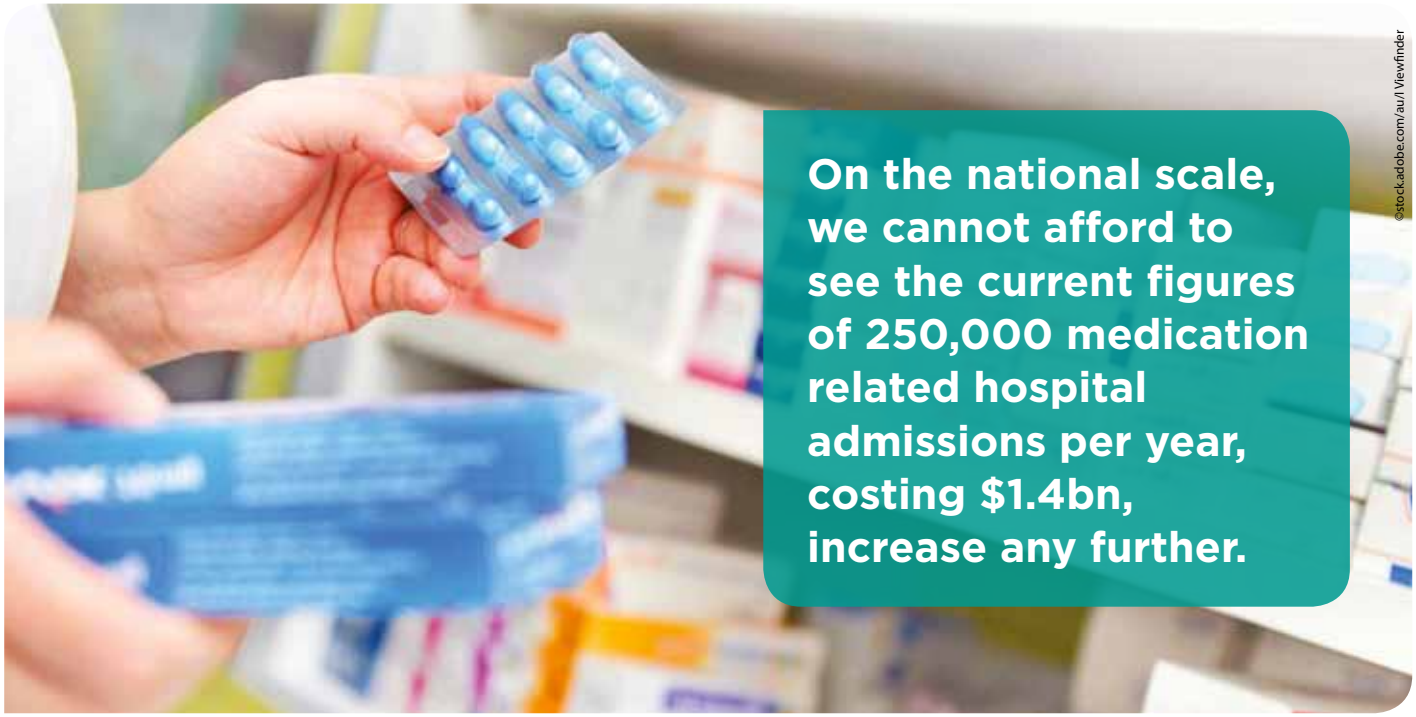
In 2001, most medicines listed on the Pharmaceutical Benefits Scheme (PBS) were used for the management of lifestyle-related diseases, and the revered program was one-third of the size it is today.

In recent years, a large proportion of new medicines approved for subsidy are much more complex, carry higher costs and are overwhelmingly used or initiated in hospitals due to the serious nature of the conditions being treated.

Evidence of this shift in the medicines and healthcare landscape is clear in the steadily increasing proportion of PBS funds managed by hospital pharmacists, from zero at the turn of the century, where the PBS and hospital care were funded in parallel, to 23% today.

For this reason, hospital pharmacy input is essential to the reviews of two 20-year-old policies that shape how we pay for medicines and ensure they are provided safely and effectively to those who need them: the Pharmaceutical Reform Agreement and National Medicines Policy.

The challenge in the opportunity is our uniquely federated healthcare model, in



On the national scale, we cannot afford to see the current figures of 250,000 medication related hospital admissions per year, costing $1.4bn, increase any further.

which federal government engagement with the state-funded hospital sector cannot always delve into the detail given its size and complexity. However, it is at the coalface of patient care where even the smallest impacts are felt.

In 2019, a surprise $44m cut in PBS remuneration for hospital pharmacists appeared in the Federal Budget — this figure alone could fund extensive, nationwide early-career development programs necessary to support the workforce pipeline we need to deliver high-quality patient care into the future.

A troubling and unaddressed legacy of our shifting medicines landscape is that pharmacy is the only healthcare profession in Australia that ties the provision of clinical services to the value of the medicine prescribed. This is ethically inconsistent with the purpose of the policies under review, especially given growing knowledge of deprescribing as an intervention that can improve quality of life.

As a top priority, these reviews must place the patient at the centre of reform and fund clinical services separately.

The decoupling of funding for medicines and funding the unique expertise to safely deliver them cannot reduce other services within our already constrained healthcare sector. These constraints — exacerbated by the COVID-19 pandemic — are especially pronounced in non-metropolitan areas, an imbalance that national policy must always seek to correct.

The answer is greater investment in our next-generation pharmacy workforce, who are coming through with advanced literacy in the management of increasingly complex medicines.

Distinct pharmacist funding will see more hospitals meet national Standard of Practice ratios per patient bed, while meeting the *Guiding principles to achieve continuity in medication management*, developed specifically as part of the Pharmaceutical Reform Agreement.

These are added benefits, of course. Hospital pharmacists have been proven through research to reduce medication errors before, during and after hospital stays, reduce the risk of re-hospitalisation upon discharge and mitigate harm from sub-optimal use of medicines when back at home, in a residential care facility or moving in between.

An unintentional zero or a misplaced decimal point can result in a fatal tenfold overdose — it is these errors that hospital pharmacists are expertly able to detect and prevent harm to the patient.

On the national scale, we cannot afford to see the current figures of 250,000 medication-related hospital admissions per year, costing $1.4bn, increase any further.

To get there, we need to fund more hospital pharmacy internships nationwide, which lead into established SHPA Foundation Residencies and Advanced Training Residencies to rapidly develop complex skills in the hospital setting.

Backed by support and recognition for extended hours pharmacy services and optimal staffing ratios as outlined in national standards of practice, we can begin to build a stronger pharmacist workforce that can stay a step ahead of our medicines landscape.

Without our captains of medicine having a say, changes to the Pharmaceutical Reform Agreement could reduce the workforce size in real terms, leading to instances of less safe care, no supply of medicines on hospital discharge, poor medicines chart review and reconciliation, and no input into multidisciplinary teams that need to wrap around each and every patient.

Review of each of these policies presents a fantastic opportunity to align with the current reality of their impact on medicines access and medicines use.

We should be proud of our much longer list of life-saving PBS-subsidised medicines and determined to ensure they are always used safely and fairly in every corner of our country.

The Society of Hospital Pharmacists of Australia
www.shpa.org.au

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Telehealth: The Rural Connectivity Divide

Telehealth services have been on the rise for several years now. Since March 2020 telehealth services have skyrocketed and new temporary MBS telehealth items have been made available to help reduce the risk of community transmission of coronavirus (COVID-19) and provide protection for patients and healthcare providers.

Over 56 million COVID-19 MBS telehealth services have been delivered to 13.6 million patients in need of health care in regional, rural and remote Australia since the start of the COVID-19 pandemic, Medicare data has shown. With more than 83,540 providers having used telehealth services. Which is why as part of the 2021–22 Budget, the Australian Government is investing more than $114 million to extend Telehealth until the end of the year.

Telehealth can assist healthcare systems, organisations, and providers expand access to and improve the quality of rural healthcare. Using telehealth in rural areas to deliver and assist with the delivery of healthcare services can reduce or minimise challenges and burdens patients encounter. It can also improve monitoring, timeliness, and communications within the healthcare system.

Using information and communications technologies (ICTs) to deliver health services and transmit information over both long and short distances. It is about transmitting voice, data, images and information rather than moving care recipients, health professionals or educators. It encompasses diagnosis, treatment, preventive (educational) and curative aspects of healthcare services and typically involves care recipient(s), care providers or educators in the provision of these services directed to the care recipient.

Video conferencing is the preferred approach for substituting a face-to-face consultation and is one of the main ways of improving access to healthcare services for patients who live in regional, rural and remote areas.

"While Telehealth has been an important lifeline for people in rural, regional and remote Australia during the pandemic connectivity remains a big issue in rural Australia, and we need to be improving internet infrastructure in the bush otherwise telehealth is difficult or impossible for patients and health practitioners to use," said National Rural Health Alliance CEO Dr Gabrielle O'Kane.

Although internet infrastructure is available to almost all Australians, more than 2.5 million remain offline, the take up of the NBN continues to close the gap in access for rural Australia, however, there are substantial differences in digital inclusion between Australians living in rural and urban areas.

COVID has created an unprecedented demand for connectivity, as we settle into the 'new normal', the need for innovative connectivity solutions is now more critical than ever.

The Cellferno is a revolutionary product, brand new to the Australian market, developed using innovative mobile technology which delivers high-speed data for basic internet access to mission-critical applications. Connectivity is the new currency in light of the global pandemic, with connectivity solutions like Cellferno critical for consumers and businesses in order to digitally navigate COVID-19 restrictions.

Cellferno can provide users with super-fast internet speeds and connectivity, with the single box design containing multiple antennas and a built-in modem to capture the best possible signal outdoors. With a single ethernet cable powering the Cellferno device, it can be connected directly to a computer, network switch or a WIFI access point to provide high-speed internet to devices within range.

Cellferno's focus is on speed, it can act as a primary internet for areas with poor internet, cellular or NBN service with speeds up to 2.5Gb/s. The Cellferno M2000 5G Fixed Wireless unit provides multi-gigabit data speeds by combining both 4G and 5G carriers. Supporting the latest 5G NR standard along with an incredible Cat-22 4G LTE chipset. The unit has dual-sim redundancy, IP67 weatherproof casing that supports Australia's temperature extremes, this unit is ideal for enterprise and industrial customers demanding high data rates with high reliability.

"The need for better connectivity has never before been so critical, with more people staying at home, organisations setting up pop-up work zones, businesses using online tools or platforms, and the necessity of web-based learning."

"Cellferno is an extension to Powertec's current mobile broadband product offering, providing an additional high-speed connectivity solution to our product portfolio." — Powertec Product Manager Paul Boyce.

In this current climate of wireless dependency due to the COVID-19 crisis, Cellferno delivers the ultimate high-speed internet connectivity solution, especially where cable-based internet is not available. The Cellferno has allowed Powertec to provide fast reliable internet connectivity to clients in a previously fragmented area. The fixed wireless solution is taking on the NBN, or inadequate broadband connections, across many rural areas across Australia. In this current climate of wireless dependency due to the COVID-19 crisis, Cellferno delivers the ultimate high-speed internet connectivity solution, especially where cable-based internet is not available.

Contact our team of experts today about our innovative connectivity solutions on 1300 769 378, email sales@powertec.com.au or visit www.powertec.com.au to view the full range of products.

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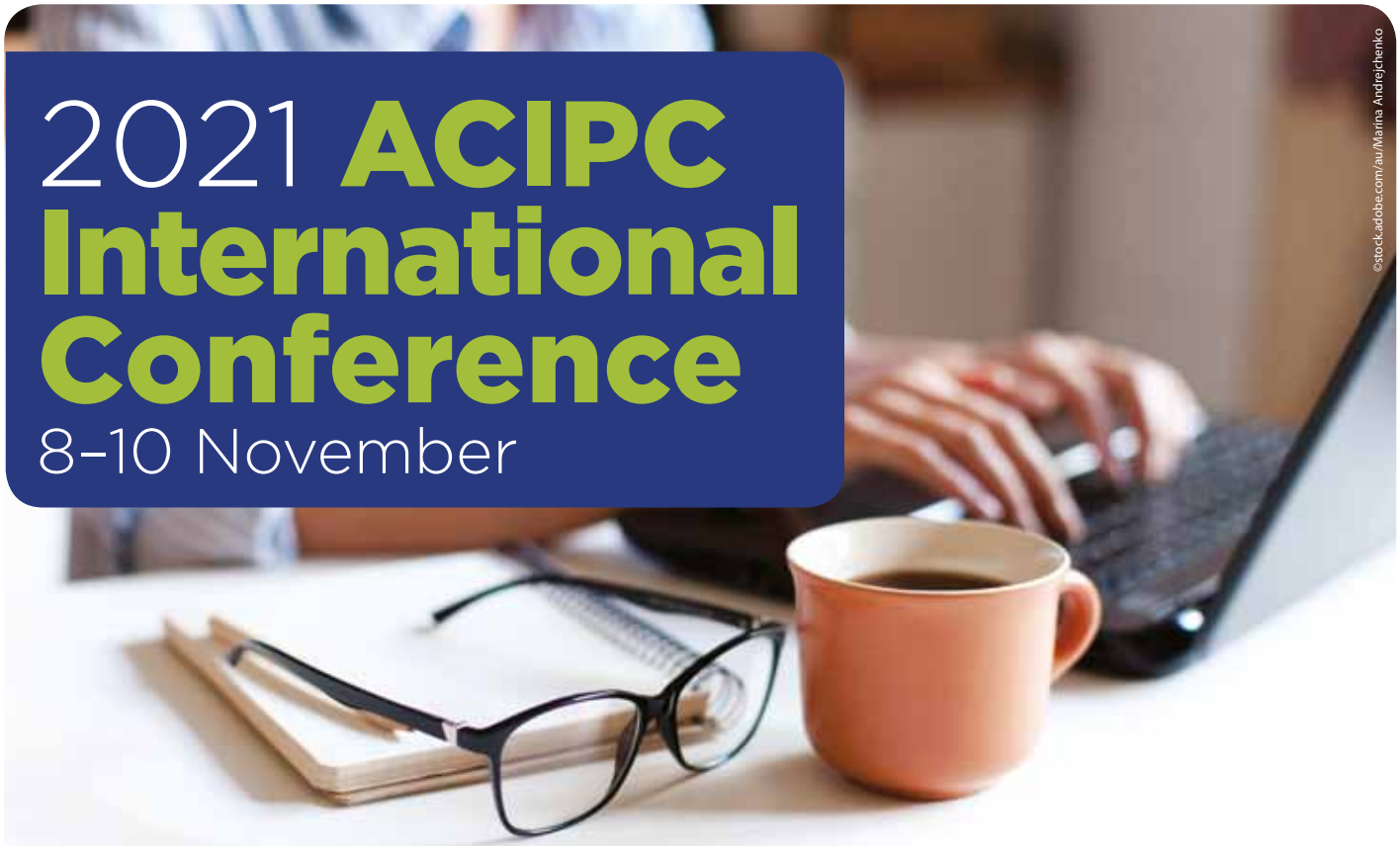

2021 ACIPC International Conference

8–10 November

While COVID-19 continues to unfold as the most significant health crisis the world has seen in a century, it is critical that we continue to bring together experts in a variety of scientific fields to discuss and share emerging knowledge.

The 2021 Australian College for Infection Prevention and Control (ACIPC) International Conference will be delivered as an online event.

It will bring together professionals working in the infection prevention and control space to discuss discoveries and advancements in practice, education, and research to help prevent and control infection in our communities.

The conference will take place online between 8 and 10 November.

Presentations

The conference features an impressive array of invited national and international speakers, panels, oral presentations, poster presentations and themed sessions.

Confirmed topics include:

- Epidemiology of Healthcare-Associated Infection (HAI) in Australia
- Worldwide trends in infection prevention and control
- Lessons from the COVID-19 pandemic
- Prevention of vascular catheter associated bloodstream infections
- Acute care outbreaks
- Air conditioning's role in transmission of COVID-19
- Lessons learnt about transmission of COVID-19 in acute care settings
- PPE use in times of constrained supply
- The value of genomics during an outbreak
- Identifying patient zero: genomic sequencing in conjunction with epidemiological data in a hospital outbreak
- Use of portable air cleaners to reduce aerosol transmission on a COVID-19 ward
- Differentiation of alcohol-based hand rubs: assessment of proclivity and efficacy
- The risk of the environment in infection transmission
- Feasibility of bluetooth low energy wearable tags to quantify healthcare worker proximity networks and patient close contact
- Efficacy of ultraviolet C radiations against bacteria, fungi and coronavirus

For information about speakers and presentation topics, visit www.acipcconference.com.au.

The conference will also have a theme session running throughout each of the three days for aged care, office-based practice and immunisation.

Infection prevention and control in residential and aged care facilities

- Infection prevention and control challenges in aged care
- Developing a risk management IPC plan for your facility
- Developing an outbreak management plan for your facility
- Infection prevention and control resources for residential aged care facilities
- Experiences of outbreaks in aged care
- A risk-based approach to staff health and safety

Infection prevention and control in office-based practices

- 'Back to basics' microbiology and infection prevention and control basic principles
- Regulatory obligations, guidelines and standards
- Hand hygiene in office-based practice
- Environmental cleaning and disinfection
- Aseptic technique, PPE and aerosol generating procedures in a podiatry and dental setting
- Infection prevention and control audits in office-based practice and look backs
- Instrument cleaning and reprocessing in office-based practice

Immunisation workshop on day 3

- Vaccine programs in aged care settings
- Vaccine programs in hospital settings
- Approaching the introduction of an influenza vaccine directive
- Mandatory influenza vaccinations for healthcare workers

For more information, details about the full program and registration, visit the website: www.acipcconference.com.au.

If you have any questions regarding the conference, contact conference managers, Conference Design, mail@conferencedesign.com.au, 03 6231 2999.

9th International Australasian College for Infection Prevention & Control Conference

8 - 10 NOVEMBER 2021, ONLINE

brokering new dimensions and frontiers in education, research and practice in infection prevention and control

PROGRAM HIGHLIGHTS

Controversies Surround Mask Use,
featuring Distinguished Professor Lidia Morawska,
Time magazine - 100 most influential people in the world

How has COVID-19 changed infection prevention and control,
Adjunct Professor (Practice) Alison McMillan, Chief Nursing and Midwifery Officer

Making decisions without evidence during COVID-19,
Professor Dale Fisher

Worldwide Trends in Infection Prevention & Control,
Professor Brett Mitchell

SPECIALIST SESSIONS

Day 1 - Infection Prevention and Control in Residential and Aged Care Facilities

Day 2 - Infection Prevention and Control in Office Based Practice

Day 3 - Immunisation workshop

All conference sessions will be live streamed to online attendees, with content available for three months following the conclusion of the conference for all delegates.

For more information and to register visit the website:

www.acipcconference.com.au

In Conversation
with Dr Brett Shannon

Jane Allman

General Sir John Monash Foundation scholarships provide outstanding Australian graduates with support to undergo postgraduate study at the world's best universities. Successful applicants demonstrate excellence in their field and leadership potential, and are motivated to contribute to a better Australia. Investing in Australians, for the betterment of Australia, is one of the top criteria in the selection process for the Foundation. John Monash scholarships are awarded to applicants who can demonstrate why studying at a particular university abroad is the best place possible to further their research.

Indigenous health expert Dr Brett Shannon is a 2021 John Monash Scholar, currently undertaking a PhD in the Division of Environmental and Occupational Health Sciences at the University of Illinois Chicago (UIC).

Brett is an occupational and environmental registrar, with a particular interest and expertise in Indigenous health issues. He is a proud Ngugi/Quandamooka descendant and has served as chairperson of the Brisbane Aboriginal and Torres Strait Islander Community Health Service. His PhD is focused on occupational injuries, to review occupational injury management and prevention strategies in Indigenous and vulnerable populations.

What learnings are you taking from your studies in Illinois that can be applied in the Australian Indigenous health setting?

My degree in Illinois currently requires me to work across three separate departments at UIC, and this ideally places me to better understand global perspectives in environmental and occupational health. I am currently conducting research with my primary supervisor, Dr Lee Friedman, focused on injury surveillance programs in Illinois where I am concentrating on injury prevention in Indigenous and minority populations.

The other two departments I am working across include the Great Lakes Center for Occupational and Environmental Safety and Health, which delivers an online training program for occupational health professionals globally, and the Black Lung Center of Excellence (BLCE), which conducts extensive international education and outreach programs on risks of injury and illness in the mining industry. The BLCE team already has provided expertise to Australia, particularly through collaborative work evaluating the respiratory component of the Queensland Coal Mine Workers' Health Scheme.

All three of these departments have acknowledged the paucity of occupational health data on Indigenous populations globally and have not only incorporated ethnicity into current research projects, but are providing opportunities for comparative research between Australia and North America, and assistance in developing methods to incorporate Indigenous occupational health into national research agendas where it has been lacking to date.

In regards to occupational injuries, what specific kinds of injuries are we talking about and why do they need particular attention in the context of Indigenous and vulnerable populations?

In terms of occupational injuries, we are talking about more than musculoskeletal injuries

and trauma from body stressing, falls, trips, slips and being hit by moving objects in the workplace. We are still seeing large numbers of occupational diseases from mental stress, chemical and biological exposures, and environmental factors such as heat, electricity and noise.

Indigenous workers are currently strongly represented in hazardous industries such as agriculture, coalmining, construction and community welfare services, and health services. Despite the increasing number of Indigenous staff employed in these settings, we have no understanding of their work-related injuries and illnesses.

Generally, occupational injuries have continued to increase in Australia, with over 100,000 serious claims per year and the median time lost from work currently six weeks per claim. My research shows that historically we have limited research on Indigenous workers who have previously been exposed to physical trauma, uranium and other mining exposures, environmental biological exposures and persistent organic pollutants in various occupational settings internationally.

The work setting for Indigenous populations has changed dramatically and I would suggest that the increases in mental health occupational conditions we are witnessing globally would be reflected in Indigenous communities as well; however, at present we do not have any data to determine the Indigenous occupational injuries in Australia. We need this information to support Indigenous engagement and retention in the workforce and understand a growing problem in the Indigenous context where it has not been reviewed.

How does Australia's Indigenous health system compare to other countries? What elements could we take from other systems that would work well in Australia?

As a previous non-executive Director of the Institute for Urban Indigenous Health (IUIH) based in Brisbane, I have regularly acknowledged that elements of IUIH were based on the Urban Indian Health Institute located in Seattle. Also, as part of a contingent from IUIH, I visited the Nuka Health System based in Alaska in 2018 to review their model of primary health care for Alaskan natives and bring learnings home to improve our community-controlled health services in south-east Queensland.

From my experience, Australia can translate lessons from international health systems into successful new programs. I see occupational health as another area where we can take lessons from overseas to translate into better data systems, research agendas, educational programs and clinical models of care for Indigenous and non-Indigenous Australians.

Are there any aspects of Australia's Indigenous health system that you feel could be successfully applied in other countries?

There are successful aspects of Australia's Indigenous health system, such as our comprehensive primary health care, particularly related to chronic disease management and prevention, and maternal and child health. Australia also has an increasing focus on the unique challenges for both urban and remote Aboriginal and Torres Strait Islander communities, particularly the unique challenges of providing health care in very remote settings, including ensuring continuity of care and appropriate workforce models.

These aspects of Australia's Indigenous health system have been successful due to the Indigenous-led health service partnerships we have created. I really believe that when exploring opportunities for knowledge translation in an international context, the process used to develop relationships with all stakeholders engaged in the policy, research or clinical service development process is just as important as the output produced.

Are there current themes in terms of the challenges facing Indigenous global populations?

Globally, we have not made significant reductions in the burden of mental health and injuries in Indigenous populations. These are challenging areas in Indigenous health that require significant investment in culturally appropriate research and multidimensional models of care that will hopefully allow for development downstream of researchers and clinicians trained in these areas in the future.

We are also seeing an increasing focus globally on sustainable environments and environmental changes in Indigenous communities and this will be one of the key challenges facing Indigenous people moving forward. In a world that has been ravaged by COVID-19, the prediction is that disparities in socioeconomic and health outcome status between Indigenous and non-Indigenous will potentially widen as the most disadvantaged in society become even more so as we try to recover from the pandemic. As the Delta variant currently spreads through parts of Australia many Indigenous Australians are still unvaccinated and many remote communities continue to be effectively locked away from the rest of Australia. I hope Indigenous communities are prioritised and supported through the recovery of the pandemic as we start ensuring permanent changes are made to the circumstances people are living in day to day to reduce their risk.

Out & About

Nursing professionals recognised at virtual awards

Category	Staff winner	Member (nurse) winner
Excellence	Emma Stammer	Jude Guerin
Grow	Glenn Bardon	Janet King
Supportive	Kelly Goodfellow	Alex Quillope
Can do attitude	Melanie Telyszak	Vladimir "Wally" Milosevic
Caring	Cara Moore	Daruka Bul
Fun and Positivity	Torben Wick	Anita Fitzgerald
The Louy Award	Melanie Telyszak	Vladimir "Wally" Milosevic
The Tony Miller Award	Stephanie Foster AIN	

Caring for You, a nurse owned and operated agency, recognised the exceptional care, warmth and compassion displayed by its staff and nursing community over the past 12 months at the Inaugural Caring for You Core Values Awards.

The virtual event took place on Friday, 3 September and was attended by the Caring for You Board and staff members, carers and the family and friends of the 2021 finalists who gathered to celebrate the people who lead Australia's healthcare industry.

Caring for You's late founder, Louise Thomson (Louy), began the agency with the aspiration of providing a vital service that was always from a nurse's perspective, driven by a desire to supply well-trained professional nurses to the healthcare industry who would be appreciated by employers with strong values. The agency now has almost 5000 carers and 100 internal staff working across the nation.

Before her passing earlier this year, Louy established the core values that embodied the humility and care of the Caring for You family in everything they do. The inaugural Core Value Awards were created by Co-CEOs Grace and Belle Thomson to honour the legacy of their mother, Louy, and the values she instilled into the Caring for You brand.

The winners of the 2021 Caring for You Value Awards include:

Two awards were dedicated to each value to recognise and celebrate a nurse and a Caring for You staff member who has demonstrated excellence, growth, care, support, fun and positivity and a can-do attitude over the past year. The winners of these six categories were presented with a beautiful glass trophy and a $500 cash prize.

The awards included The Tony Miller Award, which is dedicated to Louy's late father and provides a learning fund to help the winner focus on continual learning in the nursing sector.

The final award of the night honoured the character and drive of Louy, aptly named 'The Louy Award.' The award winner received a $5000 prize and a brand-new car.

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