HOSPITAL AND HEALTHCARE
AUTUMN 2022

SAFETY ISSUE

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Anxiety. Exhaustion. Depression. Burnout. Post-traumatic stress disorder (PTSD). More than two years into the pandemic and we often hear these words associated with workers in the healthcare industry.

COVID-19's impact on the wellbeing of health workers is staggering. Latest research by Professor Marie Bismark, a public health physician and health lawyer who leads the Law and Public Health Group at the University of Melbourne, and colleagues suggests that one in 10 Australian healthcare workers reported thoughts of suicide or self-harm during the pandemic, with certain groups being more vulnerable. Not surprisingly, and rather unfortunately, most of these workers with thoughts of suicide or self-harm did not seek professional help.

Researchers suggest that strong and sustained action is urgently needed to protect the safety of healthcare workers and provide meaningful support. The challenges facing the healthcare workforce don't just impact their and their family's wellbeing, they also present safety risks. The article on page 22, featuring Consultant Emergency Physician Dr Stephen Parnis, discusses the safety fallout of worker fatigue in health care. Dr Parnis reminds us how extended hours, exhaustion and mental fatigue increase the risk of clinical errors, and shares what is needed to change the status quo and improve outcomes for both staff and patients. Of course, these aren't the only challenges facing the healthcare sector.

Elsevier Health's recently published 'Clinician of the Future' global report reveals how one in three clinicians are considering leaving their current role by 2024. To ensure a positive shift moving into the future — and to fill current gaps — clinicians highlight the following priority areas for greater support: enhancing health technology skills; a greater focus on the patient–provider relationship; and an expanded healthcare workforce.

But it's not all doom and gloom in the sector that's going through a massive transformation. This issue also features a range of exciting projects and initiatives on a variety of topics and themes — a program that helped a local hospital halve its code blacks; how digital 'twins' could transform paediatric hip surgery; the impact of shift work on impulse control; aged care and malnutrition; and an Australian-first pilot aimed at providing equitable access to clinical trials for patients in regional areas.

Also, make sure you check out the exciting new projects featured in this issue's 'Design in Health' section — one on the 339-bed Maitland hospital in the Lower Hunter Valley of New South Wales and another on a new dedicated adult mental health unit at Blacktown Hospital.

Happy reading!

Mansi Gandhi

Editor, H+H

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The Rounds
Updates in health care

SA Health, Flinders test new dietary tool for cancer patients

A new dietary tool to quickly and accurately assess micronutrient levels aims to help cancer patients fight disease, according to Flinders University researchers.

"Dietary intake, specifically consumption of anti-inflammatory micronutrients, can play a role in both cancer initiation as well as the treatment-related outcomes experienced by patients receiving systemic cancer therapy," said Flinders University PhD candidate Mitali Mukherjee, an accredited practising dietitian at Flinders Medical Centre.

"Tested by 112 cancer patients, our 21-item food frequency questionnaire for 14 common micronutrients can be done in about 10 minutes and could be used to screen patients having suboptimal micronutrient intakes.

"We hope it will pave a pathway for provision of dietary advice in clinical practice and future observational research with chemotherapy and immunotherapy cancer treatments."

Mukherjee, with other SA Health and Flinders University experts including Professor Michelle Miller and medical oncologist Dr Shawgi Sukumaran, hopes to expand the study to use the tool to test the validity of anti-inflammatory nutrients among oncology patients receiving systemic treatment.

The tool tested adequacy of a patient's micronutrients for 12 nutrients include copper, iron, vitamins A, E and D, alpha linolenic acid, long-chain omega 3 fatty acids (LC n3-FA), arginine, glutamic acid, isoleucine, leucine and valine.

"Further research could help to determine whether micronutrient intakes and an anti-inflammatory diet can aid in altering the tumour microenvironment, reduce inflammatory side effects and immune-related adverse events," said senior author Dr Sukumaran.

Dietary factors have been associated with risk of developing cancers, especially breast, colorectal, head or neck, lung and prostate. Dietary factors also play a role in side effects and chemotherapy and other treatment options for cancers. Previous studies have confirmed the benefits of a lower dietary inflammatory index score associated with a Mediterranean diet or less processed or refined foods comprising large amounts of fruits and vegetables, lean meats, fish, wholegrains and healthy fats.

Mukherjee said there is currently no validated tool to measure micronutrient intakes in a clinical setting.

"Collecting comprehensive dietary information from a diet history and analysing it with Foodworks software can take up to two hours to assess micronutrient intakes, which is generally not feasible in clinical practice," she said.

Funding boost for local nurse's tech startup

Amelio Health, a provider of chronic pain management programs, has received the federal government's Boosting Female Founder Initiative grant.

The company is one of 51 recipients from over 2200 applicants vying for $12m in funding. Applications were assessed by an Independent Assessment Committee made up of women entrepreneurs, which was led by Professor Jana Matthews, ANZ Chair in Business Growth and Director of the Australian Centre for Business Growth at the University of South Australia.

CEO, Nurse and Founder of Amelio Health Kathy Hubble said the grant will allow her company to accelerate global growth and develop technical enhancements that will be essential for scaling purposes. "Being a recipient of this grant is a fantastic way to shine the light on the problem of chronic pain and how we are helping thousands of people manage their pain and get their lives back, " Hubble said.

The Amelio Health program has an 85% completion rate, with 95% of those participants increasing their capacity and getting their life back. Pain coaching alone does not address the complex nature of chronic pain, especially when it comes to medication rationalisation. The company also provides learning for rehabilitation consultants.

Amelio Health also uses data to drive behaviour change and assist live health coaching and nudging. We can see the emotional impact on physical function as it is happening, and gently nudge people in the right direction.

Hubble launched Amelio Health in January 2020 with the support of rehabilitation company Recovre. My team and I offer education and medication management for people suffering with chronic pain, and practise decision support for rehabilitation consultants, Hubble said.

"Amelio Health helps clients overcome the challenges of resource deficiencies and disruptive processes to create innovative and operational excellence in an ever-changing environment. Having long been a burning platform in life insurance, chronic pain is now being viewed and treated through an entirely new, holistic lens. It's paying powerful dividends for customers and life insurers alike," Hubble said.

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The Rounds
Updates in health care

Nurse researcher recognised by international society

Australian College of Nursing (ACN) President Emeritus Professor Christine Duffield FACN has been announced as one of 32 new inductees into the Sigma International Nurse Researcher Hall of Fame.

Professor Duffield is an internationally renowned and passionate nurse who has worked across direct care, consultancy, academia, research and leadership roles to spearhead the advancement of the nursing profession in Canada, New Zealand, the UK and Australia for over 40 years. She has published over 200 research papers and is Associate Editor for the *International Journal of Nursing Studies*, the most highly ranked international nursing journal.

"I am humbled to receive such a prestigious recognition in the international nursing community. I would like to acknowledge all the other inductees for this year, including my Australian colleagues Professor Jeroen Hendriks MACN, Professor Tracy Levett-Jones and Professor Lisa McKenna FACN. It is an honour to be in such elite company," she said.

ACN CEO Adjunct Professor Kylie Ward FACN said, "Nurses working in research roles play a leading role in advancing our profession and ensuring we are at the cutting edge of healthcare innovation and professional practice," she said.

"The achievements of Professor Duffield and her fellow Australian nurse researchers highlight the respect and influence our nurses have on the world's biggest health profession.

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How antimicrobial resistance spreads inside the human gut

A collaboration between the Hudson Institute of Medical Research and the Wellcome Sanger Institute, Cambridge UK, explores how antimicrobial resistance (AMR) spreads inside the human gut.

Lead researcher Dr Samuel Forster said resistance occurs when bacteria acquire changes and no longer respond to antibiotics. This makes infections harder to treat and increases the risk of disease spread, severe illness and death.

"Antibiotic resistance is emerging at an alarming level, rendering some bacterial infections untreatable and increasing dependence on last line antibiotics," Dr Forster said.

"The gut microbiome contains thousands of beneficial bacterial species, each of which may carry antibiotic resistance genes and share these with disease-causing bacteria," he said. "This work provides a new tool in the toolkit for managing the emerging threat of antimicrobial resistance."

Dr Sam Forster in his lab at the Hudson Institute, where he studies antimicrobial resistance.

Bacteria can develop resistance either through changes in their genetic sequence or by acquiring resistance genes from other bacteria. But resistance in pathogens is just one side of the story — the beneficial bacteria in our microbiomes also need ways to protect themselves, otherwise they will be destroyed every time we take antibiotics.

Understanding the diversity of resistance in the microbiome and which ones can be spread to pathogens allows us to be prepared and take actions to prevent this occurring.

"Our research provides world-first experimental identification of the key mediators of this transfer from the microbiome to pathogens," said Dr Emily Gulliver, a postdoctoral researcher also working on the project.

"Of most concern, bacteria carrying these elements were also detected in other body sites including the vagina, skin and nasal cavity, with some also found across diverse environmental samples. This suggests how widespread these elements may be," Dr Gulliver said.

Dr Forster said, "In this case we are discovering the rules that allow bacteria to share key functions between them and using this knowledge to reduce and prevent potentially deadly infections."

This research was published in *Nature Communications*.

Alzheimer's: disease cost expected to rise by 70% to $26.6bn

The cost of Alzheimer's disease is projected to rise by more than 70% to around $26.6 billion over the next 20 years, according to a new report by the University of Canberra's National Centre for Social and Economic Modelling (NATSEM).

Dementia Australia CEO Maree McCabe AM said with almost half a million Australians living with dementia — and Alzheimer's disease the most common form — this report reinforces the likelihood that dementia will have a staggering future economic cost without urgent action.

"Dementia is the second leading cause of death and the leading cause of death of women in Australia. It is the major chronic disease of this century," McCabe said.

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The report, titled 'The Economic and Societal Cost of Alzheimer's Disease in Australia, 2021–2041' and commissioned by Biogen Australia and New Zealand, builds on NATSEM and Dementia Australia's 'Economic Cost of Dementia in Australia 2016–2056 Report', released in 2017.

In order to reduce costs in the longer term, there needs to be a bi-partisan long-term commitment to improved services, research and increasing our understanding about dementia risk reduction, according to McCabe.

The report indicated costs could significantly be reduced if a disease modifying therapy for Alzheimer's disease was to become available. The result would mean fewer people having moderate to severe symptoms which would in turn, over time, reduce the impact on the health, aged care and disability systems.

"The introduction of a disease modifying therapy has the potential to lower the economic impact but is only part of the solution.

"The time for a holistic, sustained and coordinated approach is now," McCabe said.

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1 Fleming-Dutra, K., et al. (2016). "Prevalence of Inappropriate Antibiotic Prescriptions Among US Ambulatory Care Visits, 2010-2011." JAMA: The Journal of the American Medical Association 315(17): 1864-1873
2 Tackling drug-resistant infections globally: Final Report and Recommendations – The Review on Antimicrobial Resistance chaired by Jim O'Neill, May 2016

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The Rounds
Updates in health care

Breast cancer: how often does overdiagnosis occur?


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A new modelling study from the US found that previous estimates of breast cancer overdiagnosis may have been overestimated. The study, based on data from the Breast Cancer Screening Consortium, suggests that overdiagnosis, or the finding of tumours that may never have progressed or caused harm in a woman's lifetime, occurs in about 15% of screen-detected cancers.

The US Preventive Services Task Force (USPSTF) cites overdiagnosis as one of the chief potential harms associated with mammography screening because of the burden and adverse consequences of unnecessary treatments. Therefore, knowledge about overdiagnosis is critical for supporting shared decision-making about screening. However, the risk for breast cancer overdiagnosis in contemporary screening programs remains uncertain, with the most widely cited estimates reaching about 30%.

Researchers from Duke University and the Fred Hutchinson Cancer Research Center studied data from Breast Cancer Surveillance Consortium facilities to estimate the rate of breast cancer overdiagnosis in contemporary mammography practice for a cohort including 35,986 women, 82,677 mammograms and 718 breast cancer diagnoses. To estimate overdiagnosis.

In a program of biennial screening of women aged 50 to 74 years, which corresponds to USPSTF recommendations for average risk women, approximately 1 in 7 screen-detected cases would be overdiagnosed, the research found. Increasing the screening interval to annual screening did not seem to affect this number.

An editorial from Massachusetts General Hospital says that these findings may help women who are considering having mammography screening better understand the risk of overdiagnosis.

Music for stem cells: how soundwaves could help regrow bones

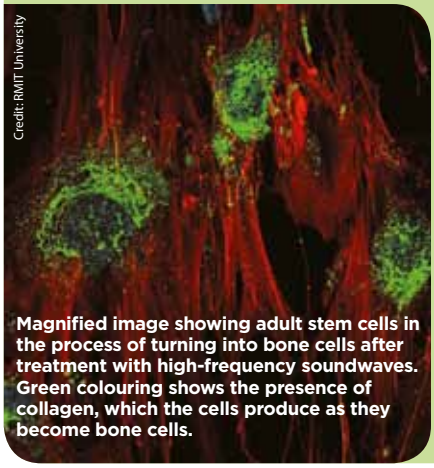
Researchers from the RMIT University have used high-frequency soundwaves to turn stem cells into bone cells, in a tissue engineering development that could one day help patients regrow bone lost to cancer or degenerative disease.

To date, experimental processes to change adult stem cells into bone cells have struggled with mass production, making widespread clinical application unrealistic, according to RMIT researchers. Additionally, the few clinical trials attempting to regrow bone have largely used stem cells extracted from a patient's bone marrow.

RMIT research team have showed that stem cells treated with high-frequency soundwaves turned into bone cells quickly and efficiently. Importantly, the treatment was effective on multiple types of cells including fat-derived stem cells, which are far less painful to extract from a patient.

Dr Amy Gelmi, Co-lead researcher and a Vice-Chancellor's Research Fellow at RMIT, said, "The soundwaves cut the treatment time usually required to get stem cells to begin to turn into bone cells by several days.

"This method also doesn't require any special 'bone-inducing' drugs and it's very easy to apply to the stem cells.


Credit: RMIT University

Magnified image showing adult stem cells in the process of turning into bone cells after treatment with high-frequency soundwaves. Green colouring shows the presence of collagen, which the cells produce as they become bone cells.

"Our study found this new approach has strong potential to be used for treating the stem cells, before we either coat them onto an implant or inject them directly into the body for tissue engineering."

The high-frequency soundwaves used in the stem cell treatment were generated on a low-cost microchip device developed by RMIT.

The soundwave-generating device the researchers have developed can be used to precisely manipulate cells, fluids or materials.

The next stage in the research is investigating methods to upscale the platform, working towards the development of practical bioreactors to drive efficient stem cell differentiation.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New drug study hopes to help kids with severe epilepsy

Researchers from the University of South Australia, in association with European researchers, are investigating a range of FDA-approved drugs with the aim of helping kids with severe epilepsy.

Malignant migrating partial seizures in infancy (MMPSI) is a childhood epilepsy most commonly caused by mutations in the KCNT1 gene — a gene responsible for regulating neuron activity in the central neural system. Children with this genetic condition are very unwell and can suffer up to 100 epileptic seizures a day.

There is no cure or current therapy to relieve the condition and the research aims to change this.

The researchers, funded by the Channel 7 Children's Research Foundation, will investigate a range of drugs flagged as possible options for children with MMPSI, testing their effectiveness on reducing seizures.

Chief investigator Professor Leanne Dibbens (UniSA) is an expert in the genetics of childhood epilepsy and was involved in the first discovery of the genetic mutations that cause epilepsies, including MMPSI. She said that this research could deliver life-changing outcomes for affected children and their families.

"The non-seizure drug Quinidine has been trialled in a number of children, but with little improvement, so there's an acute need for new drugs to treat children with KCNT1 mutations.

"We will be investigating a range of FDA-approved drugs that have been identified to limit the effects of the potassium gene mutation, and in this way, we hope to identify a high potential drug to treat this type of severe epilepsy," Dibbens said.

A significant advantage of the study is that the eight drugs within the study are already FDA-approved, which means the need for lengthy and costly clinical trials to prove the drugs' safety and efficacy is eliminated.

Positive results from this study will make a strong case for trialling the drugs in people with KCNT1-epilepsy, with children suffering from this severe form of epilepsy having immediate access to successful drugs.

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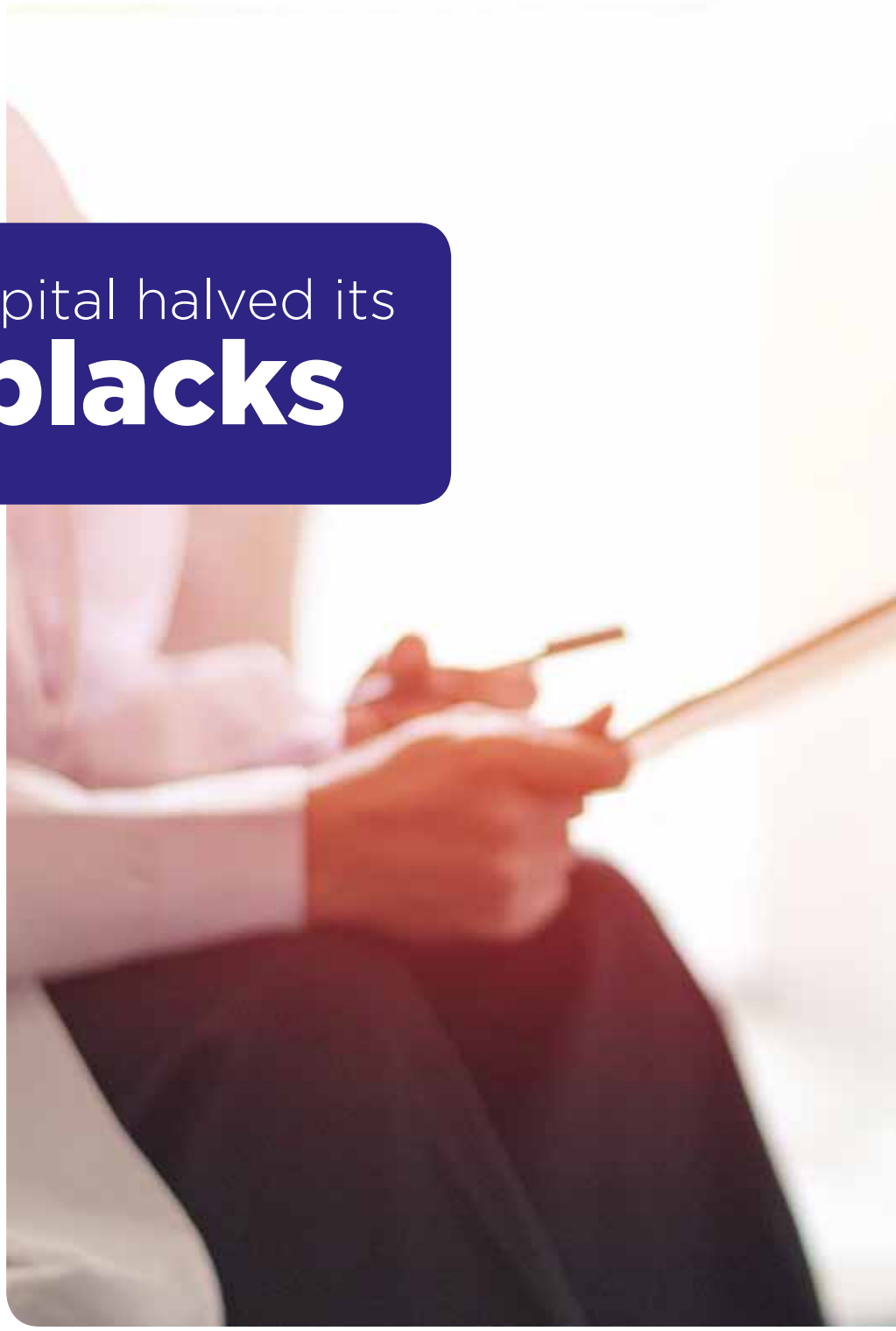
How this hospital halved its code blacks

Amy Sarcevic



It used to be a familiar scene for Emergency Department Director Prof. Paul Preisz. A psychiatric or drug-affected patient being ferried to and from departments. Too behaviour-disturbed to be treated by medics. Too physically unwell to be in the sole care of psychiatrists. Often left to sit for hours in a crowded waiting room, or in the back of a police wagon, the patient's condition would worsen, agitation would breed and violence would typically ensue.

In fact, scenarios like this are said to account for a large portion of Australia's hospital violence statistics. In some metropolitan hospitals, up to 10,000 code blacks are reported every year; and across the sector, up to 38% of workers have experienced physical assault at least once in their careers.

Witnessing too many patients with comorbidities falling through the cracks in the system, Prof. Preisz founded Australia's first ever PANDA (Psychiatric, Alcohol and Non-prescription Drug Assessment) unit at St. Vincent's Hospital in November 2020 — a holistic pit stop where people could have their complex needs addressed at once. Never turned away, patients presenting at the PANDA unit are immediately granted a quiet personal space where a team of toxicologists, psychiatrists, doctors and other specialists provide a unique blend of acute and social care.

The result: a 50% reduction in 'code blacks' since the unit's inception, amongst a cohort that would typically present the highest risk group for security threats.

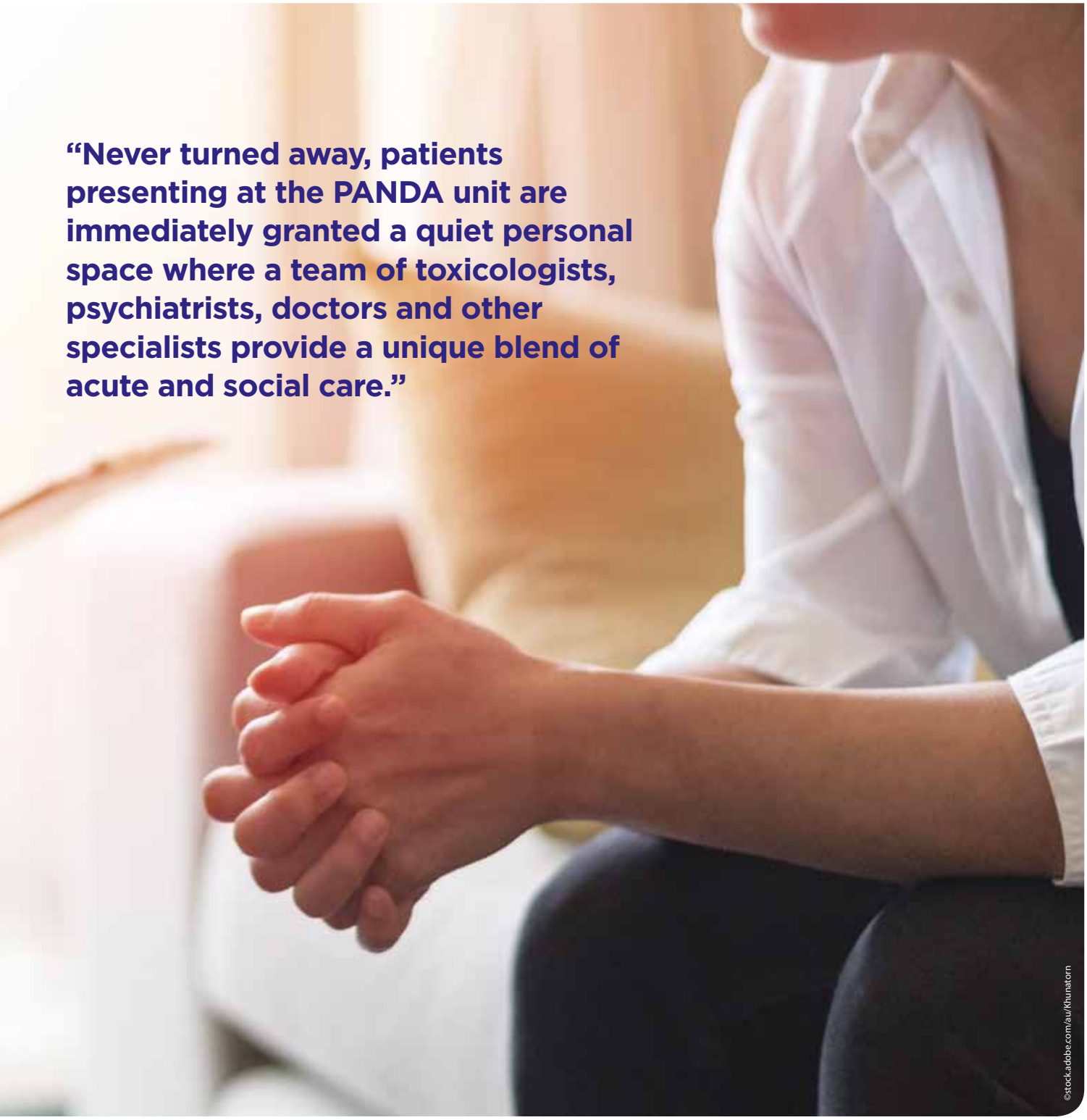
Today, Prof. Preisz — whose unit has treated upwards of 3000 people to date — spends more of his time poring over thank you cards from patients, than security incidents from staff.

"The reduction in patient violence is quite a remarkable side effect of the PANDA initiative," he told *Hospital + Healthcare*. "With our main goal to adequately treat complex comorbidities, it wasn't what we set out to achieve. However, given the current rates of violence among this patient cohort, it is certainly something to be celebrated."

In fact, Preisz recalls receiving a heartfelt thank you note from one of his most challenging patients. Recently out of jail, the man was homeless, had a significant drug history and was experiencing methamphetamine-induced psychosis when he presented at the PANDA unit. In a traditional healthcare setting, he would likely have become aggressive or violent. At PANDA, he remained cooperative and amenable to treatment.

"The man was immediately given a private bed away from the commotion of the emergency department, where staff were able to diffuse his temperament and provide tailored care. Shortly after admitting him, we placed him on a fairly strong detox program and provided the necessary social supports. It turned out the patient had a significant background of post-traumatic stress disorder and a range of medical issues, including high blood lipids and prediabetes. We arranged housing for him and enrolled him as an outpatient to provide longer-term medical care," Preisz said.

Not long after his admission, Preisz and team were surprised to receive the man's



"Never turned away, patients presenting at the PANDA unit are immediately granted a quiet personal space where a team of toxicologists, psychiatrists, doctors and other specialists provide a unique blend of acute and social care."

letter in the mail — a level of gratitude not often seen amongst people presenting to ED in such circumstances.

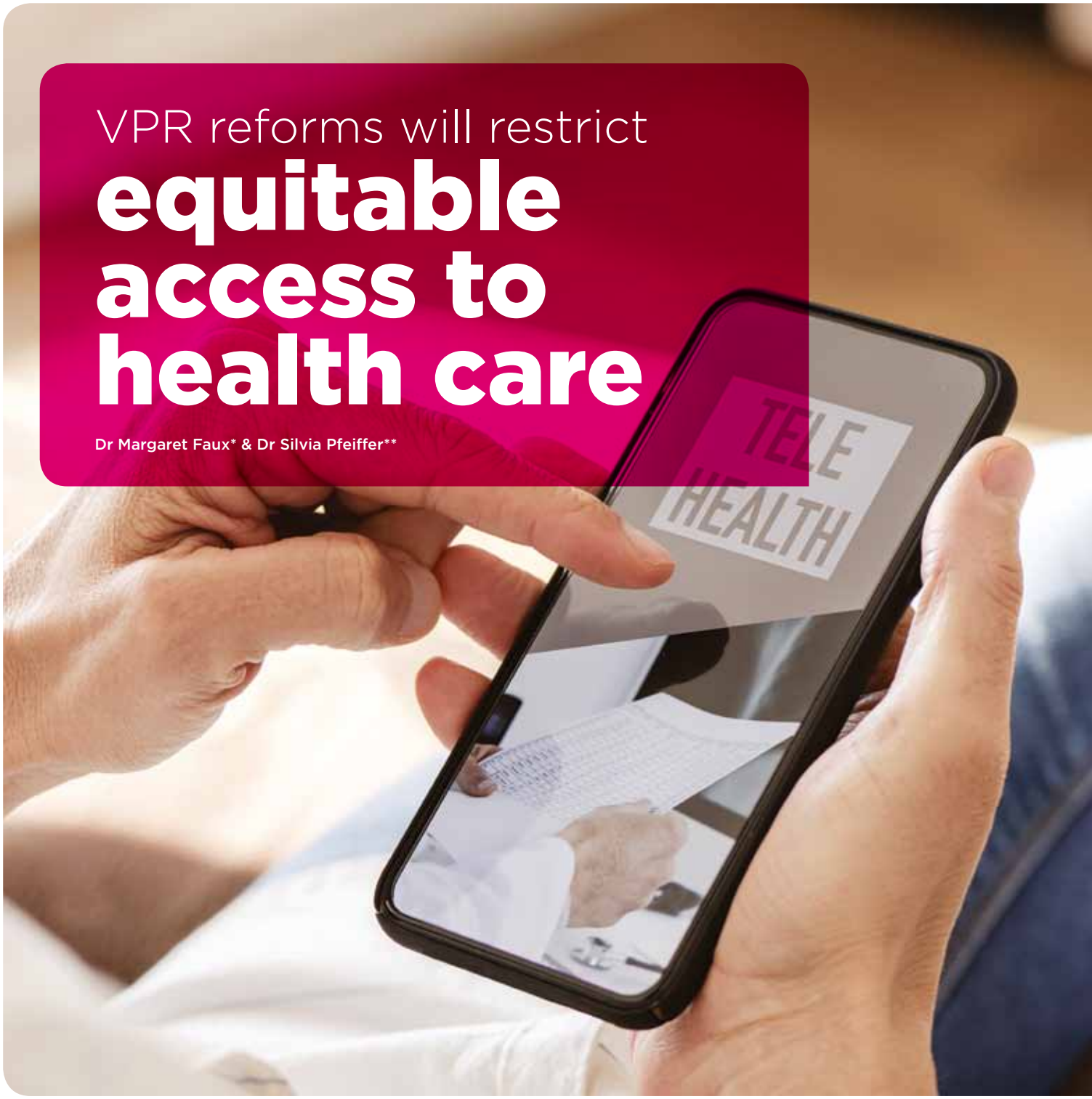
"It's quite different to how things could have unfolded in a traditional healthcare setting. I recall seeing patients of a similar nature being sent to and from the very same wards in an ambulance because none of the staff felt they had the right specialty to take care of the person. When they are finally admitted, the patient is rightly frustrated and often becomes threatening towards staff, or physically lashes out. Providing tailored care and placing them in a low stimulation environment sees patients with complex comorbidities behaving quite differently," Preisz said.

Staff experiences on the PANDA ward are positive too, with many relishing the experience they gain at the facility.

"A junior doctor of mine once said something lovely," Preisz recalled. "He told me the experience of working at the PANDA unit had made him not only a better doctor, but a better person. It's wonderful to hear feedback like that, because it shows harmony between people's expectations and the reality of working in health care. People often go into the field because they want to help people and have a rewarding experience in doing so. In traditional wards, workers can grow disheartened when they don't get the appreciation they deserve — or are met with violence instead. At PANDA, the environment fosters better patient/staff relationships, giving workers a better sense of having made a meaningful difference."

The PANDA model is already being considered in other major hospitals and there is increasing talk about expanding the model, in light of its success. Preisz hopes it will be the start of a growing trend — for the sake of patients and staff.

"Every patient has the right to receive the care they need; and every healthcare worker has the right to a safe working environment. Thankfully the PANDA unit provides both."



VPR reforms will restrict equitable access to health care

Dr Margaret Faux* & Dr Silvia Pfeiffer**

From July this year, Australia's MBS telehealth system is going to change once again, and this comes after two years of constantly evolving rules and regulations regarding the delivery of healthcare services in this country. In a few short months, the controversial new voluntary patient registration (VPR) laws will come into effect.

According to the 10 Year Health Plan, MBS telehealth will not be available to a patient unless they're registered with the GP practice. In application, the reforms will extend the "existing relationship rule" GPs currently experience with telehealth consultations and a number of other healthcare arrangements. Although the new laws are described as 'voluntary', patients will be unable to access a doctor or seek medical treatment via telehealth unless they're registered with the practice.

This leaves patients with no other option but to register, leading to industry concerns about practical compulsion in Australia's healthcare system.

Here, we explore why Australia's misleading new VPR reforms will restrict equitable access to healthcare and how this will hinder our nation's healthcare outcomes.

Voluntary patient reforms and the MBS

In line with the 10 Year Health Plan, the government will invest $69 million in Services Australia to create the VPR mandate. The scheme will be open for registration from July and MBS telehealth for general practice would be contingent on the patient being registered from 1 July 2023.

To be eligible for registration, patients must visit a practice at least three times during a two-year period, followed by one visit every two years thereafter to preserve registration. Once these reforms come into effect, only registered patients will be able to access MBS-funded telehealth. Whereas, currently for patients to access MBS subsidised telehealth with a GP, they must have had at least one fact-to-face consultation in the last 12 months with a treating doctor or practice.

The VPR scheme won't just affect MBS telehealth, but will also impact chronic disease management plans and medication reviews such as the simple act of requesting a script refill. As part of the 10 Year Health Plan, the government anticipates that payments related to 'quality and outcome measures' will drive 40% of primary care funding, rather than fee-for-service payments.

Understandably, there's significant concerns about the reforms, including how the scheme will act as a barrier for the fair access to health care in Australia.

What this means for patients

It's suggested that VPR will strengthen the relationship between the patient, the practice and the practitioner. But ultimately for Australians to be able to access a doctor for MBS items like telehealth, they have no other option than to be registered and must meet registration criteria, which has the feeling and characteristics of practical compulsion.

"The VPR scheme won't just affect MBS telehealth, but will also impact chronic disease management plans and medication reviews such as the simple act of requesting a script refill."

The High Court has confirmed that doctors and patients enter private contracts. This means that doctors can charge what they want and patients have a reciprocal legal right to choose their doctors. In the case of VPR, the sanctity of this contractual relationship appears breached by a type of third line forcing, whereby patients will essentially be forced to deal exclusively with one doctor or medical practice. In any other area of law, businesses who forced customers into exclusive relationships, or marketed their offering as voluntary when it is really mandatory, would come to the attention of the Australian Competition and Consumer Commission (ACCC) for engaging in misleading and deceptive conduct.

However, in the healthcare system we seem to be turning a blind eye and the reality is that patients' health outcomes will be restricted as a result of the new VPR scheme. Already, it seems the government has invested some of the $69 million in taxpayer money into building the technological infrastructure required to support the new controversial reform. Yet, this approach to primary care does not seem to be focused on improving patient outcomes, rather accelerating bureaucratic control with red tape.

A new era of healthcare reform and coercion

There's talk of the VPR mandate being modelled on Britain's National Health Service (NHS). The key difference is that under the NHS, no money changes hands. In fact, healthcare consultation is free at the point of need and it's completely illegal for patients to pay when seeing a GP. In Australia, payment schemes are the polar opposite, and GPs can charge whatever they want.

The concern is that the Australian Government is forcing patients to register, which goes against the right to health care, is out of touch with the modern digital healthcare system and ultimately feels paternalistic. The VPR scheme will compel patients into a relationship with the practitioner and into an environment where the practice can still charge what they want.

For example, Aussies will no longer be able to visit their local bulk billing clinic on the weekend to get a last-minute script renewed when their regular GP has a lengthy waiting list, and will instead only be able to see their registered GP where they may still be charged $90.

From a telehealth perspective, any administrative obstacles introduced to limit patients' access to health care will be the cause of a return to pre-pandemic clinician and patient behaviour, including a reduction in enabling fair and equitable healthcare. People in rural and remote areas will be particularly disadvantaged as they won't have the ability to see their practitioners or avoid out-of-pocket costs.

As we approach July and the rollout of the new VPR scheme, we're left feeling uncertain about how this will affect the future of Australia's healthcare system. What we do know is that access and equitability to critical healthcare services such as telehealth, chronic disease management and medication reviews will become restricted under the new reforms. The Australian Government must reassess the VPR scheme and consider how putting these reforms into effect will restrict equitable access to health care and ultimately hinder Australia's healthcare outcomes.

**Dr Silvia Pfeiffer, CEO and Co-Founder, Coviu. Pfeiffer has more than 15 years' experience with web video and has worked for Accenture, Google, Mozilla, NICTA and CSIRO. Coviu is her second start-up. She has a PhD in computer science, a masters in business management and has published two books on HTML5 video and one on video consultations for healthcare businesses.

*Dr Margaret Faux, CEO, Synapse Medical. Faux is a Solicitor of the Supreme Court of NSW and the High Court of Australia, having practised law for over two decades. She is also an academic scholar of Medicare and health insurance law, who recently completed her PhD on the topic of Medicare claiming and compliance, and has published in peer reviewed journals on the topic of Medicare compliance.

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1 Marshall, Caroline, and Buising, Kirsty, et al. "Use of portable air cleaners to reduce aerosol transmission on a hospital COVID-19 ward". Infection, Disease & Health, vol.26, 2021, pp. S4-S4.

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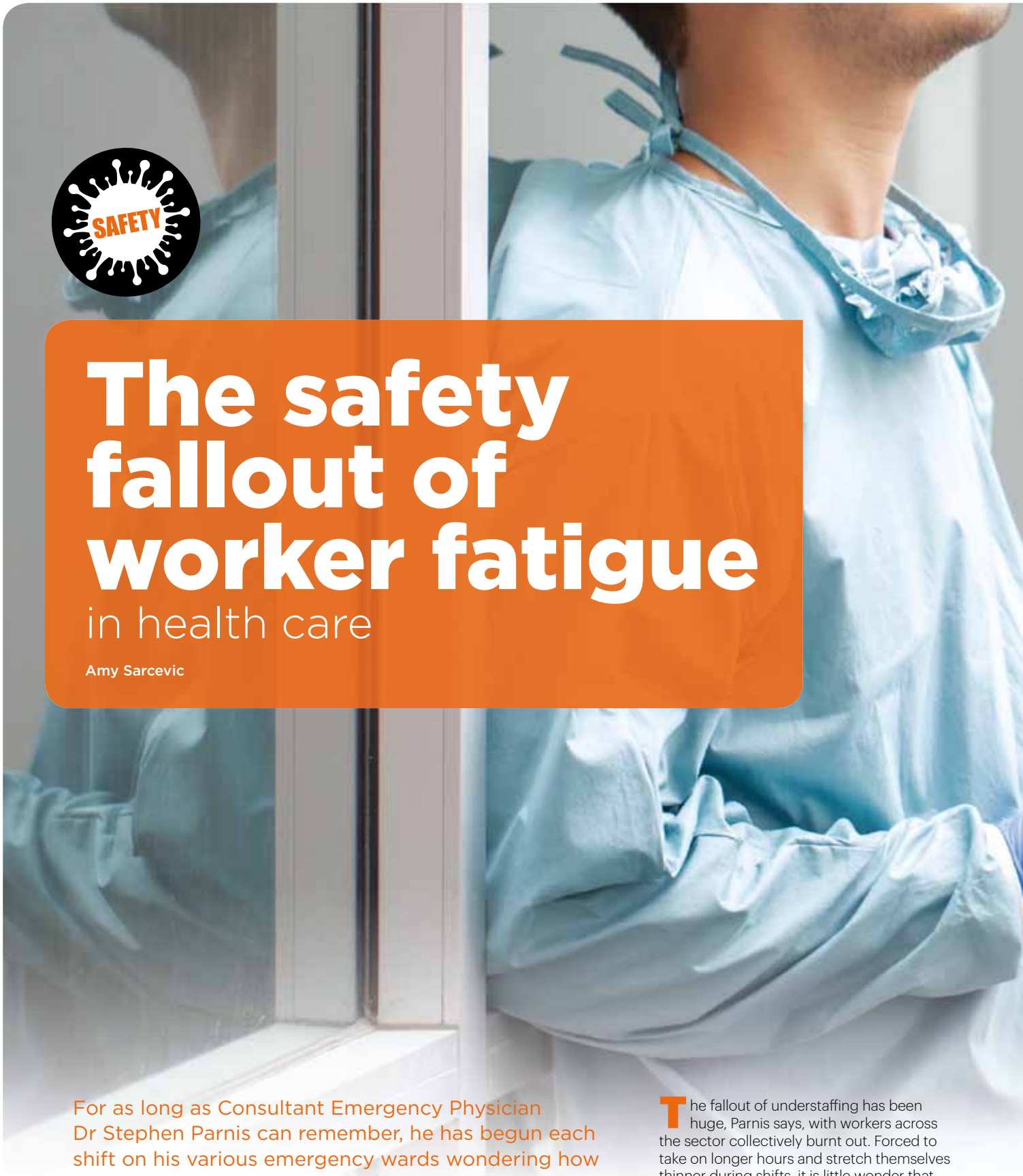

The safety fallout of worker fatigue in health care

Amy Sarcevic

For as long as Consultant Emergency Physician Dr Stephen Parnis can remember, he has begun each shift on his various emergency wards wondering how many workers will be present. Absenteeism — due to COVID-19 infections and isolation orders — has been so rife through parts of the pandemic that some teams have regularly had to operate at half capacity.

The fallout of understaffing has been huge, Parnis says, with workers across the sector collectively burnt out. Forced to take on longer hours and stretch themselves thinner during shifts, it is little wonder that 56% are "exhausted" and 86% under stress.

With mental fatigue at an all-time high, so too, Parnis believes, are clinical errors.

Cognitive impairment

"Worker fatigue is something that all health systems need to be very mindful of at present," Dr Parnis told Hospital + Healthcare. "In emergency medicine, it is fair to say that whether you are a doctor, nurse, allied

"In terms of procedures, a fatigued person might take longer, or be less likely to get optimal outcomes. They could miss an injury that they might otherwise have picked up."

health professional, administrative worker, or support person, you are rarely — if ever — coming to work feeling rested in these pandemic times. When you're tired to this degree, you are at real risk of making critical mistakes — whether that's an error of clinical judgement, an oversight, or a physical slip-up involving a fine instrument."

Indeed, a federal investigation in 2019 revealed that working while tired is no less dangerous than working under the influence of alcohol. Academia agrees, with prolonged periods of demanding cognitive activity linked to reduced alertness and a decline in mental functioning. As a result, tired employees are 70% more likely to be involved in a workplace accident.

Within health care, this reduction in cognitive ability can manifest itself in a variety of dangerous ways, Parnis warned.

"In terms of the cognitive side of practice, tired workers could miss important details on a chest X-ray or a CT scan. They might not be thorough enough in their history-taking, or as sharp in their decision-making, leading to an incorrect diagnosis or poor management plan.

"In terms of procedures, a fatigued person might take longer, or be less likely to get optimal outcomes. They could miss an injury that they might otherwise have picked up."

Tired workers may also struggle to manage situations with varying urgency, where quick decision-making is vital. "Often in health care, workers have to make the call on things that can wait for hours versus things that need to happen instantly. Getting this wrong could be a life or death scenario," Parnis said.

Communication and listening skills could also take a hit from mental fatigue, with further consequences for patient safety. "There are enormous levels of noise in healthcare settings at the best of times. Add to that mental fatigue — and mandates for wearing masks or shields — and clarity on what is said is not always easy. This could present itself as a significant safety hazard," Parnis said.

Stretching roles

The understaffing has also seen some workers being delegated duties that pertain to their former experience, but sit outside of their current responsibilities.

"I needed to re-learn how to perform ECGs recently, something I haven't done for several decades. At this stage in my career, my ability to master new or long-disused skills isn't what it used to be. I was acutely aware of the need to avoid making errors at every step," Parnis said.

Compassion fatigue

The mental fatigue epidemic is taking its toll on workers, with 42% of 600 frontline healthcare staff surveyed "less willing" to work than before the pandemic. A consequence of this is 'compassion fatigue', Parnis warned — where a person's ability to feel empathy declines.

"Personally, I know I am showing early signs of burnout when I lose my ability to care properly about a patient's circumstances. Compassion in healthcare is very important — especially in times where workers are required to 'go the extra mile' during shifts. It's what motivates us to do our jobs well and perform tasks to the highest degree. No doubt, rafts of (rightfully) unwilling workers will have safety consequences for the sector."

Training

The impact of worker burnout could even interfere with medical training and present longer-term safety issues for healthcare.

"There are medical students in the system now that have never known clinical medicine outside of pandemic times. This has interfered with their access to patients, and I'm wondering how this will play out in their careers. It may also impact their decisions about working in medicine long-term, adding fuel to the chronic understaffing problem that already exists within health care," Parnis said.

The solution?

While Dr Parnis appreciates the gesture from hospital administrators, he would like to see fewer emails referring psychological support, and more encouraging annual leave. "There is no substitute for time away, doing different things, or doing nothing at all."

SAFETY

New obstetric guidelines promote parent-centred communication

The Australasian Society for Ultrasound in Medicine (ASUM) has released new guidelines mapping a way forward for sonographers to open dialogue and be more transparent with obstetric patients about the results of their scans.

ASUM Chief Executive Lyndal Macpherson said the guidelines were the result of broad collaboration with a multidisciplinary team including parent groups, patient advocates, sonographers, radiologists and obstetricians, and had a clear priority to improve care for expectant parents by improving communication between them and health professionals, particularly when there are unexpected or ambiguous fetal or maternal findings.

The guidelines build on PhD research by sonographer Dr Samantha Thomas — Sonographers' level of autonomy in communication in Australian obstetric settings — and feedback from expectant parents who were keen to have reassurance from their sonographer the baby was developing well rather than waiting for their next specialist or midwife appointment.

Macpherson said the guidelines were not mandatory but rather were a first step in opening parent-centred communication in obstetric ultrasound with a focus also on collaboration and continuity of care between sonographers, reporting specialists and referrers. "Opening up clear lines of communication with a set of guidelines that will help public and private settings consider this model really responds to what parents are wanting and improves the health care on offer to patients," Macpherson said.

"Our pilots in public and private settings have been an overwhelming success. Sonographers are on the frontline conducting these scans and parents are telling us delayed communication from the day of the scan until the next time they see a doctor concerns them.

"This is not only about communicating findings with parents but also equipping sonographers to share their communication with the reporting doctor so there is a clear understanding of the information being shared across all professionals in the care team.

"Ongoing management of a complicated diagnosis will of course sit with the doctor–patient relationship, but our new guidelines can support sonographers to start a clear, unambiguous, compassionate and judgement-free communication process that is sensitive to the parent journey."

Parent-centred communication in obstetric ultrasound has trialled in Fiona Stanley Public Hospital, Perth, and PRP Diagnostic Imaging — Eastwood, NSW, with a high rate of parent and clinician satisfaction.

"When forming organisational policies — public facilities and private radiology and obstetric practices may refer to ASUM's Parent-Centred Communication in Obstetric Ultrasound Guidelines to consider implementing new ways of working with sonographers and parents," Macpherson said.

The Pink Elephants Support Network consulted closely on the guidelines and board member Dr Melanie Keep said after the loss of her own baby at 11 weeks in 2019, she was moved to ensure other women experienced more open and supportive communication when faced with unexpected and sometimes traumatic pregnancy news.

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People making tough times tolerable

The global pandemic proved that strong people could make the impossible happen according to Dianne Joannidis, Manager — Aged Care & OxyCare at BOC in Australia.

Q: What was the biggest pandemic issue for aged care providers?

It was crucial for aged care and healthcare providers to have a constant supply of medical gases, respiratory products, and services so residents with health conditions were supported.

BOC managed the supply of these vital products, allowing our Aged Care Partners to focus on the other issues the pandemic presented.

Q: How did your team deliver during the massive spikes?

I'm proud of the work our team did with customers to ensure a balanced and fair delivery program of medical devices. This avoided the need for panic buying.

BOC upscaled production so additional cylinders were available to cover surges and increased medical device stock.

Thankfully Australia limited the virus early and this helped us build capacity to deliver enough medical product for our needs and beyond. This allowed us to supply countries in Asia and the South Pacific in their time of need. BOC was proud to collaborate with humanitarian agencies and sent much needed medical gas and equipment to various parts of our region to help ease the crisis. India, Papua New Guinea, Fiji, Tonga, and the Solomon Islands all received assistance.

Q: How do you think BOC differs from other suppliers?

BOC is able to manufacture multiple times the medical oxygen consumed nationally on a typical day.

We also have the capacity to store months' worth of oxygen across the nation, making us the 'go-to' company for oxygen supply to hospitals and aged care facilities.

Our operations team and relationship managers closely monitored stock to ensure reliable supply and communicated personally. Our team also engaged with our manufacturing partners globally to ensure order volumes could increase and be delivered.

Q: How did you ensure smooth deliveries of critical medical gas and equipment during the pandemic?

We significantly invested in our rental fleet of medical equipment renewing and extending our range of rental oxygen concentrators, regulators, flowmeters and cylinder handling equipment. BOC ensured stock was in multiple locations across Australia and complemented our extensive transport fleet to deliver where and when needed.

Medical devices were often airfreighted into the country instead of by traditional sea freight. This ensured products were available for customers as soon as possible, even though costs couldn't be fully recouped.

Q: Was cleaning and hygiene a bigger safety issue?

Safety is always top priority for BOC and we developed special disinfection protocols for rental medical equipment and cylinders to ensure the safety of our customers and staff.

Q: How do you future-proof the supply of medical gases and equipment for unexpected situations?

We are constantly collaborating with aged care and healthcare providers to understand their ongoing needs. That's the big learning — planning is key and it works.

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Hospital pharmacists' role in safe management of COVID-19 treatments

Kristin Michaels, SHPA Chief Executive

The recent introduction of oral antiviral treatments has shaken up the COVID-19 healthcare landscape, once again calling on the expertise and services of Australian hospital pharmacists as we progress towards the endemic stage of this pandemic.

Medicine information centres led by clinical pharmacists are key hubs in this knowledge network and must be supported to ensure accurate and timely information reaches pharmacists and their healthcare colleagues handling novel COVID-19 treatments.

Secured by the Australian Government at the end of 2021, nirmatrelvir/ritonavir (PaxlovidR) and molnupiravir (LagevrioR) were recently distributed via the National Medical Stockpile to public hospitals, residential aged-care facilities and Aboriginal Community Controlled Health Organisations (ACCHOs). On 1 March 2022, molnupiravir (LagevrioR) was listed on the Pharmaceutical Benefits Scheme. This has broadened treatment accessibility beyond the realms of acute healthcare facilities, but has exposed safety gaps which clinical pharmacy support and services are needed to fill.

Throughout this pandemic, hospital pharmacists have been essential in overseeing the safe management and supply of COVID-19 vaccines and intravenous medicines. The new oral antivirals mitigate the progression of COVID-19 infection, reducing hospital admission or death from any cause by up to 89%; while this data pertains to earlier variants, there is demonstrated efficacy with Omicron.

A recently published article in SHPA's flagship peer-reviewed journal has outlined the 'Pandora's box' relating to oral COVID-19 treatments, authored by expert pharmacist representatives from the National COVID-19 Clinical Evidence Taskforce.

The safe use of PaxlovidR requires a thorough medication history and individual patient assessment of all medications, including those bought over the counter. Careful clinical consideration needs to determine if concurrent medicines can be temporarily withheld, appropriately dose-reduced or avoided altogether in light of clinical factors such as significant renal impairment.

Many medications with narrow-therapeutic and high toxicity ranges are known to be affected by these interactions including some antipsychotics and anticoagulants, while other interactions render PaxlovidR ineffective altogether.

Clinical assessment of medicine interactions is a core function of all expert clinical pharmacists who are essential to advising on the quality and safety of these new treatments. A recent 3-year (unpublished) review of over 11,000 immunocompromised patients from Melbourne's Alfred Hospital found a third of patients would not have been able to receive PaxlovidR due to such interactions. A similar review of COVID-19 positive patients found 37% of patients would have also been excluded from PaxlovidR therapy, highlighting the significant extent to which expert input is required in key patient populations.

It is into this breach that medicine information centres, led by expert clinical pharmacists, step in. Specialist medicines information pharmacists are trained to deal in the complex clinical assessment of medicines, and therapeutic recommendations can be tailored to the individual patient and their specific clinical factors. Not supporting widespread access to specialist medicine information centres to deal with these newly introduced oral treatments leaves wide knowledge gaps that product information and standard consensus guidelines are simply unable to fill. Even one of the most widely shared drug interaction checkers for PaxlovidR among the clinician community, the University of Liverpool's COVID-19 Drug Interactions Checker, currently omits many medicines


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including chemotherapy medicines and some HIV antivirals.

It therefore comes as no surprise that some jurisdictions are centralising distribution models within designated public hospitals, where specialist COVID-19 teams — with expert clinicians and specialist clinical pharmacists — review and assess individual patients and their medications before commencing COVID-19 treatments. Many of these specialist teams have been in place since 2021 for COVID-19-positive inpatients being treated with intravenous remdesivir and sotrovimab, also accessed from the National Medical Stockpile.

Some states are using this model to support GPs and patients in the community. However, this level of clinical pharmacy review is not currently embedded in residential aged care facilities or as part of ACCHOs, nor are expert clinical pharmacist reviews or medicines information pharmacists available, meaning GP prescribers are unable to have their patients access a clinical pharmacist review and dispensing service.

Specialist hospital pharmacists are fundamental to bridge these care gaps, supporting treating clinicians in the next phase of this pandemic to improve patient outcomes and reducing pressures faced by hospitals.

The new oral COVID-19 therapies are rightly receiving an enthusiastic welcome,

“Careful clinical consideration needs to determine if concurrent medicines can be temporarily withheld, appropriately dose-reduced or avoided altogether in light of clinical factors such as significant renal impairment.”

and they provide a much-needed rapid response to COVID-19 infection for those in the wider community. Clinical hospital pharmacy expertise is needed to support the safe, timely and quality use of new oral COVID-19 therapies to reduce related hospital admissions.

Put simply, hospital pharmacists are crucial to their success.

Traceability in ultrasound infection prevention: standardisation through digitisation

Ultrasound probes are used throughout many hospital departments. During use ultrasound probes can contact a range of patient tissues, including sterile tissue, the bloodstream, mucous membranes, non-intact and intact skin. Proper probe reprocessing according to the intended use of the device is essential to help protect the next patient from infection risk. The Spaulding classification is adopted in Australian and New Zealand national standards to determine these minimum disinfection requirements, based on how the device will be used.[1-3]

Tracking or traceability refers to the collection of medical device identifiers, reprocessing information and then linking this to the patient record.[1,2] Traceability in ultrasound infection prevention forms part of the record that a facility has met its standard of quality and safe care for patients undergoing sonographic procedures. The Australian National Safety and Quality Health Service (NSQHS) Standards, AS/NZS 4187 and the ACIPC-ASUM guidelines require full traceability to the patient for sterilisation and high level disinfection of semi-critical and critical medical devices, including ultrasound probes.[1-3]

Why is traceability compliance required?

Traceability is essential in an outbreak investigation to determine the extent of patient notifications and device recalls.[1-3] In a non-outbreak setting, it allows a facility to demonstrate they meet their duty of care to patients and for healthcare accreditation purposes. Action 3.17 of the NSQHS Standards requires health service organisations have compliant traceability processes for critical and semi-critical devices.[1] The Australian Commission on Safety and Quality in Health Care (ACSQHC) expects hospitals to be compliant with Action 3.17 by December 2022.[4]

It is important facility policies specify the information that must be collected to enable traceability of ultrasound probes and their reprocessing information to patients. Read our Clinical Bulletin on the information that needs to be captured and linked for every semi-critical or critical ultrasound probe use, according to national standards.[1-3] Once policies are in place, education and training for end users is essential so the required information is consistently documented for every use of the probe on a patient.

Digitisation supports standardised ultrasound infection prevention

AS/NZS 4187 recognises that "HSOs should be working towards an electronic tracking/process record system."[2]

Documentation of the required traceability information can be completed manually using logbooks and other paper based systems, however introducing digitisation into the workflow can have several benefits. Digitisation ensures information capture and labelling is standardised across the entire ultrasound probe reprocessing workflow for all ultrasound users across healthcare departments (e.g. using RFID technology and printers). This can help reduce the risk of manual administrative error and incomplete record keeping. Digital records permit paperless linkage to the patient record which can be backed up securely. Digital solutions can also streamline compliance practices to ensure that sensitive patient data is protected from unauthorised use.

Peace of mind with digitised traceability

In healthcare, a robust traceability system can be used as a tool for investigating and identifying the affected patients in the event of an outbreak or infection prevention breach. Implementing digitisation into traceability workflows can ensure record security, accuracy and efficient capture across the ultrasound infection prevention workflow.

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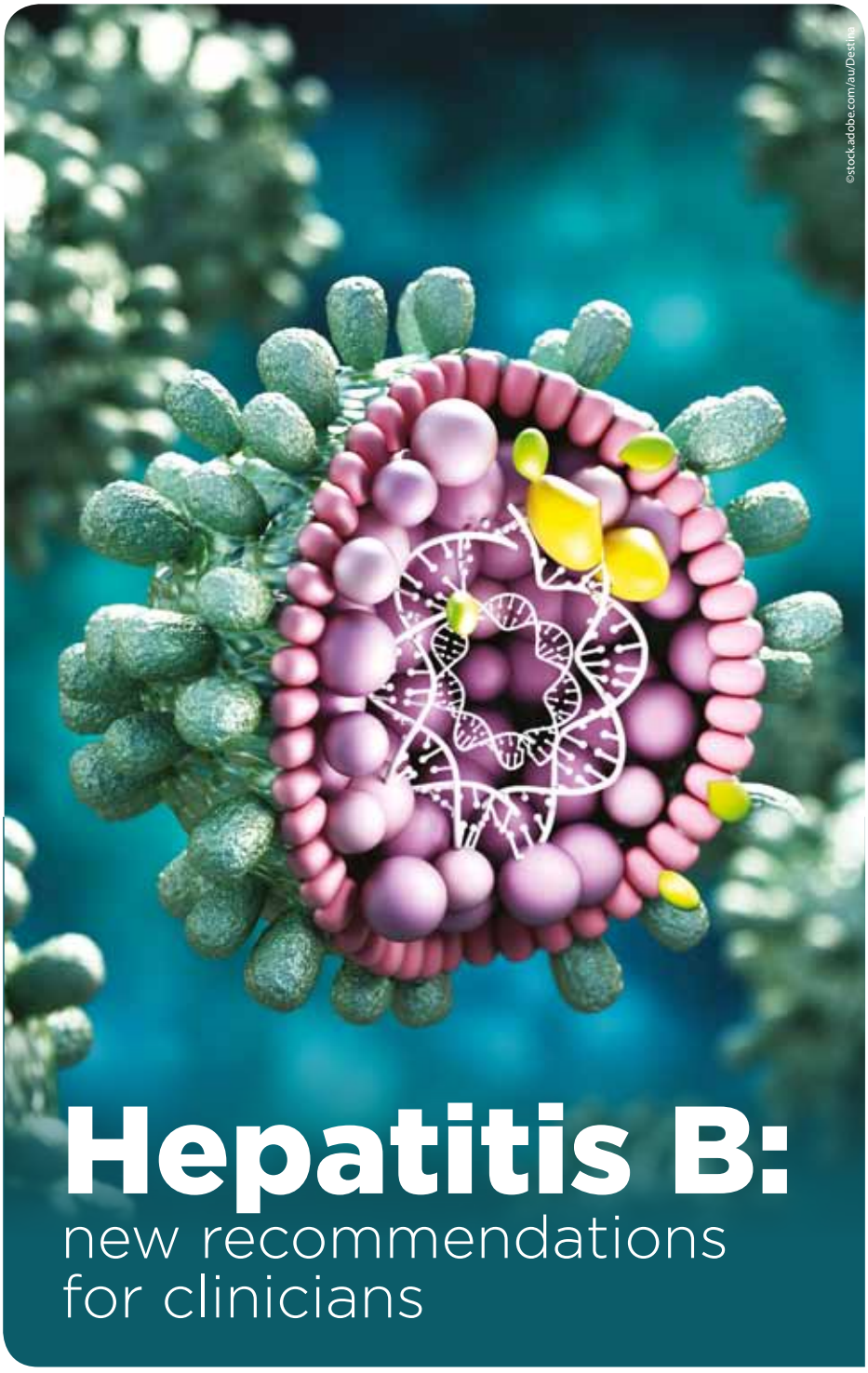

Hepatitis B: new recommendations for clinicians

New recommendations for the management of hepatitis B in Australia have been released in a bid to improve awareness of chronic hepatitis B among clinicians and to increase detection of cases that currently remain undiagnosed.

The recommendations, published in the *Medical Journal of Australia*, provide guidance to clinicians for managing hepatitis B and recognising groups at increased risk of hepatitis B virus (HBV) infection, and describe appropriate and timely screening strategies.

The Gastroenterological Society of Australia (GESA) initiated the development of the new resource, and gastroenterology and infectious diseases physicians formulated it with input from primary care physicians and consumer representatives.

"[The statement] covers six main topics that include epidemiology, natural history, diagnosis and monitoring, treatment and complications, and specific subgroups, such as people with viral coinfection, immunosuppressed individuals, those with renal impairment and pregnant women, especially with regard to preventing vertical transmission," wrote the authors, led by Associate Professor John Lubel, a gastroenterologist and hepatologist at Alfred Health and Monash University.

"The expected benefits of this consensus statement include a standardised approach to the management of hepatitis B across varied health care settings in Australia. At a community level, the benefits of producing locally relevant guidance are ultimately to improve the health care, experience and outcomes of people living with hepatitis B."

In 2020 an estimated 222,559 people in Australia were living with chronic hepatitis B, representing 0.9% of the population. In Australia, 46.3% of people with chronic hepatitis B were born in the Asia–Pacific region, most frequently in China, Vietnam and the Philippines. Aboriginal and Torres Strait Islander peoples also have higher prevalence, representing 7% of people with chronic hepatitis B.

"Australia has committed to the National Hepatitis B Strategy goals, aiming to improve diagnosis, treatment and care and therefore reduce attributable mortality," wrote Lubel and colleagues.

"We remain well short of reaching targets, with an estimated 27% of chronic hepatitis B cases remaining undiagnosed, 22.6% receiving care (target 50%) and just 10.7% of people being treated (target 20%).

At that rate, Australia will not reach the Strategy 2022 targets until 2045 for the proportion in care (target 50%) and 2046 for the proportion receiving treatment (target 20%).

"Although the threshold of ≥2% prevalence is the commonly accepted cut-off for HBV screening, there are cost-effectiveness data from similar settings to Australia (US and Netherlands) supporting the application of a threshold below Australia's average prevalence of 0.9%," wrote Lubel and colleagues.

"Consequently, many experts suggest universal screening could be extended to Australian adults (aged 20–79 years) in whom hepatitis B status has not been documented.

"In Australia, all clinicians need to recognise groups at increased risk of HBV infection and implement appropriate screening strategies," Lubel and colleagues concluded.

"Once identified, monitoring and timely commencement of treatment significantly reduces complications of chronic hepatitis B.

"In addition, it is imperative that clinicians understand that in chronic hepatitis B, cirrhosis is not a prerequisite for development of hepatocellular carcinoma (HCC), and non-cirrhotic people with chronic hepatitis B require risk evaluation and, where appropriate, should be enrolled into a HCC surveillance program."

Talking Safety: Invest in Quality, Certified Solutions

Organisations worldwide are adopting and implementing technologies to help drive improved clinical outcomes, financial viability and operational efficiencies.

With so many decisions related to features and functionality, it can be easy to overlook the most foundational questions when selecting new healthcare solutions. Is the product designed for long-term safety? Does it have the industry certifications and rigorous testing that helps provide peace of mind for users and leaders alike?

To choose quality solutions for today's healthcare environments, prioritize these important factors.

Certifications

Official industry certifications instill confidence that safety is at the foundation of each product design. ISO certifications are trusted international standards for products or services that often relate to quality or safety.

Look for products manufactured by companies that are 9001:2015 certified, which demonstrates a commitment to best-practice procedures in the facility. Specifically for healthcare, ISO 13485:2016 certification points to a robust quality management system overseeing healthcare product manufacturing.

Battery Safety

Powered medical carts should have their own certifications for both the power system and the entire cart. Look for a label on the cart as proof of certification. UL/EN/IEC 60601-1 and CAN/CSA C22.2 No.601.1 M90 are popular standards that regulate medical electrical equipment.

Invest in healthcare solutions with battery technology known for safe chemistry like Lithium Iron Phosphate, often referred to as LiFe, to help reduce the risk of a cart battery or electrical-related problem.

Rigorous Testing

Leading manufacturers will exceed even the most rigid quality expectations for professional-grade solutions. This ensures you invest in long-lasting products that promote safety and provide peace of mind.

100% functional testing should be performed on every product with cycle testing to help ensure quality and reliability. Special tests like twist stability, brake cycling, intentional dynamic abuse and tip testing work to validate quality construction for medical carts, wall workstations and more. Four-times load testing will also help ensure product safety for the rigors of regular use in healthcare settings.

Warranty

Product warranties indicate the confidence a company has in the ability of its product to perform over a long period of time. While a long warranty is a good indicator of a reputable company, healthcare organizations should request a reliability performance test report from prospective vendors. In addition to a generous warranty, 24/7 access to customer care and technical support from the actual manufacturer also helps ensure accountability.

Leading Ergonomics

Another key component to safe, quality designs is ergonomics. When clinicians or staff can work comfortably at a workstation, they have a lower risk of developing minor aches and pains that can lead to larger health and safety problems in the future, including musculoskeletal disorders (MSDs).

Choose healthcare solutions from organizations known for their ergonomic expertise. Designs should be flexible and height adjustable to accommodate a broad range of users, usually the sitting 5th percent female up to the standing 95th percent male. Look for products that offer additional customizations, including keyboard tray height and monitor tilt and pan, that promote an ergonomic fit.

A Trusted Partner

Engaging with a reputable industry leader with a long track record of safety will help ensure an effective implementation and most importantly, long-term adoption and success.

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Pathway out of the pandemic

In mid-2020, faced with a rising wave of COVID-19 infections — a previously unknown disease with neither vaccine nor effective treatment — an urgent, improvised collaboration between a Melbourne hospital, a primary health network and a community health organisation created a system that supported thousands of lives.

The multidimensional constructed model, which included financial, social and mental health supports, resulted in more than 80% of COVID-19 patients being treated successfully in their own homes, monitored by GPs, leaving hospitals free to care for the seriously ill.

Dubbed the West Metro COVID-Positive Pathway, the model was quickly adapted by other health services and is now the standard tool for pandemic management across Victoria. In a paper published online in the *Medical Journal of Australia*, a team of experts led by its architects say the pathway approach can now be adapted to improve management of other infectious or chronic diseases.

"The Pathway was originally designed by North Western Melbourne Primary Health Network (NWMPHN), the Royal Melbourne Hospital (RMH), and community health organisation cohealth, supported by the Victorian Department of Health," explained co-author Janelle Devereux, NWMPHN's Executive Director for Health System Integration.

"It went into operation on August 3, 2020, as the state government declared a state of disaster. A month later, three more hospitals joined in — Djerriwarrh Health Services, Western Health and Werribee Mercy Hospital. By that stage the Pathway covered seven municipalities containing more than one million people."

What made the Pathway design effective for patient care and resource allocation was that it embraced three clinical skill sets.

"The prototype design took into account the different resources and specialist knowledge of each Pathway partner — utilising hospitals for acute medical care, NWMPHN's local knowledge of the primary health landscape within the region, and cohealth and community health partners' skills in caring for people isolating at home," said lead author Dr Seok Lim, a geriatrician and general medicine physician at Royal Melbourne Hospital.

"Design of the prototype was also based on meeting the needs of people with COVID-19, both in the clinical domain of health monitoring — especially rapidly detecting and responding to deterioration — as well as the mental health and practical aspects associated with home isolation."

From its inception, the Pathway model operated as an inclusive, multipronged process. Entry point for patients was a positive PCR result, followed by a contact-tracing phone call. If the patient consented, cohealth community health workers conducted a standardised risk assessment for severe disease and any psychosocial problems that might preclude home-based isolation.

People with financial problems or other challenges such as drug and alcohol dependencies were referred for specialised support, as was anyone without a Medicare card.

"In the design and delivery of the program, cohealth and partners recognised the importance of incorporating social and mental health supports for people in our area," said co-author, cohealth's COVID-19 clinical lead, Dr Nicole Allard.

"We developed a model that supported the complex needs of people who were isolating at home for 14 days, valued the expertise of GPs in our area and aimed to have appropriate referral to hospital services. Our teams were able to assist with complex care navigation — meeting people's health needs beyond COVID-19, and social support for them to stay at home safely."

Following triage, enrolled participants were allocated to low, medium or high tiers of care according to their symptoms and risk factors for severe disease. Low-risk participants were monitored by telehealth services (most provided by regular GPs)

every second day during the second week of illness.

People at risk of severe disease and those with moderate symptoms were referred to hospital outreach services. Those already seriously ill were placed in wards or ICU.

"Despite rapidly rising numbers of infections, the Pathway ensured all patients were monitored and provided with best-case care," said Christopher Carter, NWMPHN CEO.

"Other countries saw their hospital systems overwhelmed during coronavirus waves. The Pathway model which we and our partners devised stopped that happening here during the first wave of the pandemic, while simultaneously ensuring optimal care for all patients."

"As well as being adopted as the standard model across Victoria, the model is set to be adapted to manage other conditions."

As well as being adopted as the standard model across Victoria, the model is set to be adapted to manage other conditions.

"Heart disease and lung disease are good examples," Dr Lim said. "Royal Melbourne Hospital and NWMPHN are currently working together on a project for these conditions that borrows many principles of the Pathway model of care."

The MJA paper was written by a team of 14 experts, including Royal Melbourne Hospital respiratory physician Dr Alistair Miller, Professor Benjamin Cowie from the Peter Doherty Institute for Infection and Immunity, and others from the WHO Collaborating Centre for Viral Hepatitis, Djerriwarrh Health Services, Western Health, Werribee Mercy Hospital and Vrije Universiteit Amsterdam.

Four actions for influenza control

With the lifting of border restrictions and quarantine regulations, Australians can anticipate the reintroduction of influenza, according to the authors of an editorial published by the *Medical Journal of Australia*.

Improving collaboration between animal and human public health sectors was crucial to detecting and protecting against influenza in 2022, wrote Professor Kanta Subbarao, Director of the World Health Organization's Collaborating Centre for Reference and Research on Influenza at the Doherty Institute in Melbourne.

"While our primary focus is on seasonal influenza, we must also remain vigilant about zoonotic and pandemic influenza viruses," she wrote.

"Although seasonal influenza viruses were in abeyance in 2020–2021, there was widespread influenza virus activity in animals globally and within our own region.

"Highly pathogenic avian influenza A(H7N7) and low pathogenicity avian influenza A(H7N6) and A(H5N2) viruses were reported in Victoria, and swine influenza viruses have been detected in several states.

"The reason for public health concern is that novel (eg, animal) influenza viruses to which the human population lacks immunity could spread to cause a global pandemic if they cross the species barrier to cause human infections and spread efficiently from person to person.

"Does that sound familiar? We have learnt from COVID-19 that we ignore the animal–human interface at our own peril."

Professor Subbarao recommended four actions:

- Establish surveillance at the animal–human interface, because focusing on viruses that can cross the species barrier is an excellent place to start.
- Invest in subtyping more influenza A viruses than we do (Box, B), because being unable to subtype as H1 or H3 may be the only indication that an animal virus has infected a human.
- Improve communications between animal and human public health sectors so that we can institute active surveillance in people involved in culling large numbers of infected animals.
- Work in public–private partnerships to lower the barriers to surveillance at the animal–human interface.

"Such efforts will be beneficial beyond influenza: the COVID-19 pandemic and recent reports of a new genotype of Hendra virus in Australian flying foxes are excellent reminders that other animal viruses that can cross species barriers bear watching," she concluded.

"While our primary focus is on seasonal influenza, we must also remain vigilant about zoonotic and pandemic influenza viruses"

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How can air purifiers help aged care facilities protect residents and staff from harmful viruses?

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

As winter approaches, with its associated colds and flu, many aged care and long term care facilities will be looking for additional methods to protect their residents and staff.

A recent Australian study identified that clean surfaces, ventilation and air filtration play a key role in preventing the indoor spread of viruses such as COVID-19. This research demonstrated a 67% reduction in aerosols compared to environments where there are no air purifiers.[1]

The addition of air purifiers is a cost-effective way to improve air quality and reduce potentially harmful circulating particles such as bacteria, viruses, fungi, dust, mould, smoke and odours.

But how do you choose the right air purifier for your facility? Uncovering the following information from your air purifier manufacturer will ensure you have the correct information required to make an informed decision before purchasing.

Does the air purifier contain true High-Efficiency Particulate Air (HEPA) filters?

HEPA filters trap very fine particles from air and are classified according to the percentage of particles they trap. Medical-grade HEPA 13 filters will reduce 99.95% of airborne particles, whereas HEPA 14 filters will remove 99.995%. This means it will be 10 times more efficient, offering further peace of mind.

The addition of pre-filters protects and prolongs the HEPA filters' life, and carbon or charcoal filters reduce unwanted odours. Filters must be changed according to each facility's Infection Prevention policy, but an air purifier unit with a change of filter notification system will aid timely removal and replacement.

Air quality sensors

Auto-mode makes managing air quality simple. An air purifier that senses the air quality and automatically adjusts the speed will ensure the space has optimal air quality. Look for:

- Automatic mode — This means the appropriate speed will be automatically selected, depending on the current air quality.
- Low light sensors and night mode — In low light conditions (e.g. at night), the fan speed will automatically reduce, providing a quieter environment for a peaceful sleep. All lights and displays are turned off and the fan runs at its slowest speed.
- Turbo mode — Made to provide maximum decontamination, turbo mode allows the fan to operate at its highest speeds for fast, effective purified air.

Understanding airflow

Clean Air Delivery Rate (CADR) is based on how fast air flows through the filters and how effective those filters are. When comparing units, always ask the manufacturer for the CADR, not the flow rate. The CADR of a machine impacts the size of the room it can be used in.

Air changes per hour (ACH) are a practical way to estimate ventilation in a space. The CADR of your air purifier and the volume of your room determines your ACH. Ask your manufacturer for these specifications so you can compare and contrast the differing versions.

Robust evidence and supportive documents, which include HEPA filter capacity, CADR, and ACH specifications provided by your air purifier manufacturers, will aid your decision process.

Understanding these factors is essential when selecting the right air purifier to improve the air quality within your aged care facility, protecting your residents and your staff.

Reference:

1. Buising KL, et al. (2021). Use of portable air cleaners to reduce aerosol transmission on a hospital coronavirus disease 2019 (COVID-19) ward. Infection Control & Hospital Epidemiology, https://doi.org/10.1017/ice.202284.

PPE, HEPA filters and virus aerosol protection

Full PPE, involving a fit-tested N95 mask, in conjunction with a HEPA filtration system is said to offer health workers in a hospital setting the best protection against virus aerosol exposure.

Monash University researchers used a live virus aerosol model that highlighted the standard PPE strategy that was developed with droplet transmission in mind is not geared to prevent aerosol transmission and may offer insufficient protection in a hospital environment.

The experimental study, led by Dr Simon Joosten, from the Monash University School of Clinical Sciences, used a nebuliser to pump bacteriophage PhiX174 into a sealed clinical room for 40 minutes testing three scenarios:

- A healthcare worker in full PPE — surgical mask, gloves, gown, face shield.
- A healthcare worker in full PPE — but with a fit-tested N95 mask.
- A healthcare worker in full PPE — with a fit-tested N95 mask and a HEPA filter system.

Virus exposure was then captured via skin swabs applied to the face, nostrils, forearms, neck and forehead.

Studying the interaction of virus aerosol and PPE, the research found significant infiltration in scenario one (over 200 virus particles detected in nostril), slightly less infiltration in scenario two (between 25 and 200 virus particles detected in nostrils) and almost complete prevention in scenario three (zero to 1 virus particle detected).

While the research is currently under peer review, the findings, when presented to hospital management at Monash Health and Epworth Health, resulted in immediate impact with Dr Joosten involved in helping both health services deploy HEPA filter technology on hospital wards caring for COVID-19 patients.

Dr Joosten said the findings demonstrate that standard PPE alone does not protect against infectious aerosol at high load.

"Among the most important protective measures are vaccination, personal protective equipment and ventilation. Here we show that personal protective equipment and ventilation interact to provide added protective benefit against virus-laden aerosol."

Monash Health's Chief Medical Officer, Professor Anjali Dhulia, said Dr Joosten's previously published and most recent HEPA filter data research contributed to the deployment of HEPA filter technology at Monash Health.

Dr Lachlan Henderson, Group Chief Executive, Epworth HealthCare, said keeping patients, staff and doctors safe has been the priority throughout the pandemic.

"We have also regularly reviewed airflows at each of our hospitals. Dr Joosten's virus aerosol research was critical in guiding our infection control team to deploy HEPA filter technology at Epworth as an added layer of protection," Dr Henderson said.

Dr Joosten was recently awarded a $50,000 grant from the Epworth Medical Foundation and will advise on airflow management in the upgraded cancer ward at Epworth Freemasons.

The S-Monovette® is the revolution in blood collection.

The S-Monovette is an innovative enclosed blood collection system that allows the user to draw blood from the patient using the syringe or vacuum method, uniting the advantages of both techniques in a single product.

When used as a syringe, the phlebotomist has full control over the speed at which the blood is drawn into the tube. This is particularly useful for patients with fragile veins, such as the very young or elderly, where the use of the aspiration technique prevents even the most fragile veins from collapsing. When the tube has been filled, the plunger is simply snapped off to leave a primary sample tube which can be centrifuged and is compatible with all major analysers.

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

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

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

If you would like a visit from one of our Sales Representatives to demonstrate this system, please contact us on **toll free 1800 803 308**.

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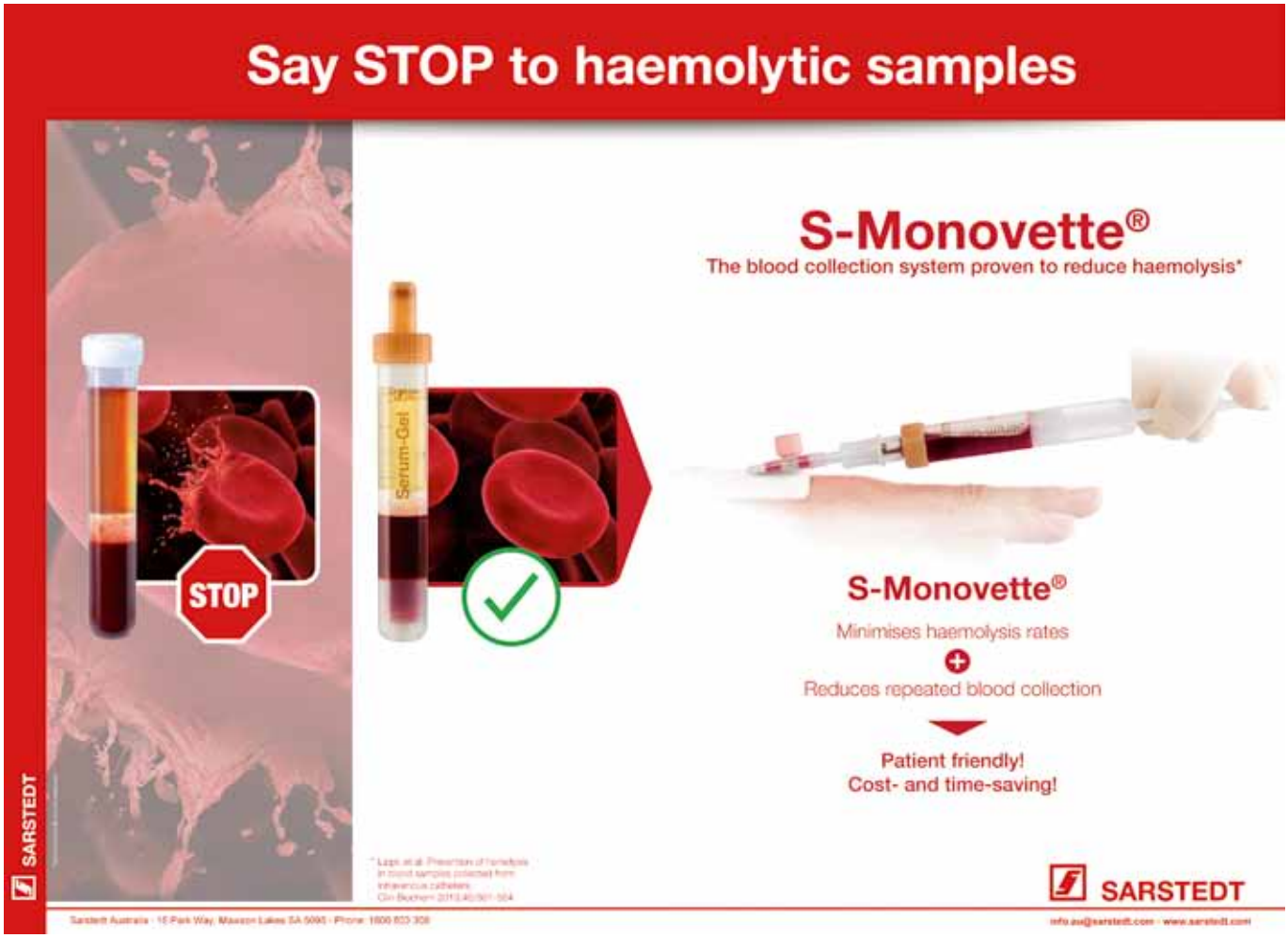

Clinical practice guidelines for children with CMT

Charcot-Marie-Tooth disease (CMT) — a lifelong degenerative condition that causes damage to the nerves, muscle weakness, sensory problems, difficulty walking, foot deformity and associated pain — is the most common childhood inherited nerve disorder. Yet until now, there have been no guidelines to help patients manage their condition.

To address this need, Murdoch Children's Research Institute (MCRI) research associate Dr Eppie Yiu, University of Sydney Professor Joshua Burns and their team formed the Paediatric CMT Best Practice Guidelines Consortium, involving clinicians from Australia, Belgium, Canada, Croatia, the US, the Czech Republic, Italy and the UK.

Dr Yiu and Professor Burns led the effort to produce the guidelines, which address the management of clinical problems experienced by children with CMT and related neuropathies (weakness, numbness and pain from nerve damage), and advocate for improved access to multidisciplinary care. "The aim was to develop evidence and consensus-based recommendations for the clinical management of children and adolescents with CMT," Dr Yiu said.

CMT usually starts during childhood and progresses over time, and while there is currently no cure, people with CMT can use a variety of therapies and strategies to help manage their symptoms.

Dr Yiu said the guidelines would promote optimal, standardised care for children with CMT globally, improve access to multidisciplinary care, such as via the National Disability Insurance Scheme (NDIS), and were critical for clinical trial readiness.

To develop the guidelines, the international panel of clinicians conducted a series of systematic reviews covering 10 clinical questions and evaluated the body of literature on CMT disease management. The panel then formulated recommendations based on these reviews.

Published in the *Journal of Neurology, Neurosurgery and Psychiatry*, the new guidelines include evidence and consensus-based recommendations for the management of muscle weakness, balance and mobility impairment, sensory symptoms, muscle cramps, impaired upper limb function, respiratory impairment, joint movement and non-surgical management of joint deformity.

Dr Yiu said she hoped the recommendations would be disseminated and implemented across multiple healthcare settings around the world to benefit children and young people with CMT.

"The guidelines are important for a range of medical and allied health clinicians who provide care to children with CMT, including neurologists, rehabilitation specialists, physiotherapists, occupational therapists, clinical nurse specialists and genetic counsellors," she said.

Clinicians from The Royal Children's Hospital, University of Melbourne, The Children's Hospital at Westmead, Sydney Children's Hospital Randwick, UNSW Sydney, Macquarie University and Concord Hospital, The Children's Hospital of Philadelphia, University of Antwerp, Stanford and the University of Pennsylvania also took part in the review.

‘Scan4Safety’ in Australia — Preparing for what comes next

Global data standards enable greater visibility, traceability and improved accuracy within healthcare supply chains around the world. The unique identification and other structures they provide are vital for healthcare not only in explicitly identifying a product so it can be located or traced throughout the supply chain, or by providing the ability to accurately and unambiguously identify a patient to ensure that the right patient is given the right treatment, but also in ensuring that event-based data can be captured and shared consistently throughout.

The accuracy of identity (people, products, places) has never been more important as we continue to digitalise even more of our processes to support patients and clinical teams across ever-widening networks. The work to build an interoperable framework of data that can be utilised across the many providers of care and support the patient themselves remains critical. So too, the increased focus on traceability of products to ensure their authenticity, enabled post-market activities and manage risks that became obvious within the past two years.

Did the tide change in healthcare thanks to Covid?

Covid has taught us many things. The intersection between the healthcare supply chain and the patient must ensure accuracy and safety as well as eliminate the unnecessary loss of time for clinical staff, this is given. If nothing else the pandemic highlighted many of the gaps in the processes and capability of health providers around the country and the amount of reworking and manual interventions that have been needed to be carried out by clinical staff to deliver the best care to patients. With so much pressure on our amazing clinical teams around the country, having them spend more time than necessary on supply chain-related processes is a luxury that the system simply cannot afford.

Healthcare supply chains must be well managed throughout to ensure we eliminate wasteful practices and ensure accuracy at the intersection with the patient in care settings. They must also maintain minimum levels of traceability (unambiguous product identification and batch) and visibility for the majority of products so that we can be more responsive and utilise more technology.

Many of the health providers around the country (public and private) have been undertaking digital health programs, many too have undertaken some supply chain improvement programs, but few are considering how the two interconnect within the care setting, in that final step in the traceability of a product, the one that counts the most, where products are used as part of treatment.

Terminology and coding versus unambiguous identification — is it a choice of one or the other?

The utilisation of terminology and codification to normalise data within clinical systems using global data standards such as Snomed is a key part of creating interoperable data within patient records, and we see this in an even more pronounced way as work continues to enable internationally recognised patient summaries and data structures. But while clinically we only need to generically record that a patient was given a specific type of medicinal product, as one example, there is still a need to record the product itself against the patient to verify correct product dose but also to ensure that accurate records related to product performance are possible.

The changes to medical implants mean that actual products must now be recorded against patient records and information provided to patients. Future changes in regulations to implement Unique Device Identification (UDI) based on global standards and replace the use of non-unique supplier codes will make further significant changes in this area. The use of terminologies and classifications all have their place but so too does the accurate and unambiguous recording of the products identified.

Is it time for a scaled ‘Scan4Safety’ program in Australia to ensure consistency? Is this part of what comes next?

Although countries like England have formed national programs to ensure that all health providers have the same baseline approach to managing identity as part of their standards frameworks Australia has been less inclined to do so. Granted this is in part because of the structure of our health system but the question remains as to whether we are missing some enormous opportunities in failing to do so?

Across all of the sites that have implemented ‘Scan4Safety’ across the UK (England, Scotland and Wales) and Ireland the documented results in improvements to patient safety, returned clinical hours to care, reductions in waste and the rich data created to help make management decisions are astounding.

Some of the details of benefits are contained within the Scan4Safety evidence report ‘Improving patient safety and saving money using point-of-care scanning in the NHS’. Locally in Australia, the ACT has been working towards taking a similar approach as part of their digital transformation program, so too NSW Health signalled their intent when they developed their state-wide barcoding standard. But what of the rest of the system? And how could we further vision the ‘Scan4Safety’ approach not only within hospital settings but also within our aged care and community care? The opportunities are endless.

Find out more about GS1 standards in healthcare https://www.gs1au.org/for-your-industry/healthcare/

GS1 Australia

How to alleviate the shortage of critical care nurses

Margaret Fry*

The spread of different variants and the COVID-19 pandemic overall have contributed dramatically to the shortage of nurses in the nation's hospitals. State and federal government must step up their efforts to ensure there are enough nurses in hospitals to supply quality health care and avoid poor patient outcomes, including funding postgraduate study to better equip nurses for crisis health care.

There are several reasons for the shortage of nurses, including critical care staff. In recent times, as the Omicron variant has infected greater and greater numbers of Australians, more people are being hospitalised and going into intensive care units. Shortages of critical care and other nurses have emerged in hospitals around the nation, pushing down nurse-to-patient ratios to worrying levels. Nurses are being seconded from the private health system into the public system to help alleviate the shortages, which have been exacerbated by COVID-19 and the quick spread of Omicron.

In recent years, the supply of nurses has not kept up with the increased demand, and now there is a shortage of nurses predicted for most specialities including critical care areas. Currently, in Australia we have 432,855 practising registered nurses and enrolled nurses. Of those, 48,207 are registered nurses practising in the health system and 3347 are non-practising. As of September 2021, there are 2277 endorsed nurse practitioners, who are legally entitled to autonomously assess, diagnose and manage a range of patient conditions in line with their scope of practice.

Yet these numbers need to increase across the board to meet demand. The federal government has predicted there will be a shortfall of approximately 85,000 nurses by 2025, and 123,000 nurses by 2030.

Longer term factors contributing to the shortage of nurses include rising hospital admissions due to the growing burden of chronic disease and improved survival rates. This is linked to the ageing population and increased survival rates for those with chronic disease or co-morbidities. In addition, nurse workforce planning by governments has been sporadic, poorly integrated and inadequate to meet longer term demand. Nurses are providing more health care with fewer resources and the healthcare system is losing nurses due to burnout and dissatisfaction. This is also resulting in difficulties in recruiting and retaining skilled experienced nurses in the public and private sectors.

The labour shortage may result in compromised longer term outcomes, including poorer health outcomes and near misses in hospitals as the quality of care is compromised. This will

"No single policy will remedy the projected shortfall of nurses able to meet service demands."

inevitably lead to greater patient dissatisfaction. Nursing staff shortages will also diminish the organisational culture of hospitals and push up staff dissatisfaction across all areas as resources run thin on the ground.

No single policy will remedy the projected shortfall of nurses able to meet service demands. To begin, a prolonged and persistent effort is needed to address the nursing shortfall and educate people about nursing careers and thus to stimulate greater output of trained and skilled nurses. Governments need to devise strategies to minimise nursing curriculum creep to ensure integration and a coherent relevant education program.

There needs to be better defined career pathways for nurses and a greater time for transition-to-practice programs that support an environment of learning, overseen by experienced senior nursing clinicians. We need to encourage postgraduate study too, degrees such as the Master of Advanced Nursing and Graduate Certificate in Critical Care, and postgraduate training more generally should be funded by government. As it is, nursing individuals must face the cost of their education alone, even though the healthcare system overall and patients benefit.

Importantly, postgraduate education equips nurses with the necessary skills for healthcare management and it can help nurses integrate into specialty clinical areas such as critical care in ICU units. The gaining of knowledge and skills can transform healthcare practice and support a culture of evidence-based practice, which can deliver better healthcare outcomes. Furthermore, the online delivery of courses can provide nurses with greater access to educational opportunities, including those nurses located in geographically diverse regions.

Work security and employment conditions are also important. Employees of nurses, largely state hospitals systems, should look at employing more nurses on permanent contracts where possible, and move away from an overly casualised workforce. Governments, healthcare providers and educators too need to explore strategies to increase diversity and the number of men in nursing. Early career retention should be fostered through incentivisation and better ongoing education and training, which should be included in nurses' rosters, rather than in their own time.

Separately, greater opportunity and funding for roles such as nurse practitioners would improve access to health care. Nurse practitioners need to be empowered to operate more independently of other professionals to manage a range of patient conditions. As an example, nurses should be able to sign work certificates, along with doctors. Legislation needs to be revised and Medicare Benefits Schedule (MBS) items expanded to broaden nurse practitioners' scope in public and private practice and in rural and regional Australia. This would improve healthcare access and timeliness across Australia, including in rural and regional Australia. Governments too should consider incentivising rural and regional placements for nurses, as it does for other medical staff. The use of unregulated workers in aged-care settings should be overseen by governments to improve healthcare outcomes for the aged.

Only by introducing such a combination of measures at every level can the nursing shortage be alleviated over the longer term. In the short term, governments should provide nurses with whatever support they need to help overcome shortages and burnout, which is being exacerbated by COVID-19.

*Professor Margaret Fry is a researcher, clinician, supervisor and teacher at UTS, which offers the Master of Advanced Nursing and Graduate Certificate in Critical Care. The focus of her applied research is on improving the quality and safety of nursing care and patient outcomes. Professor Fry has over 180 peer reviewed publications and $5.5 million in grant or scholarship funding. Professor Fry has worked extensively in critical care areas (intensive and emergency) for over 20 years and possesses a highly credible reputation in the industry.

Protecting patients from ransomware attacks

Why healthcare cyber resiliency is critical as we move beyond recovery

AJ Missaghi Chief Technology Officer — Healthcare & Life Sciences (APJ) Dell Technologies

The moves made by Australian healthcare leaders to digitally transform health services now will directly impact the long-term wellbeing of citizens and protect the future economy.

However, to realise the potential of a digitalised healthcare sector and navigate the data era, leaders must prepare for innovative technologies and confront the rise in cyber and ransomware attacks head-on.

In the past two years, the healthcare system has been at the heart of societal and economic recovery. Its resiliency and innovation while facing the ongoing pandemic and other everyday medical challenges have been immense; the rapid shift to telehealth services helped reduce community transmission and protect patients and healthcare workers while keeping beds free for COVID-19 patients. Now, as governments collaborate with healthcare leaders and tech experts to realise the full potential of digitally driven service solutions, the progress made in recent times must be protected and enhanced.

Healthcare vulnerabilities

A cyberattack was reported every 8 minutes in Australia over the 2020–2021 financial year, with an 84 per cent increase in reports relating to the health sector in 2020 from 2019. The financial cost is staggering, but the human cost is incalculable. Already straining under a backlog of pandemic patient appointments, health systems are relying on digital transformations to turbocharge long-term resiliency. But cyberattacks can disrupt operations at large hospitals resulting in a lack of access to patient data and delays and cancellations of time-sensitive procedures.

The Australian Government's Ransomware Action Plan reports that during the height of the pandemic in 2020, ransomware campaigns targeted Australia's aged care and healthcare sectors. The 'Maze' ransomware encrypted valuable information, such as sensitive personal and medical information, so it could no longer be used until a ransom was paid. Reckless attacks such as these put patients' lives at risk.

Preventative cyber technology is constantly evolving with innovations to protect data and keep pace with the bad actors; however, the Australian health sector will continue to be a vulnerable target because of its access to sensitive data and increased reliance on internet-enabled services. And alarmingly, according to a 2021 survey by Dell Technologies, 74% of health industry decision-makers say they struggle to find suitable data

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protection for their AI and machine learning solutions. A collaborative public and private sector approach is now needed to maximise cyber security and resilience.

Ransomware is everyone's problem and could hinder healthcare progress if not dealt with decisively. As the Australian government mounts more robust defences against cyberattacks, national partnerships with the brightest cyber experts, CIOs, and public health leaders are necessary to ensure Australia is cyber secure. Cyber is at the core of digital healthcare infrastructure and the basis for future progress, making it essential for combatting today's healthcare challenges.

Protecting health data

Health data is the lifeblood of progress in solving healthcare problems. But accelerated digital transformations have created increasing complexities — and data protection must evolve to meet new demands.

After a tumultuous couple of years, healthcare waiting lists have grown out-of-hand, placing pressure on already overwhelmed facilities and staff. Telehealth services, supported by always-on digital platforms, initially boosted accessibility to services and continue to streamline efficiencies. The Australian government has recently committed an additional $24 million to support telehealth changes to give GPs and specialists additional flexibility to treat their patients safely as Omicron case numbers grow.

Meanwhile, the datasphere has grown increasingly complex. Simplified, agile as-a-service data management across the hybrid and multi-cloud is now essential for boosting operational efficiencies. Health records and mobile devices have streamlined wait times and minimised patients' time spent in hospitals, as IoT and Edge computing have powered patient monitoring. Behind the frontlines, AI technologies have led the charge on healthcare research — enabled by High Performance Computing. In December 2021, the Australian Alliance for Artificial Intelligence in Healthcare launched a roadmap with proposed strategies to cover critical issues in the roll-out of an AI-enabled Australian healthcare system, with the goal being a fully funded national plan by 2025.

Given these advancements, it isn't surprising that the health sector is a tempting target for cybercriminals. Retaining trust in the digital innovations that underpin Australia's future economy and social wellbeing is critical to sustaining progress, which is why it's more important than ever that our most sensitive data, health data, is rigorously protected.

As healthcare leaders look to reinforce the cyber resiliency of their organisations, focusing on their most critical data is key — from records with accompanying images to object data from diagnostic systems and health surveys. Placing this critical data in a vault will help ensure it is isolated, can't be modified and can be quickly recovered in the event of an attack — enabling healthcare services to get up and running quickly again.

Better together

Protecting these unstructured datasets requires a 'people, process, and best of breed technology solutions' approach. While there is no antidote or 100% fail-proof approach, enlisting a cyber strategy that focuses on all three areas is vital. Cyber security is evolving quickly to keep pace with cybercriminals. That means cyber strategies should constantly evolve too, with stress tests and ongoing assessments to ensure they are fit for purpose. So is having the right technology and cybersecurity partners. Planning and preparation are vital. This is not a journey that healthcare providers can travel alone — and there is no end in sight.

But the risks of not acting now far outweigh the short-term cost of investing in tighter cyber strategies. Healthcare progress is at stake. It is underpinned by technology innovations that require patient trust, continuity, and reliability. Take the potential for Digital Twin technology, which is transforming the sector and enabling healthcare institutions to meet pressing challenges — from personalising healthcare to combatting patient wait times. The powerful combination of the digital twin, IoT, AI, and data analytics will boost patient outcomes and hospital performance. But this must be supported by stringent cyber security to evolve with the trust of patients and healthcare providers — and remain operational in the event of a ransomware attack.

Ransomware is a national and global challenge; an open, multistakeholder approach across sectors will help organisations ramp up defences. The nature of healthcare makes it particularly vulnerable, and the stakes are high as it powers national resilience beyond the pandemic. Securing the viability of healthcare innovations with first-class cyber strategies will benefit everyone everywhere. As we look to a more equitable, sustainable future that puts citizens at the forefront of progress, healthcare cyber security is more than a hot topic — it's a lifeline.

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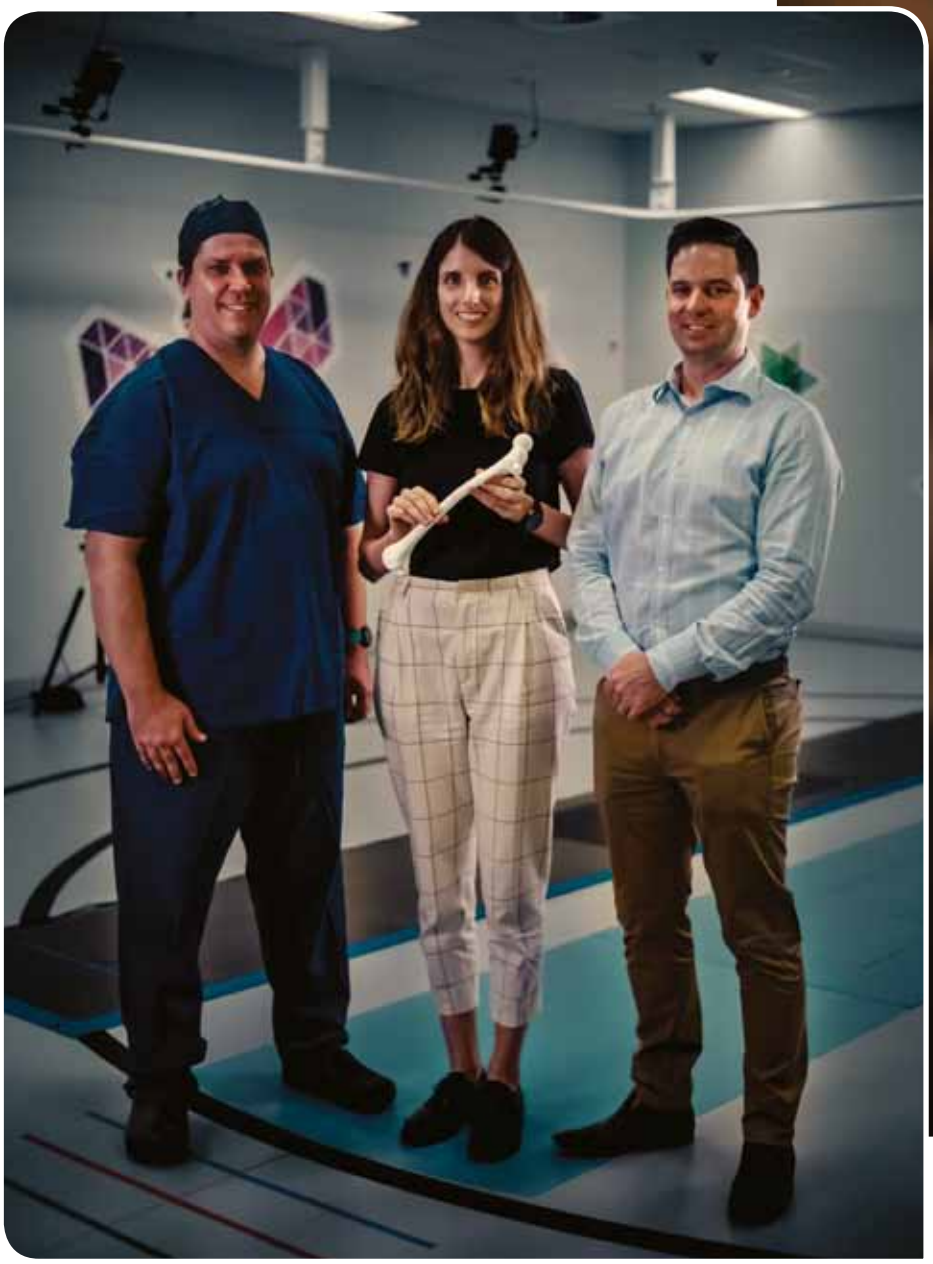
Digital ‘twins’
for paediatric hip surgery

Dr Martina Barzan and her team at Griffith University have created computerised ‘twins’ of child patients that would enable surgeons to better plan, test and execute complex surgeries for severe hip deformities.



The development is said to halve surgery time, which means getting back to normal walking and sitting sooner.

Dr David Bade from the Queensland Children’s Hospital has trialled the technique and agrees that using the 3D-printed guides reduces his surgical time.

“This is particularly so with very difficult deformity cases,” he said. “With less surgical time, there are less X-rays and radiation doses, and less blood loss for these young patients.”

Dr Barzan explained that before the digital twins were created, “surgeons would have to cut out X-rays and move the pieces back and forth”.

Now, surgeons can use computerised replicas of the children’s bones, muscles and the way they move to understand how their hips will move after the surgery, to make the best virtual plan.

Dr Barzan designed a system to translate those virtual plans to the operating theatre, using 3D-printed surgical guides individually matched to each patient’s body. The system leads to decreased radiation and every patient recovers back to normal walking.

“Nine months later, all of the children could walk normally, sit and play pain-free,” Dr Barzan said.

Dr David Bade said that the innovation “helps me, as a surgeon, get the best result on the table, and also helps the patient get a more accurate result and better outcome long term”.

“This type of pre-planning and patient-specific cutting guides can be used in multiple areas of the body and in multiple deformities.”

The only treatment for children with severe hip deformities is surgery. Such deformities can occur through trauma, infection or being born with them.

Michael Adams, Griffith University

Dr Barzan won this year's Fresh Science Judge's Choice Award (Southeast Queensland) for her work. The competition is national, and helps early-career researchers find and share their stories of discovery.

The program takes up-and-coming researchers with no media experience and turns them into spokespeople for science, giving them a taste of life in the limelight, with a day of media training and pitching experience, and a public event in their home state.

Dr Barzan was supervised by Associate Professor Christopher Carty, a Principal Research Fellow at the Griffith School of SHS — Allied Health Science.

Keeping your facility safe is easy with PathoCide's HOCl based solution

Today, cleaning is not just about appearance — it's about cleaning for health. In medical and aged care facilities, staff, customers and guests want assurance that cleaning programs effectively prevent the spread of infectious diseases without negatively impacting their wellbeing and the planet. To meet these new standards of clean, many facilities have transitioned to green cleaning programs using hypochlorous acid as an alternative to toxic disinfecting chemicals. And now with a TGA approval, our new PathoCide Hospital Grade Disinfectant surface spray will help you exceed these standards.

PathoCide Hospital Grade Disinfectant is an approved surface spray that can effectively stop the spread of COVID-19 and kills 99.9% of bacteria and viruses including Staphylococcus Aureus, Pseudomonas Aeruginosa, Salmonella Choleraesuis, Poliovirus Type 1 and Herpes Simplex Virus Type 2, among many others.

What is Hypochlorous Acid?

Hypochlorous acid (HOCl) is the ingredient that PathoCide Hospital Grade Disinfectant is made from. It is a unique chlorine subspecies well known for its antimicrobial properties. In fact, it's most famously known for being naturally produced by white blood cells in all mammals to fight infections. The substance effectively eliminates a broad range of microorganisms. Recent technology in electrolysis has allowed this compound to be produced outside of our bodies. This process runs an electrical current through NaCl (table salt) and water and precisely controls the environment around the chemical (pH) to create a chemical reaction forming sodium hydroxide (NaOH) and hypochlorous acid (HOCl).

These two compounds are useful cleaning and disinfecting solutions for many types of hard and soft surfaces. Sodium hydroxide is a cleaner that removes soils, stains and residue build-up. Hypochlorous acid is a disinfectant that kills and inactivates a wide range of germs and viruses. Facilities can maximize the effectiveness of their cleaning programs by using the solutions in a two-step cleaning and disinfecting process.

Five Reasons to Use PathoCide Hospital Grade Disinfectant surface spray

HOCl can transform cleaning programs for the better. Consider these five benefits for your facility:

1. **Efficacy.** HOCl inactivates a variety of viruses, including coronaviruses, in less than one minute. In a comparison of disinfectants used in surgical centers, hypochlorous acid reduced the bacterial count significantly more than standard disinfectants. It's also effective against the common cold, flu and norovirus, which is recognized as one of the most difficult viruses to kill.
2. **Safety.** Producing PathoCide Hospital Grade Disinfectant requires only water, salt and electricity, meaning the disinfectant has no added fragrances, preservatives or irritating odors. It has been proven to be non-irritating to eyes and skin and can be used without personal protective equipment (PPE) like gloves and masks.
3. **Sustainability.** Unlike conventional chemicals that can pollute waterways, hypochlorous acid is safe to dispose of without environmental concerns. Plus, generating hypochlorous acid on site enables the use of reusable spray bottles, thereby reducing plastic waste. HOCl also does not contain volatile organic compounds (VOCs) that negatively impact indoor air quality.
4. **Availability.** Since water, salt and electricity are easy to source and don't rely on traditional chemical supply chains, facilities using PathoCide Hospital Grade Disinfectant can be assured the product will be available when required. This is especially important when supply chains experience delays or interruptions.
5. **Increased use.** As we look beyond the pandemic, and the world begins to return to normal, there is one topic that seems to be sticking around: increased cleaning frequency. Janitorial services, once hidden in the back or performed during the nightshift, are now on display. As cleaning frequencies increase and tend to be on display, it is critical that chemicals used do not expose those around them to harmful residues or active ingredients.

PathoCide Hospital Grade Disinfectant — The Solution that Cleans for Health

PathoCide Hospital Grade Disinfectant can prevent the spread of infectious diseases as well as if not better than conventional chemicals without the dangerous properties of bleach, quats and hydrogen peroxide. Choosing to use PathoCide Hospital Grade Disinfectant on site offers numerous benefits and demonstrates that your business cares for its staff, visitors and the environment.

Interested in learning more about how PathoCide Hospital Grade Disinfectant can benefit your cleaning program? Contact Dr Juhi Saxena today.

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Cybersecurity
is everyone's responsibility

Deana Scott, Cybersecurity Community of Practice Chair, Australasian Institute of Digital Health

Health care continues to become increasingly digitised with an ever-expanding range of infrastructure options, technology platforms and devices being implemented and accessed by hospitals and healthcare organisations. Across the globe, the pandemic has seen the speed of digitisation in care delivery accelerate, with many organisations being caught off guard by legacy infrastructure, poor systemisation and a need to rapidly pivot in response to daily announcements and infection rates.

The challenge now is how do healthcare organisations continue to respond with a secure approach to ensure the sector doesn't suffer a virtual pandemic due to the opportunistic actions of malicious actors?

Health care has continued to hold first place in the biannual notifiable breach reports and therefore is a top concern for the Office of the Australian Privacy Commissioner (Office of the Australian Information Commissioner, 2022). Of significance, compromised credentials made up 60% of reported cyber incidents, highlighting the need for greater awareness and responsibility in protecting user profiles. Ransomware is in third place and the impact of such an attack can severely disrupt the delivery of care and, consequently, patient safety.

Consumer confidence is crucial to the reputation and sustainability of any organisation and will become a significant metric as health care makes its slow but incremental progress towards value-based care. This brings us back to the question of how health care continues to leverage technology while mitigating the potential for a cyber attack and retain consumer confidence in delivery of care. The answers lie in a two-pronged approach, one that involves accepting that cybersecurity is at the intersection of people and technology. It is a symbiotic relationship, like hardware and software.

Internal as well as external stakeholders must be engaged in any cyber strategy and they are key to mitigating cyber incidents.

It requires a 'whole of organisation' approach with cyber hygiene protocols embedded into agreements, contracts and onboarding and offboarding activities for staff, contractors and suppliers.

The OAIC Notifiable Breaches Report July to December 2021 (Office of the Australian Information Commissioner, 2022) again highlighted the increase in human error breaches. It is no longer accepted that cyber hygiene protocols be the sole responsibility of the IT department or require a technical 'fix'. There is a broader problem embedded across health care of abdicating one's responsibility by proxy.

The Australian Digital Health Agency (Australian Digital Health Agency, 2022) website states: "Everyone involved in providing and supporting healthcare plays a role in maintaining the privacy of people's information that healthcare provider organisations hold. This means making sure everyone is secure in their online behaviours, both at work and at home."

As a board member, director or individual, there are mandatory legislated responsibilities that must be adhered to in the collection, use and disclosure of personally identifiable information (Office of the Australian Information Commissioner, 2019), more so when it comes to healthcare information. Federally, and at state level, PII is legally protected, and it is therefore essential this data have strong governance and controls applied. A documented cyber response plan (CRP) and business continuity plan (BCP) can serve an organisation well as was demonstrated by Eastern Health when it became victim of a cyber incident. In its media release on 17 March 2021 (Eastern Health, 2022), Eastern Health outlined their response and ensured that consumer confidence was maintained by confirming patient safety was not impacted and within six weeks had returned to normal services.

Implementing an organisation-wide dedicated cyber strategy is a significant undertaking and it requires an acceptable level of funding and dedicated resources. For smaller healthcare organisations, these strategy and response plans don't need to be onerous, but they do need to be in place, however brief. Not having a documented plan in place may impact insurance excesses and increase the severity of fines in the event of a cyber incident.

As an individual working in the healthcare sector with (or without) access to personally identifiable information, any breach in your own infrastructure (smart phone, laptop, etc) is a potential risk to the work environment as well.

"Implementing an organisation-wide dedicated cyber strategy is a significant undertaking and it requires an acceptable level of funding and dedicated resources"

We should all be aware of the risk from emails (phishing attacks, attachments with malicious functionality, requests for information) or of inserting and/or opening unknown storage devices (the USB you find the in carpark). However, the seemingly innocuous discussion in the lift, or social media post that reveals sensitive information about the work environment, the text message about a parcel delivery or downloading a cat video out of curiosity can all be used by a malicious actor to breach defences.

Stay vigilant inside and outside the workplace — don't let curiosity kill your cyber defences.

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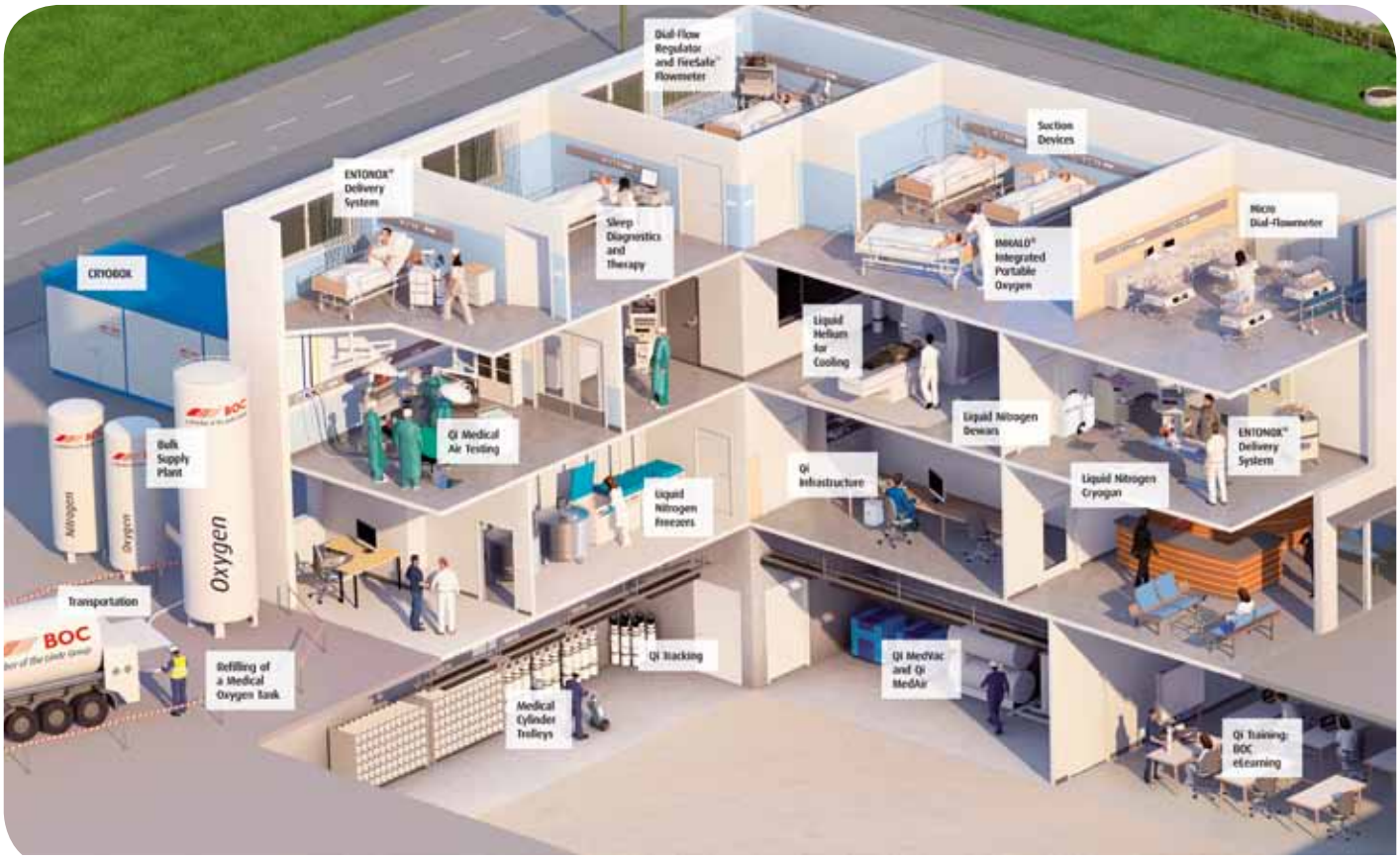
6. The Australasian Institute of Digital Health works to support the digital health workforce to implement and understand issues around cybersecurity and ultimately offers thought leadership on the topic through its Cyber Security Community of Practice. Find out more at www.digitalhealth.org.au.



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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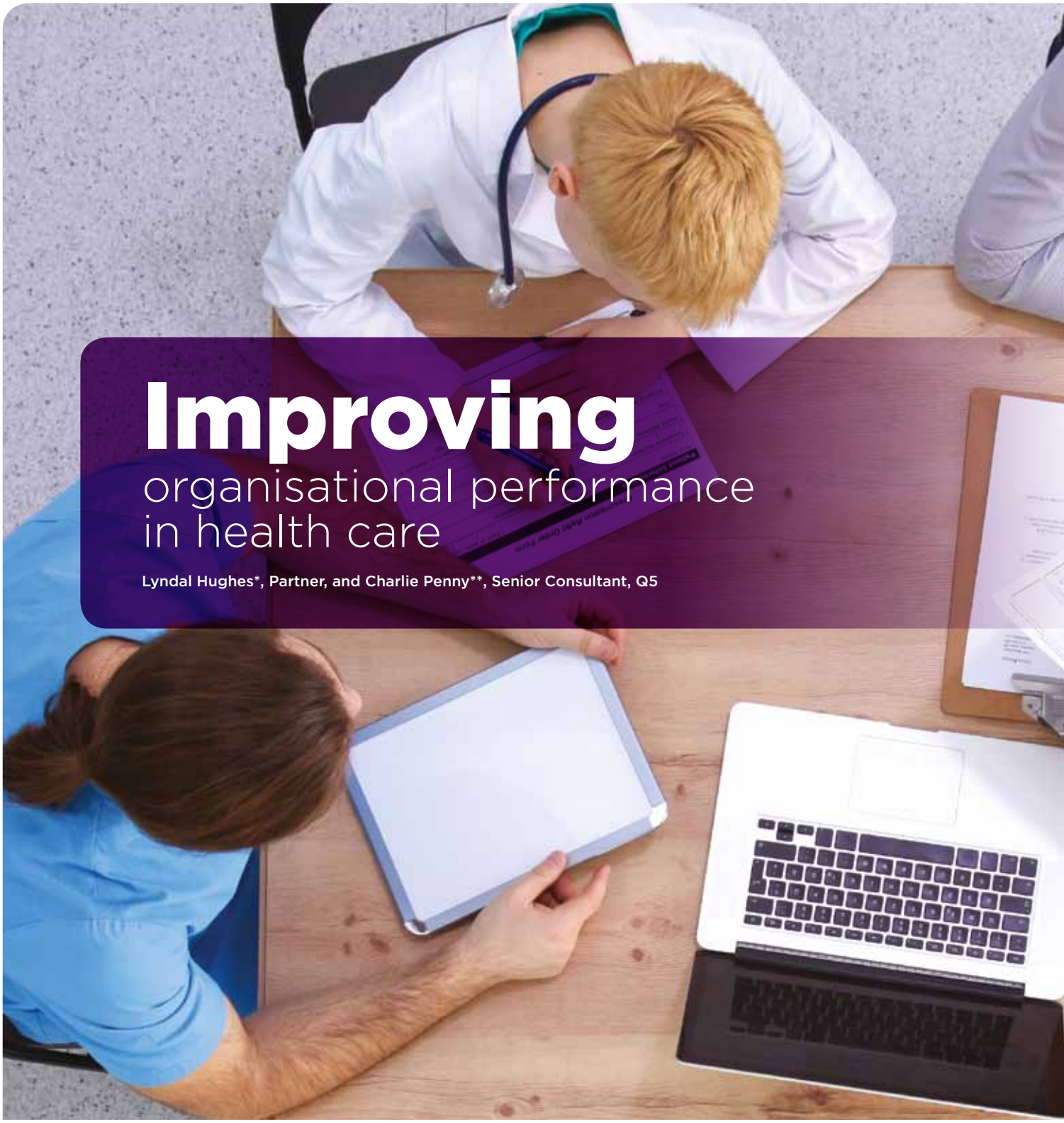

Improving
organisational performance in health care

Lyndal Hughes*, Partner, and Charlie Penny**, Senior Consultant, Q5

Our healthcare systems have operated under enormous pressure over the past two years — where we have expected systems to function at a peak level for too long. They have delivered outstanding care to patients but have damaged their own organisational health in the process.

Now, more than two years into the pandemic, it is time to take stock. Leaders in the health system need to find the time and space, collectively and individually, to make their departments healthy again. What makes a healthy department? It is one where there is a clear vision, it is grounded in behaviours and actions for everyone, with a clear strategy or pathway to deliver it. There must be alignment between vision, strategy, measures and individual motivations. Leadership is the pivotal force joining all of these.

Reflection and alignment require both art and science. Science is the evidence and data: looking at employee surveys, financial bottom lines, patient data and efficiencies with clear hypotheses and an analytical precision. Bringing this together against the vision and strategy, to make new decisions. Art is the judgment and wisdom that leaders bring to the room. Data mustn't drive decisions. It can only inform. The lived experience of leaders and their teams allows for meaning, prediction and ultimately compassion.

So where to start? Use science to consider the best clinical service model design. Consider how this needs to be reconfigured for the future, incorporating recent learnings. For example, ensure that the advances made in digital health become embedded in business as usual.

Get all your data together. Don't go fishing — you may catch something that throws you off course. Develop hypotheses to frame data analytics, such as hypotheses formed from human experience (your team, the patients, community). Look for fresh insights. If the analytics are only reconfirming what you already know, then perhaps you are not asking the right questions of the data.

Consider questions such as:

- Have the frequency and nature of interactions between people and teams shifted? This may give evidence that staff need to solve operational problems and patient outcomes differently.
- What data is sitting under the success or lack of success of established measures and targets (in addition to the obvious impacts of COVID-19)?
- What factors co-exist to drive both positive outcomes for patient experience and staff experience?

Straight away we can see that the art of thinking well is critical to the use of science. Science alone can take us on the wrong path, if not given careful consideration.

The art of thinking, sensing and understanding people is critical to re-establishing organisational health in the healthcare sector. But where to start? Start at both ends of the hierarchy. Leaders need to start by forcing a practice of reflection. This involves stepping back and looking through the lens of our people to understand how we can best develop future leaders, as well as listen and actively respond to the needs of front-line staff. This alone will ensure the long-term health of our health systems and the people who work within them.

But take care not to fall into the mind trap of 'rightness'. In the words of Jennifer Garvey

"The art of thinking, sensing and understanding people is critical to re-establishing organisational health in the healthcare sector."

Berger, rightness occurs when our instinct to believe that we are right closes us off to the ways that we are wrong. Health care is filled with examples of leaders believing in the certainty of their own views even as complexity grows.

Stepping back to step forward

To manage operational pressures effectively and sustainably in the long term, leaders and executive teams must create the space to step back and re-evaluate their system as a whole. While easier said than done, we have seen great progress from executive teams who take time out and are willing to refocus on strategy, as well as shape clear, medium- and long-term plans for recovery and transformation.

The first step to this is ensuring their organisation has a powerful 'organisational vision' to work towards, followed up by a clear, measurable delivery plan that provides staff and patients with the clarity to move forward.

COVID-19 brought healthcare leaders together around the single, sometimes bloody-minded purpose of tackling the pandemic that drove change at a pace we rarely enjoy. We saw the building of field-testing centres, creation of telephone-first triage systems to limit the spread in hospitals and the rapid deployment of mass vaccination programs.

Beyond the current crisis, it is now vital for leaders and staff to harness the same clarity of purpose and planning as efforts shift to the recovery and redesign of our clinical services.

Creating capacity and capability

During the pandemic, we witnessed health and social care leaders, both young and old, 'run towards the fire' to deliver the world-class performance we needed to care for our populations.

Now it's time to capture all these learnings and better ways of doing, and use this to invest in our leaders so that they have the skills and networks needed to lead change. The opportunity is now to transform, re-create and realign our healthcare systems and capabilities for tomorrow.

Currently, health services are experiencing a wave of retirements, workers exhausted and exasperated by the pandemic. Now is the time to capture that loss of organisational memory and reflect on the internal networks which are so often relied upon to get things done.

Managers have started to lead in different ways. They harnessed the need, naturally co-designed with their teams and provided exceptional care. Their approach demonstrated the art of looking forward by bringing these experiences into consciousness — to reflect and learn. There was a natural 'hot housing' of innovation in nearly all frontline teams to make a difference. There was trust within a framework.

Yet we have observed the resurgence of anger and frustration in many hospitals, as business-as-usual creeps back in. Legacy systems and practices close back in to restrict leaders, and untapped potential is left to fade.

Some of our most recent work has involved bringing together cohorts of frontline leaders — including those who have run towards the fire and are ready for their next mission, and those reaching the end of their careers and investing in their co-development.

We hope to equip leaders with the skills they need to be the next generation of health system leaders, but also create networks which they can rely upon and mentors they can learn from. Investing in 'pre-retirement groups' can not only provide these mentors, but may also create opportunities to retain these experts in our services for another few months. This will have a significant impact on recovery efforts and retention of their institutional knowledge.

Using an approach that combines the art and science of organisational health has the potential to transform the healthcare sector beyond just effective operational management. There is a real opportunity to redesign our systems to be sustainable, efficient and fit for the demands of future healthcare services.

Now is our moment to change for the better.

*Lyndal Hughes leads the health sector practice in Australia for Q5, with over 25 years' experience in implementing effective transformation and leadership strategies for blue-chip companies and government departments in Australia, New Zealand, the UK and the USA. As a former London-based Accenture executive, Lyndal offers rigour and insight to all the projects she works on. She has been the Head of Culture and Change for Woolworths Food Group and founder of the highly regarded change consultancy Treacle. This consultancy was rolled into Q5 in 2021, bringing with it deep expertise in working with leaders to shape and implement integrated change programs that align with strategy. Lyndal delivers measurable differences in workplace behaviours, wellbeing, organisational culture and leadership impact.

**Charlie Penny was Q5's first 'boots on the ground' when work to support the building of the Dragon's Heart Hospital (DHH) commenced. The DHH was a surge hospital with 2000 beds for COVID patients, built in 30 days in the Principality Stadium — the home of Welsh Rugby. Building the DHH formed the foundation for the past two years for Charlie, who has subsequently led a series of projects in the NHS. His recent work has included supporting executives to refocus on their strategy and longer-term transformation plans following the intensely operational, fire-fighting period experienced during the pandemic. He has also supported a number of service improvement programs, including accelerating efforts to vaccinate the Welsh Population.

Transform quality improvement processes into a finely tuned engine

Ongoing monitoring and improvements in healthcare provision are crucial for hospitals to maintain compliance with the National Safety and Quality Health Service (NSQHS) Standards.

They're assessed against these Standards to ensure they have systems in place that support safe and good quality care, and identify and manage risks of harm.[1]

This consistent national approach to assessment provides the opportunity to compare outcomes and identify areas for improvement. It's also the basis for reporting to patients, carers and consumers, with results of hospital assessments available online[2].

More efficient quality improvement needed

Quality improvements can propel ongoing upgrades in healthcare provision and strengthen compliance to the NSQHS Standards — as long as they're launched, completed, and disseminated efficiently.

Hospital teams may find they duplicate efforts and experience roadblocks to collaboration. There's no simple way for projects to be prioritised, for new people to join a team, or for team members to document and track a project's evolution. Teams may have no standard workflow and no way to easily communicate or get feedback on a specific stage of a quality improvement project.

According to the NSQHS Standards User Guide for Governing Bodies: "There is increasing recognition that paper-based reporting is limiting, and that governing bodies should use a blend of soft and hard intelligence. A mix of information and data sources are needed to support quality improvement and monitoring."[3]

Assessment outcomes against the Standards

First edition **January 2013 - December 2018**[4]
All hospitals and day procedure services **accredited at least once**
906 health service organisations **completed two assessment cycles**
67% (609) met all core actions at initial assessment at first accreditation cycle
74% (672) met all core actions at second accreditation cycle

Second edition **Hospitals and day procedure services January 2019 - December 2021**[5]
60% completed assessments
74% of assessments met requirements at initial assessment
1 not accredited
20 required mandatory re-assessment
7 with significant risks identified

Organise and standardise quality programs

When looking at your compliance with the NSQHS Standards, you must also examine your process for maintaining that compliance, including:

- Real-time visibility into all projects
- Standardised, configurable templates
- Collaboration capabilities
- Integrated search and full-text retrieval
- Artificial intelligence-driven literature appraisal
- Automated evidence synthesis and project reporting

Together, these capabilities can help hospitals transform your safety and quality improvement processes into a finely tuned engine that supports compliance with the NSQHS Standards.

Ovid® Synthesis Clinical Evidence Manager offers a single, cohesive view of projects and reduces duplication while also fostering collaboration within projects by streamlining the literature search, appraisal process, implementation, and dissemination.

This solution will take clinical practice improvement projects to the next level to ensure high quality based on the latest research insights and evidence, and support hospitals with your NSQHS Standards compliance.

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5 www.safetyandquality.gov.au/standards/nsqhs-standards/implementation-nsqhs-standards/nsqhs-standards-lessons-learnt

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Healthcare Transformation Enabled with LTE and 5G

Healthcare today is marked by its technology-enabled reach, with providers extending coverage to more locations and in a wider variety of ways than ever before. Advancements such as telehealth, Bluetooth-connected devices, live streaming from ambulances, and pop-up temporary care sites help deliver services to people where they need it, when they need it.

IoT in Healthcare

Whether in a fixed or temporary location, medical experts use devices and applications to monitor environmental and patient data from connected medical devices, which helps them provide the appropriate care. A wireless edge solution that supports Bluetooth can safely send information from these IoT devices and sensors directly to the cloud, allowing off-site specialists to analyse and respond to real-time data.

With over 50 years of experience and 50,000-plus babies delivered, Monash IVF is a leader in reproductive care. Opening its newest facility in Albury, Monash IVF needed day-1 connectivity for its 20 clinical and corporate staff on-site. Working with Cradlepoint technology partner, Sparx Solutions, Monash IVF deployed a Cradlepoint 5G solution to provide primary connectivity on the site, enabling connectivity for its medical and corporate devices. With secure and reliable wireless connectivity, these devices are able to transfer patient data to and from the organisation's centralised data centre.

Pop-Up Clinics

Pop-Up clinics have become ubiquitous across Australia and globally over the pandemic. LTE and 5G routers for pop-up locations allow healthcare groups to quickly set up temporary sites such as testing and vaccination facilities anywhere, without needing a wired connection or even an onsite IT professional. However, the IT team can still monitor and fine-tune connectivity and security centrally through a cloud-based network management platform.

Western Health in Victoria provides a comprehensive, integrated range of services from its various sites; ranging from acute tertiary services in areas of emergency medicine, intensive care, medical and surgical services, through to subacute care and specialist ambulatory clinics. Western Health provides a combination of hospital and community-based services to aged, adult and pediatric patients and newborn babies.

As Australia's COVID vaccine requirements increased during the pandemic, Western Health needed to establish a temporary COVID Vaccination Centre staffed by 100 employees out of the Melton Vaccination Hub. The healthcare provider needed day-one cellular connectivity to meet staff requirements.

Western Health implemented Cradlepoint 4G and 5G wireless networking solutions to enable primary connectivity at the temporary site. This gave 100 on-site staff secure access to patient vaccination and health records and enabled clinical staff to increase capacity from administering 50,000 vaccines per month to 50,000 vaccines every 10 days.

Clinic Within a Store

Many clinics and pharmacies are located within a larger store or a nursing facility or hospital. To keep patient information secure, most of these in-store offices have to bring their own network. An all-in-one Wireless WAN solution with enterprise-grade security can provide secure cellular-based connectivity that is completely separate from the host site's network.

Ambulances and Medical Vehicles

Communication of an incoming patient's status between medical vehicles and hospitals is crucial for treating injuries and other emergencies correctly and quickly — especially for time-sensitive scenarios such as a person sustaining a life-threatening event like a stroke. High-performance, always-available connectivity supports on-board video communication and data transfer en-route to the nearest care facility.

Telehealth

Telehealth visits are commonplace today for all types of care. LTE and 5G routers can be sent home with doctors and/or used in a clinic, enabling high-bandwidth, low-latency video streaming on either end of a telemedicine appointment.

Cradlepoint's NetCloud Service and cellular-enabled wireless edge routers and adapters use LTE and 5G to reliably connect medical professionals anywhere.

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Precision oncology and patient care

Professor David Thomas, Director of the Kinghorn Cancer Centre and Lab Head of Genomic Cancer Medicine at the Garvan Institute of Medical Research Australia

Cancer is fundamentally a genetic disease, driven by mutations that drive cancer growth. Just as each person is genetically unique, so the genomic profile of no two cancers is the same.

Precision oncology uses knowledge of the genomic profile of each patient's cancer to guide accurate and personalised therapy. Rapid developments in two related fields have enabled precision oncology. First, the robust and affordable access to genomic tools in the clinic. Second, the development of biomarker-dependent drugs that can exploit the genomic vulnerabilities identified.

The effects of these innovations are transformative.

Patients may be able to avoid treatment that is unlikely to work, and have an increased likelihood of more effective treatment, which has the potential to reduce healthcare costs and improve patient outcomes.

Optimising treatment

Precision medicine using genomic tools is the future for all cancer treatment. As with all cancer treatments, precision oncology will be initially used in advanced cancers, with the greatest impact in rare and high-mortality cancers like sarcomas and cancers of unknown primary[1,2]. In these settings, genomic medicine could be a game changer. Rare cancers are often misdiagnosed, and suffer from a lower priority in cancer research, leading to a paucity of standard treatments and new therapies.

The future for precision oncology is illustrated by lung cancer. Lung cancer is a leading cause of cancer death in most higher income countries. Lung cancers are both common, and often diagnosed very late in the illness. Each year, about 12,000 Australians are diagnosed with lung cancer[3]. It is the fifth most common cancer in Australia, accounting for 9% of all cancers diagnosed and is

responsible for almost one in five cancer deaths in the country.[2]

Lung cancers are highly mutated, with >100,000 mutations found in some cases[4]. In the 1990s, conventional chemotherapy was relatively ineffective, leading to few treatment options for those in whom the cancer was no longer curable.

The development of tumour genomic profiling combined with new treatments has transformed treatment options for patients with lung cancer.

By 2021, we have identified more than 11 different drug targets in lung cancer. The use of the right drug in the right patient has transformed outcomes, leading to extension of survival by years in many cases. More than half of all patients with lung cancer will carry one of these 11 drug targets. A single comprehensive genomic panel can now identify all 11 drug targets at one go, rather than gene by gene. The challenge in Australia today is to transition from single gene tests to comprehensive genomic panels.

The question then is how can genomics and precision oncology play a vital role in the shift towards value-based healthcare?

Precision oncology and value-based healthcare

With these advances in genomics and matched therapies, and also a deeper understanding of the molecular biology of cancers, we can now deliver better value by moving away from a one-size-fits-all model for cancer treatment.

In the example of lung cancer, moving towards testing all drug targets at one go in order to find out what is present in a patient's tumour, enables the use of that information as early as possible in the patient's journey to guide the choice of best treatment. To show the potential benefits of this approach in Australia, we have developed a large-scale genomic screening program focused on lung cancer called 'ASPiRATION'.

In a partnership between Roche Australia, the Thoracis Oncology Group of Australia, and the Australian Government, ASPiRATION aims to assess the impact of personalised health care in lung cancer — potentially transforming the way cancer care is administered in this country. A first-of-its-kind in Australia, ASPiRATION will generate high quality, real-world clinical and medical data about the impact and value of comprehensive genomic profiling (CGP), precision medicine and personalised health care (PHC).

We hope to show that comprehensive genomic profiling — when implemented at scale along with tools and processes to support personalised care plans, rapid access to innovative medicines and systematic tracking of clinico-genomic data — enables the promise of truly personalised health care by identifying the right treatment for the right patient, at the right time.

The 11 approved drug targets are present in almost 50% of all lung cancer patients today.

"Lung cancer is a poster child for the ongoing success of precision oncology, but the principles of precision apply to all cancers"

By 2023, assuming the current success rates in clinical trials, we expect that number to go up to 25 druggable targets. Lung cancer is a poster child for the ongoing success of precision oncology, but the principles of precision apply to all cancers.

Given that cancer is now the leading cause of death in high income countries, it is critical for health systems to understand the value proposition of precision oncology, to affordably and equitably introduce these into the care of cancer patients.

I also predict that genomics-based precision medicine will be implemented earlier in the cancer journey, moving from the incurable setting to adjuvant treatment, diagnosis, and even to the pre-diagnostics space — where we might be able to identify people at differential risk and screen for them.

Prevention, early detection, accurate diagnosis, curative therapy and personalised treatment of advanced cancers will all be influenced and affected by genomics and targeted therapies. I cannot think of an area of cancer care which will not be changed by the use of genomics, in Australia and beyond. The future is coming: we should be preparing for it today.

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Smart electrification for smart hospitals

Ian Richardson, Building Solutions Technical Specialist, ABB Australia

Florence Nightingale is regarded as the founder of modern nursing, gaining prominence as a manager and trainer of nurses during the Crimean War. One of her notable quotes was "The very first requirement in a hospital is that it should do the sick no harm".

Hospitals are complex installations utilising multiple applications that must work flawlessly 24 hours a day, 365 days a year. Electrical supply availability supports operational continuity, and this is especially crucial in emergency rooms, intensive care units and operating theatres, where supply interruptions can be a matter of life and death.

The ability to ensure supply continuity in hospitals can be a big challenge, requiring deep knowledge of correct installation practices and devices that can ensure uninterrupted service and a healthy environment. Guidance can be found in standards such as AS/NZS 3003, Electrical installations – Patient areas, IEC 60364-7-710, Electrical installations of buildings – Requirements for special installations or locations – Medical locations, and in publications such as the Australasian Health Facilities Guidelines produced by the Australasian Health Infrastructure Alliance, as well as the state-based guidelines published by the respective health departments of New South Wales, Victoria and Western Australia.

A modern hospital or healthcare facility is not an ordinary building environment, it is a place of healing, where care is provided to patients to improve their health. The building must not only provide the security of a reliable electrical supply ensuring service continuity, but it also has a role to play in the care of the patients, staff, and visitors.

The central nervous system for the most resilient healthcare facilities

The electrical system of a hospital or health care facility could be described as the central nervous system of the building. Of paramount importance is delivering the most effective outcomes for patients. To achieve this, a modern healthcare facility must maintain an environment where power resource-intensive medical treatments can be provided with efficiency and reliability, yet still meet the sustainability goals of the facility.

Meeting these specific demands requires a holistic approach to understand the facility's individual needs, as well as providing the right mix of technology working seamlessly together to deliver the required outcomes. The building infrastructure needs to be smart. A smart building has become a widespread phrase used to define the needs of a modern building. In this context we could say a hospital or healthcare facility needs to be a smarter building, due to the critical nature of the use of the building.

Smart solutions combine reliability, efficiency and safety

The first aspect of the smart hospital seen by staff, patients and visitors can be the building automation system. While automated to the needs of the hospital, an automation system such as ABB i-bus KNX can reduce staff workload through the automation of core functions such as lighting, shutter and blind control, heating, ventilation, security, and energy management. Patient rooms can be automatically configured to respond to individual needs such as light intensity, sunshine glare and optimal climate.

A smarter hospital can become an active player in optimising the health of those in its care. The automatic adjusting of lighting intensity can assist staff working overnight to stay more alert. Lighting in pharmacies can be optimised for colour discrimination, a crucial aspect for dispensing medicines. Emergency lighting luminaires and systems provide clear instruction and help minimise injuries in high-risk and emergency evacuation situations. Periodic maintenance and testing of emergency luminaires according to Australian standards can be performed remotely without interruption to the safe operation of the facility.

The smarter hospital can help manage the quality of the air we breathe by measuring the CO_2 in the atmosphere or creating positive pressure rooms for immunocompromised patients. The HVAC system can account for up to 50% of the operational costs of the building, so energy efficiency measures in this area are paramount. Using high efficiency drives in the HVAC system combined with ABB i-bus KNX building automation controls to manage the area environment according to occupancy, specific use, and comfort requirements, can all contribute to increased cost savings.

Digital solutions can provide healthcare facilities with new levels of energy management. Systems such as ABB Ability Energy and Asset Manager offer a state-of-the-art solution that can integrate energy and asset management in a single intuitive dashboard. This tool allows building managers to view, manage and optimise building systems from anywhere, at any time. Predictive, condition-based maintenance can be implemented to ensure reliability and availability of the healthcare facility's power system and equipment. In addition, real-time monitoring of energy usage can achieve maximum energy efficiency and lower costs.

The smarter hospital can have an active role in improving patient health. Patients can enjoy a more personalised experience with greater comfort. The often complex and high-risk procedures undertaken can be performed in safer, more reliable surroundings protecting both patients and staff. For the business side of the hospital, improved asset management is achieved through predictive maintenance, reducing catastrophic failures and down-time. Network resilience can be seen from power supplies that are uninterrupted even during power grid outages. Finally, intelligent data analysis delivers efficiencies and cost savings, confirming the return on investment of the facility.

The road to net zero emissions in **health care**

Abe Fitzsimons, Healthcare Segment Lead, Pacific Zone at Schneider Electric

Health care will face substantial challenges transitioning to a net zero future, but those challenges must be faced sooner rather than later.

Australia's healthcare industry contributes about 7% of total greenhouse gas emissions — representing 35,772 kilotonnes of CO_2 — with the majority embedded in supply chains. With this significant impact, we need a concerted and collective sector-wide effort to abate emissions.

Embracing an energy transition means change, but adapting will have a myriad of advantages, creating more efficient, digitised, greener facilities with benefits for both clients and climate.

I recently hosted an industry webinar, 'Harnessing innovation: the road to net zero emissions in Australian healthcare facilities'. I was heartened that half the participants had set net zero by 2050 targets, and we heard how the Climate and Health Alliance is building collaboration across the sector towards eliminating emissions.

As the Alliance's Fiona Armstrong said, the sector must recognise that climate change is the biggest current threat to global health, threatening our existence as a species. However, the fact the other half of the webinar audience was yet to set net zero targets demonstrates that many in the sector must begin moving more quickly.

Setting 2050 targets is a good start, but it is the trajectory that counts if we are to get ahead of the curve and keep global warming below 1.5 degrees.

Core to the solution are digitalisation and electrification. Decisions to digitise and move away from fossil fuels should be embraced now by every healthcare organisation.

These decisions can result in immediate wins for the climate. Technology exists today to facilitate them, with solar PV, increasingly advanced batteries, electric vehicles and digital monitoring.

Our ability to reduce energy consumption is limited by a lack of information, which can be addressed by digital technology. The internet-enabled interconnectivity of our power systems, heating and cooling systems, appliances and machinery can now be monitored and controlled.

Gas use in hospitals must be supplanted by electricity, renewably generated electricity. Shifting away from fossil fuel-driven electrical sources, smart facilities can find alternative, cleaner ways to procure electricity needed to power healthcare facilities. They can generate their own solar power or enter into power purchasing agreements for renewable energy.

Electrification will also facilitate digitalisation, allowing facilities to leverage the Internet of Things to connect multiple systems and aggregate data to create a digital model of the facility and its assets.

In practice, this will translate into streamlined solution design that is based on real-time monitoring and data-driven decision-making, enabling more efficient energy management.

As a result, a multitude of benefits can be expected: lower energy and maintenance costs, less downtime, better patient experiences, and improved staff safety and satisfaction. Ultimately, we will see reduced energy consumption and fewer carbon emissions.

These processes can easily be embedded into plans for new facilities, but quick gains can be made today by retrofitting existing ones. A digitally controlled and connected energy system can reduce energy usage in most facilities by around 20%.

I see the future of health care built in a system that is driven by data, with proactive, actionable insights key to improving operational efficiencies and patient care. This data is also crucial to improving our contribution to combating climate change.

Knowledge must be shared across the sector, encouraging and educating suppliers to join the journey to net zero.

The healthcare industry as a whole must become even more client and climate conscious, collectively striving for net zero emissions, not just within a facility but across its supply chain, and play its part in abating the biggest global health crisis of this century.

Lippincott® Procedures Australia

Lippincott® Procedures Australia is a point-of-care procedure guide that saves nurses' time and provides safer, consistent and more effective care.

It provides real-time access to Australian step-by-step guides for up to 450 evidence-based procedures and skills in more specialties than any other procedures and skills-based resource currently available to medical and academic institutions.

The online evidence-based procedure guide reflects Australia's nursing protocols, regulations, terminology, and drug names.

- Save valuable time spent creating, writing, reviewing, and tracking all procedures
- Providing immediate access to trusted clinical information
- Promotes more effective inter-collaborative professional practice
- Evaluating staff competency and adherence to standards
- Empowers clinicians with the knowledge and confidence to make informed clinical decisions
- Improves patient outcomes, reduces errors, and promotes consistent, standardised care across your organisation

Lippincott Procedures Australia has been mapped to the National Safety and Quality Health Service (NSQHS) Standards. The NSQHS Standards provide a nationally consistent statement of the level of care consumers can expect from health service organisations.

FIND OUT MORE

SCAN ME

Wolters Kluwer

A day in the life of **Leanne Northrop,** an Aged Care Nurse Practitioner

5:30: I'm up and at 'em. Nothing of importance can be considered before a cup of tea. Lately I have this while I listen to the news since aged care is so prominent, and often is linked with COVID-19 data and directives.

Since so much can turn on a dime these days, it feels better to be prepared! This is also why I make my lunch. It is usually something that can be eaten quickly and won't make a mess while I type or read.

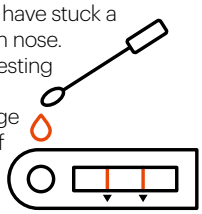
Then off to work.

08:00: I arrive at the Nurse Practitioner clinic. This is a telling moment.

If clinicians are at the door, charts in hand, their resident may have a pressing need to be seen. It could be something like pain relief, deterioration or both.

If it is a resident waiting at the clinic door, this is usually a good sign as they are up and about and motivated.

Whatever the need is, nothing can happen before I have stuck a swab up my own nose. (Rapid antigen testing must be the residents' revenge to know the staff enduring this regularly too.)



09:00: Time for the COVID-19 meeting for Senior Leadership. Lately this has been as serious as chest pain. The meeting takes on a sombre atmosphere as we brace for latest statistics in the state, our region, amongst our staff, their close people, our residents and their close people. There is a mutual goal to keep residents safe. We discuss how to care for residents who are deconditioning due to isolation, who don't want to go to hospital, whose doctors can't always come in and who are missing chair Tai Chi and Bingo. Covering shifts when our colleagues are sick is a grim challenge too, as we all adapt to fill their boots. There is also the sourcing of RATs, PPE, food delivery, keeping families in touch and coaching to ensure PPE is worn carefully.

It's a relief to know the team understand and sympathise with how stifling summertime PPE can be, and how it turns us into drooping, pruney, drippy clones with fogged up glasses that residents can't recognise or understand, and who we can't see.

05:30 08:00 08:30 09:00 09:45 10:30

08:30: It only takes a little while to bring my key resources to hand for the day. The computer gifts me with Therapeutic Guidelines for currently endorsed guidance, PBS to check medications, pathology results and the program for Medicare billing. NPs can prescribe, diagnose, send off for pathology and claim from Medicare and I want to ensure I'm looking at the latest evidence base for all I do.

09:45: A resident from our Independent Living Unit is waiting for me. He told me he had a terrible toothache, could not eat and wondered if I could pull the tooth out. Tempting as it was, dentistry is not in my scope of practice. Without health cover, or when funds are limited, treatment options are limited, so NP referral was written, a dental service identified and, with advocacy, and an appointment made. With pain relief and a modified diet in the meantime, the gentleman was able to manage.

10:30: Independent Living Unit rounds commence after discussion with the team about their feedback, priorities and concerns. Clinical, care and support staff know the residents so well that they notice small, but significant changes; for example, a person who is unusually pale, or green around the gills, or has blue, cool fingers. When these observations are communicated, we can get underway with assessment and interventions that tie in with the GP visit, and can hopefully keep residents at home and well.

I took my kit to a gentleman who has a wound on his lower leg that has not reduced by the required 25% in one month or healed in three months despite the clinician's best efforts. The wound was swabbed to rule out infection, photographed, plans made for biopsy and referral to a dermatologist. Skin is so tough but so fragile, tells a million stories and can heal in the most arid health landscape so is always deserving of our best efforts. I also did a Doppler Test to check his lower leg circulation. A healthy Ankle Brachial Index will ensure the man had enough effective circulation to heal skin after any pending interventions.

Leanne Northrop is a Nurse Practitioner (NP) at Peninsula Villages, an aged-care facility on the Central Coast, New South Wales. She recently relocated from Western Australia to the Central Coast aged-care facility, and has worked in rural and remote areas, supporting elders and working within various healthcare settings.

Peninsula Villages is said to be one of the few aged-care facilities to have a full-time NP on-site. After experiencing two extended lockdowns during the COVID-19 pandemic, the aged-care facility considers the role of an NP to be the way of the future in aged care.

13:50–13:55: A socially distanced group of five nurses sang "happy birthday" loudly to one of the team between the first and ground floor. It was quite fun. I've never done that before.

12:15: Our current group of student nurses had a short NP-led toolbox session by watching the Doppler procedure, and then discussing contemporary wound care products, and the rationale for their use. It feels good to teach new nurses setting out and introducing them to the complex specialty of aged care.

13:00: High care rounds commence after discussion with the team. They are worried about a resident who is unusually agitated. The lady is not allowing interventions or assessment. It was beginning to look like delirium was causing her agitation. Her Advanced Care Directive was for active management and transfer if unwell, so a transfer to ED was initiated.

I went on to review a gentleman who had been suffering frequent falls. The most recent occurred when he bent forward to pick up his binoculars from the floor. He tells me he has taken to birdwatching since he's been in lockdown. He sustained a laceration to his hand that I was able to suture. This prevented a hospital visit, which is one of our KPIs. It's been a while since he had a blood test and a medication review to check for anything that may also contribute to a fall, so I, in partnership with the GP, initiated these things.

In all areas, there are medications to be charted, ceased, checked, crushed, injected and explained. Like all nurses my day is full of little parcels of resident and family education. As an NP this often relates to medications no longer in favour (think Valium), or why research recommends a supplement (think vitamin D for bone health and to minimise secondary fractures). It can be challenging (think of inventive ways to explain antibiotic stewardship in full PPE to a person who is hard of hearing and has the right to ask).

14:00–15:00: High Care Quality Meeting. With the multidisciplinary team, trends in skin tears, pressure injuries and falls are reviewed, and preventative interventions considered and implemented. We were pleased to know there are new tracksuit pants and shorts in all sizes, with built-in hip protectors now available. When falls can't be prevented at least we can try to reduce the 'harm' from falls; and there would be the added benefit of not trying to keep track of hip protector pads!

12:15 · 13:00 · 13:50 · 14:00 · 15:45 · 17:30

15:45: Time for a cuppa and the paperwork… (although paper actually features less and less, which I'm still getting used to).

Progress notes underpin a person's condition and care, and our communication and accountability, so I'm keen to contribute.

NPs can also submit a Medicare claim for each visit, which raises funds for the organisation and contributes to sustaining the role, so I'm also keen to ensure this is done!

Finally, there is preparation for a case conference tomorrow with the family of a resident approaching end of life.

It's a privilege to be part of a person's journey.

We all want to contribute since it is understood, if not spoken, that we only get one opportunity to make a person's end of life right.

17:30: Done for the day. Home to play with my daughter's new puppy and go for a walk.

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**.

Transforming lung health

The world's first dedicated lung scanner, XV Scanner, has been installed at the Prince of Wales Hospital in Sydney.

The scanner uses an automated scanning process to produce detailed lung function information in real time, and will help people living with lung conditions such as chronic obstructive pulmonary disease, cystic fibrosis and asthma. It is said to help with early disease detection and accurate monitoring of chronic respiratory conditions.

The XV Scanner will be used by researchers and clinicians from the University of New South Wales (UNSW) and the Sydney Children's Hospital, including lung health expert Professor Adam Jaffe, who is currently the John Beveridge Professor of Paediatrics at UNSW.

Dr Fouras, Founder and Chief Executive Officer of 4DMedical, described its development as a "transformative moment in lung health history".

Minister for Health and Aged Care Greg Hunt said, "The development of the XV Scanner is a wonderful example of Australia again punching above its weight in the world of health and medical research."

4D Medical received $28.9 millio through the Medical Research Future Fund's (MRFF) Frontier Health and Medical Research Initiative to develop and commercialise the scanner.

Dr Fouras said the XV Scanner would not have been possible without the MRFF investment. The XV Technology software is already being commercialised, while the scanner remains on track for clinical deployment in late calendar 2023.

Coupled with 4DMedical's XV Technology, the device provides detailed quantitative data on respiratory function via an automated process, which delivers

Digital rendering of 4D Medical's XV Scanner installed at Prince of Wales Hospital

4DMedical CEO & Founder Dr Andreas Fouras and Federal Minister for Health and Aged Care Greg Hunt MP at the Prince of Wales Hospital in Sydney, for the unveiling of 4DMedical's XV Scanner (pictured).

important advantages in other areas as well, including: rapid scan times, which improve patient experience and also deliver increased throughput, thereby improving the economics for healthcare providers; and increased access to XV Technology for more patients, including children, the elderly and the very unwell.

The successful placement of the scanner at the Prince of Wales Hospital means 4DMedical has designed, built and deployed the first XV Scanner in an Australian hospital within 12 months of MRFF funding, meeting the ambitious target communicated to the market at the time. Importantly, engineering research and development has been completed in-house and within budget, resulting in the creation of a significant body of intellectual property.

4DMedical is now working with leading medical researchers to progress a series of clinical trials that will take the XV Scanner towards regulatory clearance by late 2023. Success here will give 4DMedical a superior product offering accelerating penetration of the global respiratory diagnostic market currently valued at more than US$31 billion a year.

Unaffordable innovation?

The rising cost of patient care

Richard Gerdis, Vice President & General Manager, Asia Pacific & Japan at LogicMonitor

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The past two years have seen Australia's medical industry undergo significant changes, with e-health and telehealth quickly becoming the norm. The industry has already seen the implementation of ePrescriptions and new MBS items to support remote care as more practices adopt telehealth services to reach and treat patients effectively. However, as digital care becomes more prevalent, practitioners are faced with fragmented and, at times, difficult-to-obtain patient records. They also face growing compliance challenges around the transfer, storage and management of sensitive patient information.

In response, the government has begun exploring methods of connecting and consolidating patient data to offer complete record visibility. With the application of AI, there is also the potential to aid practitioners in delivering hyper individualised treatment. Still, the rapid adoption of multiple new technologies comes at a cost, with private practitioners within the industry facing mounting tech expenses driven by the need to innovate faster to stay competitive.

With so many new technologies out there, how does a practice discern which are truly shaping the future of patient care and prioritise accordingly? And what challenges does the industry need to overcome to see the right platforms implemented at scale?

AI and patient care

AI has been breaking ground in the healthcare sector by assisting practitioners in tackling practical challenges. However, the most exciting application for specialists and general practitioners is 'hyper individualised treatment'. Hyper individualised treatment develops patient-specific tailored treatments based on more than a diagnosis. In combination with AI, the level of depth this approach provides reduces diagnosis time, improves treatment accuracy and provides practitioners with insights that may have otherwise gone unnoticed.

Despite numerous benefits, privacy issues, such as how much data access is given, what kind and how it's handled, make the implementation of machine learning difficult unless highly restricted. Further, supporting such complex systems will require the use of foundational tools that help monitor and support the performance of and access to critical data. Fortunately, AI-enabled monitoring already exists and is used by many companies to keep existing databases up and running efficiently. The technology is there but to evolve the industry will need to reassess its approaches to consolidated record keeping, compliance and privacy.

Continuity of care in a fragmented system

'Continuity of care' is the holistic management of a patient by a single practitioner or within a network of providers. Substantial bodies of literature outline the benefits of continuity

"Larger practices that house sizable amounts of patient data spend excessive time and resources switching between tools to gain insight into issues and spot problems"

of care, from improved patient satisfaction to reduced avoidable hospitalisation. Record visibility is a crucial aspect of continuity of care, due to the fact that having a complete understanding of a patient's medical history is essential to prescribing the best treatment. While initiatives such as My Health Record have had success addressing record visibility issues within the public space, the adoption of these systems remains low amongst private practitioners. The challenge is not the concept itself but the numerous services and rising costs that underpin the program and managing these in an efficient fashion. Affordability must be a primary consideration, and what practitioners require are streamlined digital solutions, particularly concerning unified observability and record keeping, that remove unnecessary complexity from what should be a straightforward process.

The cost of compliance

All healthcare providers in Australia have professional and legal obligations to protect their patients' health information. Different specialisations have different requirements; however, the new challenge is managing patient data compliance across hybrid physical and digital environments. In the past, patient record regulations focused on the physical storing of information, but as digital records expand, practitioners face a slew of additional criteria. Moreover, today larger practices that house sizable amounts of patient data spend excessive time and resources switching between tools to gain insight into issues and spot problems. Consolidating systems and tools through a unified observability platform will allow healthcare IT specialists to view the performance of these systems through a single platform, and this approach can be applied to every system: from security to data storage. It can cut down on costs, and make collaboration across teams, offices and practices easier.

Making innovation affordable

Amidst fragmented systems and complex privacy requirements, practitioners are spread thin, and with data sprawled across on-premises and digital, costs can easily compound. For example, like many healthcare organisations, Bupa Australia relies on a vast network infrastructure to support its operations. Following a series of acquisitions in 2017, its IT team noted that the large number of different tools Bupa used for IT monitoring was neither efficient nor cost-saving. As a result, the organisation made the decision to modernise. They deployed a cloud-based observability and monitoring solution across two main data centres. Doing so allowed the team to quickly eliminate extraneous monitoring tools to streamline operations. Their new platform also helped the team automate time-consuming processes.

COVID-19 has pushed the healthcare industry forward in many ways; however, fragmented patient data and costly and complex systems are still holding the industry back. Furthermore, healthcare institutions employ a vast array of technologies to operate on a daily basis, and if one part of that technological ecosystem goes down, it can have a huge knock-on effect. To advance, the industry must address the urgent need for better IT management of the critical technologies that form the foundation of patient care such as observability. It's time to start practising essential 'technology self-care' for the platforms that power modern health care and establish the foundation for future innovation.

Recovery and mental health

The Acute Adult Mental Health Inpatient Service, with a modern therapeutic space ensuring people can recover in a calm, healing environment, has officially opened at Blacktown Hospital.

The 30-bed unit has been designed to support recovery-orientated contemporary models of care, with locals with lived experience and the wider community playing a key role in its design and delivery, said Minister for Mental Health Bronnie Taylor at the opening.

"There is an abundance of natural light, beautifully designed outdoor areas, sensory and de-escalation spaces and stunning artwork throughout the new facility.

"Importantly, people with lived experience were involved in every step of the development process, to ensure delivery of the best outcome for consumers, staff and the western Sydney community.

"All of this contributes to a therapeutic space that promotes cultural, emotional, psychological and physical safety and empowerment."

The new unit features: 30 single-bed rooms each with unique artwork; two spacious dining and recreation rooms filled with natural light; a dedicated room for art therapy and other therapeutic activities; sensory modulation rooms including comfortable chairs and lounges, TV and skyview ceiling panel; indoor and outdoor exercise and fitness facilities; and landscaped gardens.

Western Sydney Local Health District (WSLHD) Chief Executive Graeme Loy said feedback on the new facility has been fantastic. "I am excited for ongoing mental health redevelopment work across our District as we continue to provide the best possible care for the people of western Sydney and support their recovery."

The purpose-built unit is part of the $700 million state-wide Mental Health Infrastructure Program to support the delivery of mental health care reform in NSW.

Consumers and staff transitioned from Bungarribee House at Blacktown Hospital into the new unit in February following a smoking ceremony.

The relocation also complements the $700 million Blacktown and Mount Druitt Hospitals Expansion Project and makes way for Bungarribee House to be demolished and work to begin on an additional new purpose-built mental health facility at Blacktown Hospital.

Reducing
medicine-related mishaps

The Royal Victorian Eye and Ear Hospital (Eye and Ear) is said to be the first hospital in Australia to implement the Pharmacist Shared Medicines List (PSML) medicine safety initiative.

Produced only by pharmacists and uploaded to My Health Record, it is a consolidated list that includes information about prescription and non-prescription medicines such as over-the-counter and complementary medicines, including vitamins and herbal remedies. It also includes the health practitioner's reasons for prescribing each medicine and how and when patients should take them.

The PSML helps patients and healthcare providers manage medicines safely throughout a patient's healthcare journey, including when they are discharged from hospital and go home or into a residential aged care facility.

When this information is available in My Health Record it can help patients and healthcare providers avoid medicine-related mishaps and ensure continuity of care.

According to Australian research by the Quality Use of Medicines and Pharmacy Research Centre, UniSA, an estimated 250,000 hospital admissions are medicine-related and two-thirds are potentially preventable.

The Australian Digital Health Agency (Agency) and the Victorian Department of Health have worked closely with The Royal Victorian Eye and Ear Hospital in East Melbourne to deliver PSML at the hospital.

The Director of Pharmacy at Eye and Ear, Catherine Rokahr, explained that pharmacists highlight changes to a patient's regular medicines made during a hospital stay.

"This is detailed in the discharge medicines' list uploaded to My Health Record which becomes part of the PSML and shows GPs and community pharmacists any medicines that have been stopped, directions and doses that have changed, new prescriptions and the reasons for each medicine use and medication changes," she said.

Jeanette Anderson, the Director of Digital Health at Eye and Ear, added, "PSML is part of the hospital's commitment to an outstanding patient experience and there is real interest in adopting this medicine safety initiative across the state's health system."

Agency CEO Amanda Cattermole said, "The Victorian Department of Health and the Royal Victorian Eye and Ear Hospital are to be commended for their support for the Pharmacist Shared Medicines List initiative.

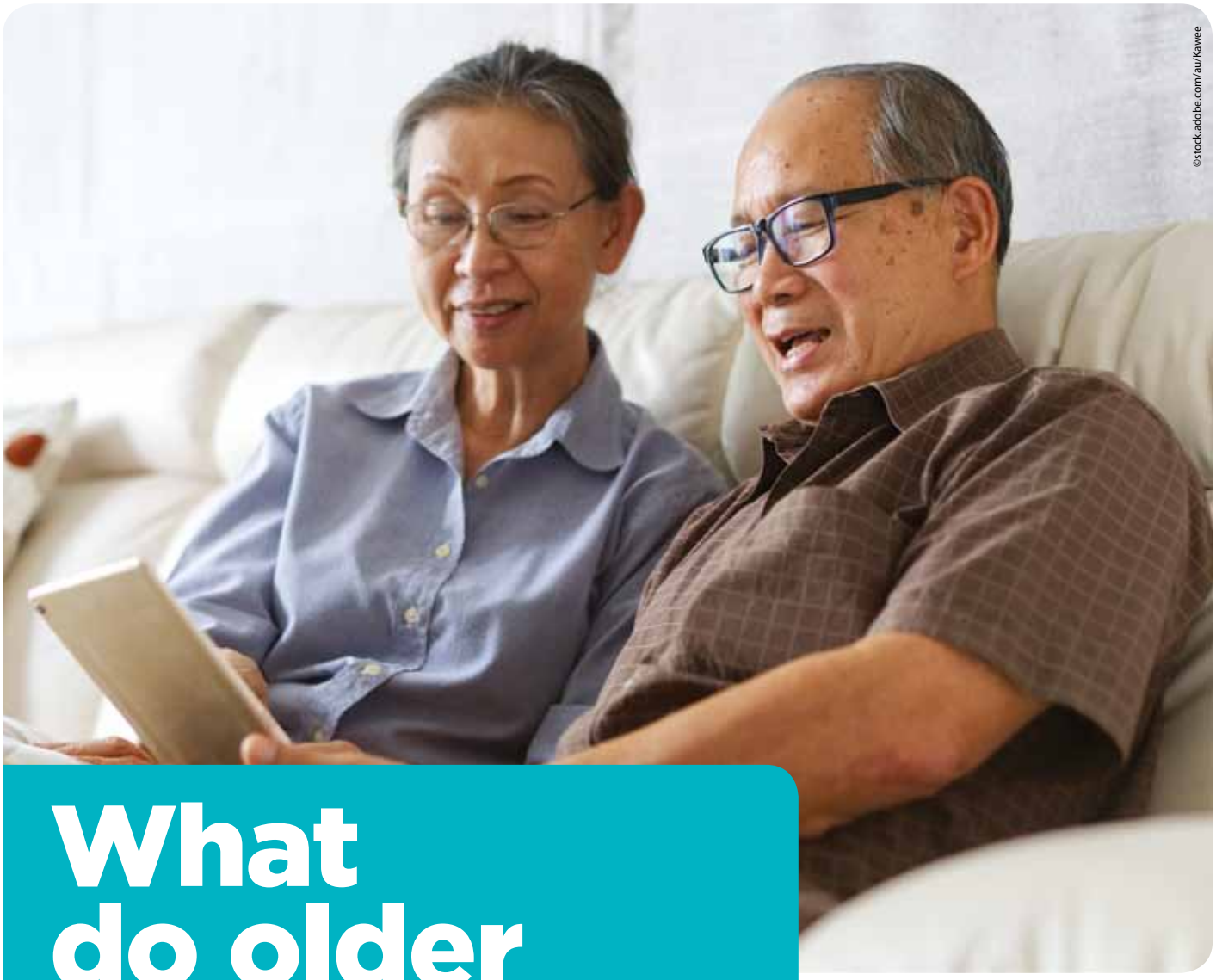
"Now this Victorian hospital has led the way in implementing this initiative, the Agency and the Department are working to extend PSML to other health services in Victoria."

The Chief Digital Health Officer at the Victorian Department of Health, Neville Board, said Victoria's digital health roadmap centred on the secure sharing of critical health information between clinical settings, making each patient's care journey safer.

"I thank all the staff at the Eye and Ear for taking the lead and getting essential patient medicines information into My Health Record," Board said.

A Pharmacist Shared Medicines List (PSML) contains information about the medicines a patient was known to be taking at the time the list was created.

The list includes medicines that have been prescribed to the patient by their doctors and other non-prescription medicines that they may be taking (such as paracetamol) and other known over-the-counter medicines.



What do older people want from their health care?

New research by the National Ageing Research Institute has found that trust in the aged-care system is particularly low, with almost 50% of older people revealing they do not trust that they would receive good care in residential aged care. And that's not all — 41% consider residential aged-care facilities to be depressing places.

The report, titled 'What do older people want from their healthcare?', conducted on behalf of the Victorian Department of Health, has revealed older Victorians have a lack of trust in, and understanding of, the health- and aged-care systems. Less than 50% of respondents were aware of the healthcare services available to them. Around 22% of older people surveyed do not understand the My Aged Care system.

However, taking an active role in management of health was deemed to be very important by 82% of older people, and more than 75% said living independently in their own home for as long as possibly was a top priority.

"The Royal Commission into Aged Care Quality and Safety highlighted that older Australians want to remain at home. This research reaffirms this, but also shows there is a lack of faith in our health- and aged-care systems' ability to provide adequate support," said NARI Acting Executive Director, Associate Professor Frances Batchelor.

"One of the key things older people want is to be heard, and this report is an important avenue for their voices. If we listen, the challenges older people and their carers are facing can be planned for and addressed," Associate Professor Batchelor said.

Based on this research, NARI has identified the core priorities of older people as being:

1. For their opinions regarding health and wellbeing to be heard.
2. Choices to be built into their health care.
3. Support to identify, navigate, access and use healthcare services.
4. Effective communication with service providers.
5. Health care that is integrated and responsive to their needs.

More than 1 million Victorians are aged over 60. Carers are also feeling the strain from a lack of confidence in the system. Less than half of carers felt that caring was a fulfilling experience, and only 16% felt well supported by other carers and services to help share the load. With more than 60% of carers surveyed aged over 65 themselves, there is increased likeliness that they will have increasing health needs of their own.

"Older people and their carers want and deserve support that is informed by their needs, priorities and expectations," Associate Professor Batchelor said.

"We hope this report, and the important findings within it, will help inform government and create a starting point for much needed change within the system."

The research included a survey of almost 300 older people across Victoria, between April 2019 and February 2020.

Featured Products

Keep up with the latest industry innovations

Biocontainment rooms

The AGEMA Biosafety 2.0 provides instant additional biocontainment wards or rooms for highly infectious diseases. It allows hospitals to rapidly increase capacity to manage infectious patients in a temporary and reversible manner and the modular system can be deployed from one to hundreds of beds. The construction and design suit any hospital layout and they can be fitted with access control and connected to the fire safety system.

Due to its air renewal system and the created negative pressure for the room, the AGEMA solution helped reduce airborne contaminants (up to 90% reduction in 3 min) and is designed to ensure no airborne contaminants go into the corridor or adjoining rooms.

The air filtration system works at a constant 10 to 12 air changes per hour as per BSL 3 & 4 requirements and most recent WHO recommendation for the Omicron variant. For patient and staff comfort the ventilation system has low noise levels and low energy consumption. For ease of operation, the antechamber has automatic doors made from toughened glass and room doors are custom fitted with viewing panels and filters.

The AGEMA system can be installed and operational within hours, is fully reversible and once containment is no longer required, it can be disassembled and redeployed or stored for future use.

Hospital Products Australia
www.hpaust.com

Featured Products

Disinfectants and wipes

Whiteley's surface cleaning and disinfection products can help keep healthcare and aged-care facilities clean and free of bacterial contamination.

The company's range of clinically researched products include:

Viraclean — a hospital-grade disinfectant that is proven to kill a wide range of bacteria and viruses, including coronaviruses SARS-CoV-2 (COVID-19), influenza virus, hepatitis B group virus, VRE, MRSA and more. Viraclean has a pleasant lemon fragrance and is available in ready-to-use, pour-on and spray-on formats. The formulation is said to have good materials compatibility.

V-Wipes is an Instrument Grade Disinfectant (low level) wipe with premium quality apertured fabric. The unique formula is proven to kill a broad variety of bacteria and viruses and kills SARS-CoV-2 (COVID-19) in 60 seconds. Perfect for cleaning and disinfecting surfaces and other non-critical medical devices.

Surfex is a dry surface biofilm remover + surface disinfectant with proven scientific data. Surfex is proven to kill *Clostridioides difficile, Mycobacterium terrae* (TB) and coronaviruses including SARS-CoV-2 (COVID-19). Surfex is said to have good materials compatibility especially when compared with chlorine/bleach.

Whiteley
www.whiteley.com.au

Defibrillator

Designed for professional rescuers, the ZOLL AED 3 BLS defibrillator provides in-depth rescue support to treat both adults and children from a sudden cardiac arrest.

The defibrillator guides rescuers in delivering CPR and is claimed to be one of the fastest AEDs in the industry at delivering a shock after chest compressions stop — two critical components to increasing chance of survival.

The RapidShock analysis feature enables the short rhythm analysis and allows defibrillator to deliver a shock, if needed, in 5 seconds. Minimising pause time is said to allow for more lifesaving CPR, improve CPR quality and can improve patient outcomes from sudden cardiac arrest.

The universal design of the CPR Uni-padz electrodes gives rescuers a single solution for both adult and paediatric victims of SCA. To treat a child, use the same set of pads and simply activate child mode. CPR Dashboard displays numerical CPR depth, rate and cycle time for additional guidance to the rescuer.

Using RescueNet Event Summary, detailed rescue performance data can be exported quickly and easily via USB or transferred directly over Wi-Fi. Data on CPR rate, depth, release velocity and compression fraction can be evaluated and used to improve future responder performance.

Other features include: Real CPR Help technology measures the depth and rate of chest compressions and provides real-time CPR feedback; monitor displays patient ECG, compression rate and depth, a CPR cycle countdown timer, shock count, total elapsed time, and the CPR dashboard; rugged design with an IP 55 rating and 1-metre drop test.

ZOLL Medical Australia
www.zoll.com/au

Chillers

MTA cooling systems are suitable for application in modern medical facilities, specialising in imaging and oncology technologies. Applications that typically involve cooling include MRI, LINAC and PET machines.

The systems feature the TAEevo Tech air-cooled medical chillers covering a cooling range from 2–260 kWr. With a chilled water supply temperature range from 30°C down to -10°C for the standard range, and down to -24°C for the LWT version, the TAEevo Tech range adapts to rapidly changing requirements and caters to all phases in the process, even in harsh conditions.

Complete flexibility to all user needs is due to MTA's evaporator configuration which allows the unit to operate with high flow rates and reduced pressure drops offering reliability and temperature control.

MTA is a European-based manufacturer and global supplier of commercial and industrial water chillers for both HVAC and industrial process applications covering a cooling capacity range between 2 and 1943 kWr. The MTA product range includes cooling-only and air-to-water heat pumps chillers, purpose-built laser chillers, covering both air- and water-cooled condenser configurations, with high efficiency and low noise options.

The company's products cover a large application range from industrial process cooling requirements such as food and drink, mining, biogas solutions, wineries, concrete cooling, laser cooling, plastics extrusion compressed air dryers, medical applications such as MRIs, Linac, PET, etc to traditional chilled water air-conditioning applications.

MTA chillers and heat pumps offer a plug-and-play, all-in-one solution, suitable in a wide variety of applications. With a robust design and fitted with quality components, MTA chillers are purpose built for industrial applications.

MTA Australasia Pty Ltd
www.mta-au.com

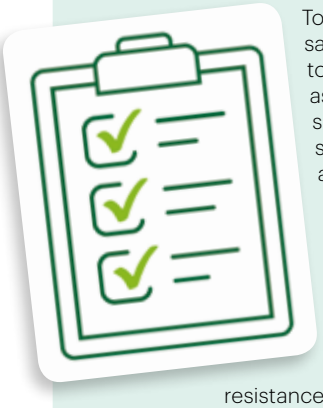
Featured Products

Air filtration audits

Camfil Australia's site service team can provide hospitals and healthcare facilities with obligation-free air filtration audits to help them meet relevant industry standards and identify potential operational cost savings.

This audit includes documenting the condition of existing plant room and internal HEPA location structures, external fabric, fixtures, fittings and mechanical services.

Camfil assesses the useful lifetime of HVAC equipment, identifying filtration requirements and recommending appropriate equipment improvements, HVAC filter change schedules and, where appropriate, HEPA filter change and NATA validation service schedules.



To identify potential long-term cost savings, the company can conduct total cost of ownership (TCO) assessments internally for each site using its patented Camfil LCC software to compare various filters and predict long-term costs.

Considerable long-term cost savings for healthcare sites are often identified through the upgrade of standard HVAC filters to premium, high-performance HVAC filters requiring less frequent replacement and lower resistance operation, which can result in reduced fan horsepower and energy consumption.

Camfil Australia can provide regular HVAC filter changeouts, HEPA filter changeouts and NATA validation services as required, using premium filters from its own stock holdings.

Camfil Australia Pty Ltd
www.camfil.com.au

Meeting growing regional needs

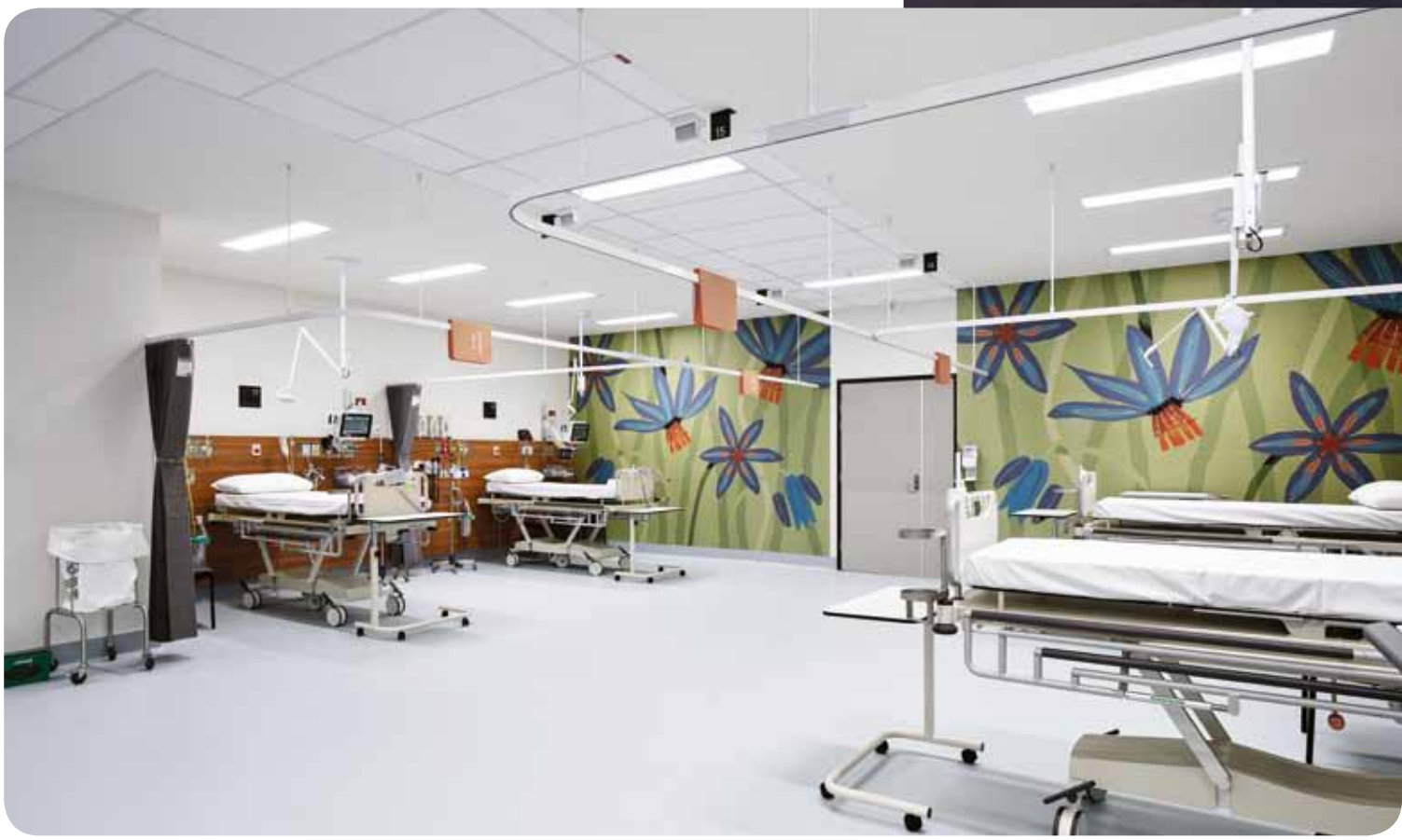
Located on a greenfield site in the Lower Hunter Valley of New South Wales, the new Maitland Hospital features clinical and emergency services, spanning over seven floors. The 50,000 m² space, developed by construction company Multiplex, offers a range of adult and paediatric services including emergency, paediatric, maternity, chemotherapy and contemporary operating suites.

The ground floor, spanning 11,000 m², accommodates the main entrance, retail space and key clinical departments that require direct public access. The 339-bed, $470 million hospital also includes a rooftop plant room and helipad.

Multiplex Regional Managing Director David Ghannoum said this hospital represents the sixth hospital Multiplex has delivered for the NSW Government in recent years.

"The new hospital delivers key services to increase clinical capability in the form of beds and treatment spaces to meet the health care needs of the growing Lower Hunter Valley community."

Multiplex's new build includes the delivery of clinical support services including central sterile services department, pharmacy, pathology, isolation rooms where required, plaster rooms and gyms to support both general and mental health services for residents. As well as upgrades to clinical spaces, the project included roadwork upgrades to the intersection at Chelmsford Drive and Metford Road as well as internal roadworks to create two separate hospital entrances.




MAITLAND HOSPITAL


Emergency – miirumalingiil tantuwakalpu
Triage
Reception
Triage

Works spanned a two-and-a-half-year period, with Multiplex commencing main works early in 2019. Significantly, a total of 3465 jobs were generated by the project, and at peak construction, some 600 people worked onsite per day.

Ghannoum said that as well as well as the successful delivery of the hospital, the project had generated some significant social and environmental outcomes for the Maitland community.

Social value outcomes were underpinned by the Maitland Connectivity Centre, a Multiplex initiative linking local job seekers with job opportunities on the project and beyond. The centre delivered over 50 Indigenous candidate placements as well as 15 traineeships.

The project also delivered environmental benefits following the HI framework based on GreenStar criteria and targeting a minimum of 45 points. This included a waste reduction and recycling scheme that generated only 3.6 kg of waste per square metre, and enabled over 90% of that waste to be recycled.

More than 2500 photovoltaic solar panels were also installed as part of a new 1.16-megawatt solar system on the roof of the hospital's northern car park.

Toward the great reset

Sean Rooney, CEO, LASA

The aged-care sector has begun to emerge from the challenges encountered over the summer from the COVID-19 Omicron wave.

The impact on the sector has been profound and tragic, with more than 700 deaths in residential aged care since 1 January 2022, more than double the number for all of 2021.

The wild spread of infection in the wider community led to a significant reduction of the aged-care workforce as staff became infected or were forced to isolate due to being a close contact. This resulted in prolonged bouts of isolation for aged-care residents and a disruption of services to home-care clients, all signs that providers and their staff were under severe pressure just to keep delivering essential services every day.

During the second half of December and for most of January, Omicron infections and close contacts among the aged-care workforce meant that when local surge workforce capacity was exhausted, many providers were forced to leave shifts unfilled on a regular basis. This meant those staff remaining shouldered the workload, doing double and sometimes triple shifts to care for and protect older Australians.

On top of the staff shortage, providers in both residential and home care were seriously hampered in their daily routines by the lack of adequate PPE and RAT supplies, which continued until nearly the end of January.

It is now a year since the release of the final report by the Royal Commission into Aged Care Quality and Safety, and the structural deficiencies in aged care identified by the Royal Commission have been vastly magnified by the pandemic, particularly over the summer.

Our own Commonwealth Chief Medical Officer noted in early February concerns in the Northern Hemisphere of the potential for further COVID variants and the potential for a new wave of infection combined with the flu. The message is that there could be more waves of infection ahead of us. This means we must be learning from the past and preparing for the future. And we must bring a sense of urgency to this task if we are to avoid the challenges experienced and the devastating outcomes realised during the Omicron wave.

Leading Age Services Australia (LASA) and other industry representative bodies through the Australian Aged Care Collaboration (AACC) and aged-care sector unions have been advocating for urgent action by government to prepare for more outbreaks singling out three key areas:

- Funding for an immediate wage rise for the aged-care workforce as recommended by the Royal Commission and a commitment to fund the outcome of the Fair Work Commission work value case.
- Increase subsidies paid to providers so they can pay for higher costs incurred for COVID infection prevention and protection.
- Build resilience by agreeing to set up the proposed National Aged Care Covid Coordination Centre (NAT-CCC) in partnership with states and territories to ensure aged-care services are effectively resourced, enabled and supported to deal with future waves.

The NAT-CCC would resource and coordinate COVID prevention and preparation, response and recovery for aged-care services across Australia. The centre would have 'nodes' or sites in each state and territory connecting with existing local structures.

In the meantime, providers will continue to face workforce challenges with vacant shifts and a lack of available agency staff to fill the gaps. We need to ensure that they are properly resourced to effectively care for and protect older Australians and we look to government to step up and provide that support.

The rollout in February of teams of Australian Defence Force personnel has been welcome as a way of addressing immediate critical staff and skills shortages, but it is not a long-term solution.

The new interim visitation guidelines have also eased the way for providers and families to support older people in residential care who have missed visits from loved ones.

The aged-care sector will now be seeking a 'reset' of the proposed aged-care reforms resulting from the Royal Commission in the light of the immediate priorities for the sector during the pandemic.

The 7th Annual Aged Care Procurement Conference

PASA

About the Conference

The Challenge facing Procurement in the Aged Care sector

Together with the lasting impact of the Covid pandemic, changes in aged care protocols are here to stay. The common denominator of both the Royal Commission and the pandemic will be the firm desire to raise standards of care for older Australians.

Inevitably, better care will cost more and the vast majority of aged care operators will not be able to bare such increases easily. And any increases in government funding over the short and medium term will never be enough to cater for our significantly aging population.

The challenge for procurement in the aged care sector is nothing less than to help redesign the operating cost model to ensure high standards of aged care remain affordable indefinitely.

This event traditionally brings together the largest gathering in the country of Aged Care Procurement Leaders and their teams. Over 200 attendees are expected to attend this 7th Annual PASA Aged Care Procurement Conference at Royal Randwick on 8th & 9th June 2022 – live and in person!

Full Details/Register at agedcareprocurement.com

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8th & 9th June 2022

Who should attend and why?

Hear directly from the Minister of Aged Care on the views of the federal government regarding the crucial role of procurement in the aged care sector post Royal Commission.

Learn from other procurement leaders in the aged care sector on how they are forging and prioritising their procurement strategies through a range of CASE STUDY presentations from aged care providers large and small.

Understand how vendors are innovating and working to meet the changing needs of the aged care sector post-Covid and post-Royal Commission particularly.

Network with your peers and industry experts both throughout the event, but also at pre-arranged networking opportunities during the programme including frequent refreshment breaks and the complimentary drinks reception on the evening of Day One at 5pm.

Suppliers may attend as either sponsors/ exhibitors or as delegates. If you are interested in sponsoring or exhibiting please contact PASA as soon as possible as the trade show is almost sold out.

Please contact Deanna McConville at deanna@pasa.net.au or Tel. 0490 803 313

Malnutrition: the silent killer in aged care

Robert Hunt – Chief Executive Officer, Dietitians Australia

It's been one year since the Royal Commission into Aged Care Quality and Safety handed down its report identifying 'food and nutrition' as an area for immediate attention in the ailing industry. With research showing that up to 50% of older Australians in residential aged care are malnourished, it was hoped that subsequent action by the Australian Government would finally arrest this silent killer. But it hasn't.

On 2 March, the Aged Care Mandatory Quality Indicator Program reported 12,512 people with significant unplanned weight loss in the quarter to September 2021. Unplanned weight loss is just one of many indicators that could be attributed to malnutrition, which is a known cause for increased risk of falls, pressure injuries, hospital admissions, symptoms of COVID-19 and adverse outcomes on mortality. This in turn increases costs in the aged-care sector and broader healthcare system to the tune of $10.7 million in Victoria alone.

To put that into plain text, we're spending money for people to be sick rather than saving money for people to be healthy. Where's the sense in that?

Despite the government's $10 supplement to the Basic Daily Fee, which was introduced in July 2021, dietitians from around Australia continue to report grossly inadequate meals being served to residents in aged care. Adding insult to injury, we're deeply concerned how recent pandemic-related events and inflation driving up food prices could be worsening the quality of food being served in facilities.

We firmly believe that the supplement is being used to prop up administrative costs, and not improve the quality of meals for people in aged care, and this needs to stop.

The inherent issue with the Australian Government's approach to their Quality Indicator program is they're counting people who are falling off the cliff, rather than catching them before reaching the edge.

Dietitians Australia has already indicated to the federal government that to elevate the health and wellbeing of people in aged care, malnutrition must be included in the Quality Indicator Program for both residential and in-home aged care. The framework for screening of malnutrition risk would include initial and ongoing training of all care staff and support workers using a validated malnutrition screening tool. This would enable anyone the capability to identify, and immediately respond to, all people who are at risk of malnutrition, or who are malnourished.

And, as a condition of receiving the Basic Daily Fee supplement, every residential aged-care home should undergo an annual on-site menu and mealtime quality assessment performed by an Accredited Practising Dietitian.

In our federal Budget 2022–23 submission, Dietitians Australia estimates that additional funds needed to implement these basic amendments to be inconsequential to the public purse, with immeasurable savings from reduced oral nutrition supplements, wound care and hospital admissions.

Most importantly, the ultimate saving is the quality of life for residents in aged care.

In Conversation

with Anne Woollett

In Conversation provides a glimpse into the life of an 'outlier' — an exceptional person going above and beyond to improve outcomes in their field. Anne Woollett is leading an Australian-first pilot aimed at providing equitable access to clinical trials for patients in regional areas.

It is well known that regional/remote patients have unfair access to clinical trial treatments compared to their metro counterparts. TrialHub, an initiative led by Director Anne Woollett, addresses this challenge — wherein a metro hospital supports regional/remote hospitals to establish their own clinical trial units.

A year into the initiative, clinical trials have opened for the first time at Latrobe Regional Hospital and Rosebud Hospital, with more centres coming onboard with the program. It's hoped Mildura Base Hospital will be offering clinical trials for the first time next year as well as Bass Coast Hospital. If successful, the pilot will be rolled out to other states from 2025.

Can you please tell us what TrialHub is and how the model works?

TrialHub is an Australian-first pilot model where a metro hospital with a large clinical trial portfolio, Alfred Health in Melbourne, partners with regional/rural hospitals to improve or establish their own independent and sustainable clinical trial units.

Alfred Health has a 40-year history of delivering clinical trials and currently has more than 300 open clinical trials across 19 disease disciplines.

Every hospital we partner with is at varying levels of clinical trial delivery maturity, so we provide support at the level they require. This can include identifying gaps and opportunities, providing workforce enhancement and mentoring programs for oncologists, pharmacists, coordinators, research managers, formalising operating structures and processes, support for identifying suitable clinical trials, and the implementation of the teletrial model, and grass-root promotional support to improve the understanding of clinical trials within the community.

TrialHub isn't about growing Alfred Health's footprint in clinical trials, it's about providing guidance and support to our partner hospitals and leveraging the expertise. Our goal is that these hospitals, one day, attract big clinical trials and ask us to join them as a secondary site.

When did the initiative start and where are you at?

I came onboard in May 2020 as the first recruit. Since then, I have developed a team structure and have since employed a Monitoring and Evaluation Manager, Communications Manager, Education Manager and Teletrials Coordinator.

We have partnered with four Victorian hospitals — Latrobe Regional Hospital, Bendigo Health, Rosebud Hospital and Northern Health — with more to come on board this year.

I've been incredibly proud of how far TrialHub has come, especially in the last 12 months. Some highlights include:

Our early career fellowships programs are underway; we've funded an Australian-first credentialing and training program for hospital-based pharmacists; we're providing

tailored site-specific mentoring, leveraging existing programs, to upskill novice and emerging trial units; the teletrial program has been developed and seven trials accepted for activation with three teletrials open and actively recruiting. We have also supported the opening of a melanoma imaging clinical trial.

We continue to identify potential trials to be delivered either by teletrial or onsite, and these are all focused on cancer — prostate, rare cancer and melanoma, but we will be expanding outside of cancer very soon. A teletrial is where clinicians at the metro hospital enrol, consent and treat patients on clinical trials in partnership with smaller regional and rural centres (satellite sites).

What were some of the key learnings from your initial days at the Hub?

To embed clinical trials into any hospital, it's vital you have the buy-in and endorsement of the CEO and Executive team. The key to TrialHub's success has been working closely with them as partners, recognising their local needs, and having a good understanding of their resources and capabilities. From there, we have been able to build on their foundations and tailored our support accordingly.

How does the initiative benefit patients, staff and community operating in regional/ remote areas?

The incidence of cancer in regional areas of Australia is higher than that of major cities and those in rural and remote areas are more likely diagnosed with low survival cancers.

Patients who are on clinical trials may have a better outcome so we want all Australians to have better access, closer to home.

Long distance travel and time off work can be a barrier for regional and remote patients who want to access a clinical trial. TrialHub aims to make more clinical trials available closer to people's homes in regional and remote areas. By taking part in a clinical trial, a patient can contribute to the advancement of scientific knowledge, access new treatment and, in some cases, it can save their life.

A big focus of the initiative is on workforce development, and training and mentoring for regional staff interested in building and formalising their expertise in clinical trials without relocating to a city hospital. Leveraging Alfred Health's clinical trials experience, TrialHub is providing a range of education and training opportunities for staff to upskill in a range of areas. By offering clinical trials as a career pathway, staff are able to stay regional and hospitals can retain their staff.

On a different note, what inspired to get into health care? Could you tell us a bit about your first role in the industry?

I grew up in a regional town and I could see the disparity in access between regional and metropolitan health care. I was inspired to be part of providing the best health care in regional settings, and I knew nursing would set me on the right path to do so.

My first role as a 22-year-old graduate nurse was to look after a cancer patient who had just been diagnosed and required chemotherapy. I had no idea how to support this patient, what to say or what information to give them. That's when I decided to do a stint in oncology to learn everything I could; it was here I started to learn about clinical trials and their benefits, so my drive to increase access to clinical trials was instilled right at the start of my career.

What are your career highlights?

A definite highlight was being the first oncology clinical trial unit manager at Peter MacCallum Cancer Centre in Melbourne when it opened in 1992. The first drug clinical trial I worked on for ovarian cancer become registered and used in clinical practice, and still is today. This showed me that the outcome of what we do informs evidence-based clinical care.

Being appointed to the role of Director of TrialHub is also a highlight because it's been a cumulation of all my previous experience and is a unique opportunity to really embed equitable access to clinical trials and improve outcomes for all patients, no matter where they live.

How would you describe your leadership style? And did you face challenges as a woman leader?

For me, collaboration and engagement are vital. It's important that I seek input and consensus and communicate the value of my colleagues' contribution. I always aim to lead by example, and I genuinely want to see those around me do well and succeed.

I've seen a lot of progression in not only women in research but in leadership and operational roles, and women are being recognised a lot more. But I still think there needs to be clearer career pathways for women in clinical trials.

Lastly, what are you like outside of work?

I enjoy spending time with my family and friends and being actively involved in their lives. I invest a lot of time and effort in them, and they make me laugh a lot and show me how to enjoy all the good things in life.

Out & About

Above and beyond

The HESTA Impact Awards recognise health and community services professionals going above and beyond to have a positive impact on society, the economy and the planet. Below are the 2022 award winners:

Team Innovation

The Haymarket Foundation Medical Practice team, Chippendale NSW

Areas of impact: Gender equality, Diversity and inclusion, Improved health outcomes/improved patient wellbeing, Sector-wide partnerships

The Haymarket Foundation Medical Practice team, established in July 2021, is recognised for their dedication to providing accessible, specialist healthcare and housing support services for people experiencing, or who are at risk of, homelessness.

CEO Peter Valpiani said, "It's been a leap of faith to self-fund and launch a service that we can see filling a gap in care."

The prize money will go towards the purchase of specialist medical equipment for the Foundation's larger homelessness medical practice, which is scheduled to open later in 2022, as well as establishing a fund to help pay out-of-pocket medical costs. The fund would help people experiencing homelessness who do not have access to Medicare, such as refugees on temporary visas.

Outstanding Organisation

Zoe Support Australia, Mildura VIC

Area of impact: Diversity and inclusion

CEO Merinda Robertson said she couldn't thank her "amazing team" of staff and volunteers enough.

Zoe Support relies on philanthropic funding and will use the prize money to continue its wraparound service for young mothers as well as practical assistance.

Individual Distinction

Melissa McConaghy — PD Warrior, Artarmon NSW

Area of impact: Improved health outcomes/improved patient wellbeing

Melissa McConaghy is recognised for creating and developing PD Warrior, an exercise-based approach to help people with Parkinson's disease move, think and feel better.

PD Warrior delivers online and face-to-face training sessions directly to people living with Parkinson's. The program also works to upskill physiotherapists and exercise physiologists to improve therapy outcomes.

As the founder and driving force behind the program, McConaghy has grown PD Warrior's following to more than 30,000 people worldwide. The program has also been taught to nearly 5000 health professionals across 22 countries in four different languages.

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** Cruickshank M & Ferguson J (eds) (2008) Reducing Harm to Patients from Health Care Associated Infection: The Role of Surveillance. Australian Commission for Safety and Quality in Health Care. p3.*

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