HOSPITAL AND HEALTHCARE

SUMMER 2021

AGED CARE ISSUE

TOWARDS A BETTER LIFE

FOR OLDER AUSTRALIANS

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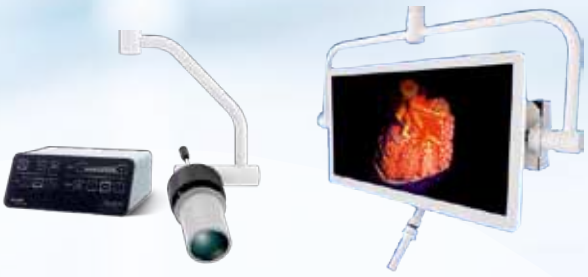

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Welcome to our aged-care issue

A piece of research I read this morning found that people who watch zombie movies (or other morsels from the post-apocalyptic genre) may confer a degree of psychological resistance that has left them better prepared for the realities of the COVID-19 pandemic. This led me to wonder if my time spent devouring episodes of The Walking Dead has led to unintended benefits.

Whether you are partial to apocalyptic pandemic films or not, the pandemic that we currently find ourselves in has rearranged priorities — the health and wellbeing of our families and communities has been pushed firmly to the forefront, if it wasn't already there before. With this has come a deeper respect for the systems and the people within those systems that support our health and wellbeing, and an acknowledgement that we will ourselves rely on these systems as we age.

This month will see the publication of the Aged Care Royal Commission's Final Report, and with it, the continuation of reforms across the sector to move towards a world-class aged-care system.

This issue is packed with features that focus on aged care in Australia. We explore the future of aged care and what might be in store following the Royal Commission's Final Report; see inside Tasmania's purpose-built dementia village; discuss the care needs of Indigenous Elders; and look at technologies that will help build a robust and sustainable aged-care system. And that's just to get you started. I hope you enjoy the edition.

Stay safe,

Jane

Jane Allman
Editor, H+H
hh@wfmedia.com.au

WANT TO CONTRIBUTE?
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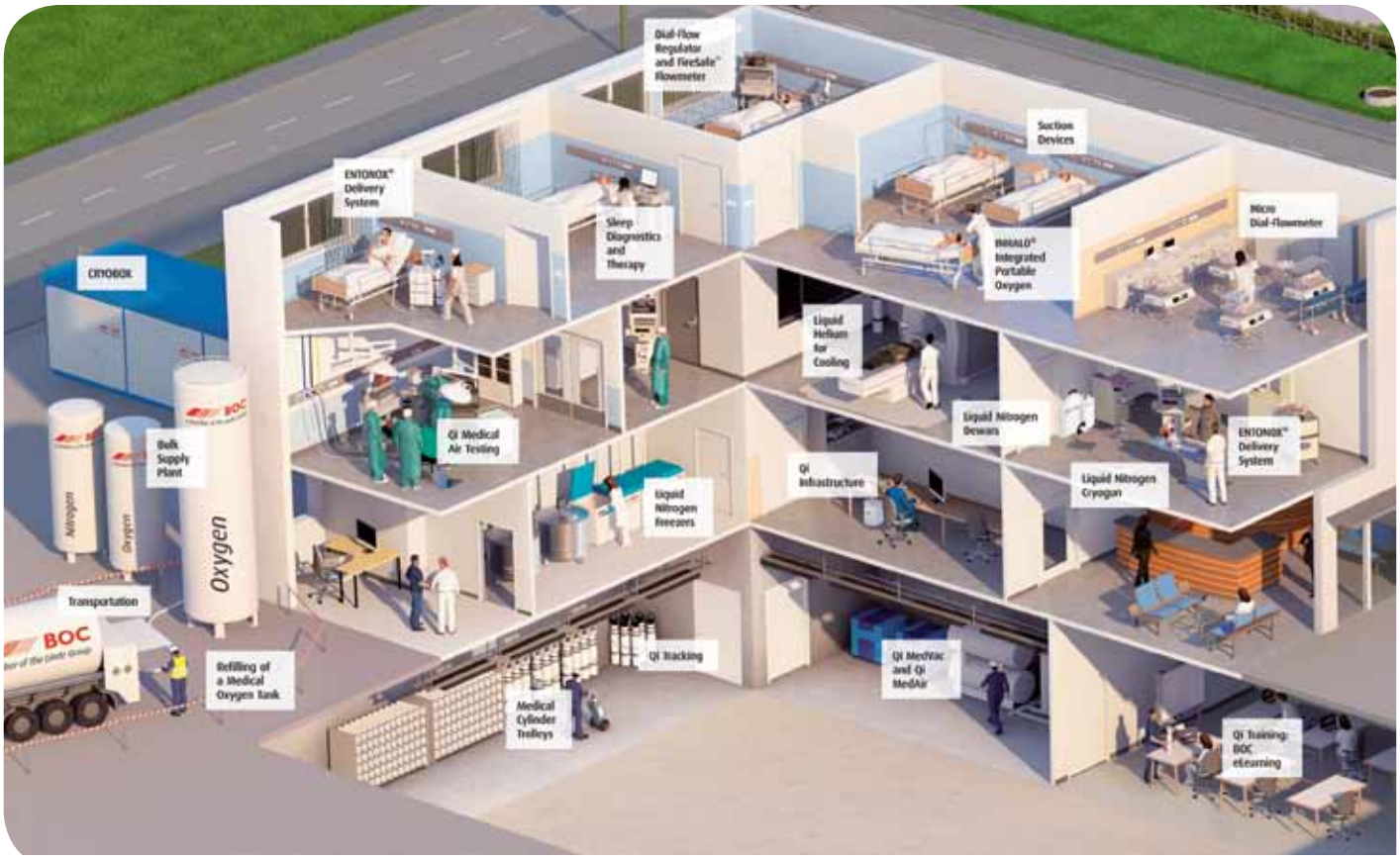

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The Rounds
Updates in health care

Chatbot detects speech changes typical of early Alzheimer's

A researcher from Queensland University of Technology (QUT) has developed a chatbot that can identify multiple stages of dementia, including mild cognitive impairment (MCI), possible Alzheimer's dementia (PoAD) and probable Alzheimer's dementia (AD).

QUT School of Computer Science PhD data science researcher Ahmed Alkenani examined linguistic patterns to develop the automatic machine learning models, which analyse language changes to detect early dementia. The research findings are published in IEEE Access.

"It is possible to identify language changes years prior to developing dementia, which highlights the importance of linguistic analysis for early dementia detection," Alkenani said.

"Our study shows that early stages of dementia can be efficiently diagnosed through linguistic patterns and deficits using machine learning models.

"Early, accurate diagnosis is important to enable clinicians to intervene in time to delay or prevent Alzheimer's dementia."

Alkenani said that as dementia advances, a person's language comprehension and spoken complexity declines.

"Dementia severity is associated with a limited vocabulary and increased word repetitions, giving patterns we can pick up as linguistic biomarkers as dementia progresses," Alkenani said.

"For this study we introduced several new word and grammar features alongside previously established ones to train machine learning classifiers to identify linguistic biomarkers of MCI and AD.

"We found people with dementia leaned towards using fewer nouns but more verbs, pronouns and adjectives as dementia progressed compared to healthy adults. For instance, we found noun-to-verb ratio and verb-to-noun ratio to be significant in differentiating both AD and MCI from healthy people."

Alkenani said the study was believed to be the first to classify AD, MCI and PoAD accurately and automatically through machine learning models.

"Our ultimate aim is to develop a conversational agent or chatbot that could be used remotely to facilitate the initial diagnosis of early-stage dementia as an attempt to replace traditional screening tests."

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Aged-care residents who are served more, eat more

Researchers at the University of South Australia (UniSA) have discovered a simple way for aged-care residents to improve their nutrition intake: increase their meal sizes.

The research team assessed environmental cues within an aged-care home — music, fragrance and other health information — discovering that if residents were offered larger meals, they would eat more, thereby increasing energy and nutrition levels. The findings are published in the Australasian Marketing Journal.

For each kilojoule increase in served energy, a 0.73 kilojoule increase in consumed energy was observed.

UniSA researcher Hei Tong Lau said that the portion-size effect was a manipulation to test the true effects of extrinsic food cues.

"Our research is focused on improving the nutrition and health status of older Australians living in a residential aged-care facility," Lau said.

"In Australia, up to 70% of elderly people living in aged-care facilities are suffering from malnutrition, the primary reason for which is inadequate food intake.

"To improve this, we must find ways to encourage older people to eat more. And while there has been a justified focus on the food itself — including look, taste and texture — we have been concentrating on other factors that can improve the food experience, within a real-world aged-care facility.

"While exploring environmental factors that could improve the dining atmosphere, we found that portion size was highly correlated with the amount of food that residents consumed. And, that both music and fragrance could positively influence food consumption, but secondary to portion size, as we did see variances among each individual."

Lau said the findings provide valuable insights for aged-care caterers and providers.

"With an ageing population and high levels of malnutrition among aged-care residents, there is a clear need to better understand factors that can influence residents' food intake," Lau said.

The Rounds
Updates in health care

Drink slows disease progression in early-stage Alzheimer's

A nutritional drink has been found to slow the decline of cognition, function, brain atrophy and disease progression in patients with mild cognitive impairment (MCI), according to results from a clinical trial published in *Alzheimer's & Dementia*.

Souvenaid contains a patented combination of nutrients that provide nutritional precursors and cofactors that work together to support neuronal membrane formation.

In the LipiDiDiet clinical trial, patients with MCI received either Souvenaid or an isocaloric, same-tasting, placebo-control drink. Changes in cognition were assessed using a number of neuropsychological tests.

Significant reductions in decline were observed between the intervention and the control group for various cognitive, functional and physical measures.

Commenting on behalf of Nutricia — the developer of Souvenaid — Dr Patrick Kamphuis said, "These results show there is now an evidence-based nutritional option available to doctors to recommend for people with mild cognitive impairment, and furthermore, the effects are both considerable in scale and long-lasting."

Mobile lifting robot transfers and rehabilitates patients

PTR Robots has announced a mobile, intelligent robot solution that can flexibly move around in the healthcare and nursing sectors, helping transfer and rehabilitate patients with impaired functions.

One in four bedridden patients in a typical hospital setting requires assistance to be transferred and rehabilitated. This need is even more pronounced in aged-care facilities. According to WHO, lifting injuries account for one-third of all occupational injuries among nurses.

"Many nursing homes, hospitals and institutions are keenly interested in our patient transfer and rehabilitation robot," PTR Robots CEO Lone Jager Lindquist said.

"If an elderly person breaks his or her hip, the robot can help him/her stand up right after the operation. The robot also accompanies the patient when taking the first steps after surgery."

Include pharmacists in aged-care settings, recommendations say

The Society of Hospital Pharmacists of Australia (SHPA) has welcomed patient safety measures emerging from the Royal Commission into Aged Care Quality and Safety. Counsel Assisting's recommendations reflect the importance of facilitating hospital pharmacist expertise at crucial points in the care journey for older Australians.

Recommendations include: the inclusion of pharmacists in residential aged-care teams; the embedding of medicines reviews into home care packages; and improving the transition between residential aged care and hospital care.

SHPA Chief Executive Kristin Michaels said the supported presence of a pharmacist in the residential aged-care setting is integral to safe, quality care.

"The crucial role of pharmacy in aged care is undeniable, with Australian research indicating [that] 91% of aged-care residents take at least five regular medicines, and 65% take more than 10, every day."

She said the recommendation to engage a pharmacist as part of minimum allied health care is a strong step toward reducing medicines misuse and medication-related hospitalisations and injuries.

The SHPA welcomed the recommendation to allow and fund pharmacists to conduct reviews on entry to residential care, and focus on transitions of care — a high-risk setting for older Australians.

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Towards a better life for older Australians

Awaiting the Royal Commission's final report

Jane Allman

The Royal Commission into Aged Care Quality and Safety will submit its Final Report on 26 February 2021, marking the culmination of two years of inquiry into the state of Australia's aged-care sector.

The completion of this gargantuan undertaking will provide recommendations for comprehensive reform and significant transformations within Australia's aged-care sector. We are potentially (and hopefully) on the cusp of a revolution in our aged-care system. So what can we expect?

Addressing neglect

The Commission's Interim Report, titled 'Neglect', reflects serious shortfalls in the sector, detailing underfunding, understaffing, heartbreaking stories of human rights abuses and widespread failure to meet required standards. The report reveals that to truly create a world-class, sustainable aged-care industry, the system will have to be rebuilt from the ground up.

The Royal Commission states that it is committed to systemic reform, which will involve a fundamental overhaul of the design, objectives, regulation and funding of aged care in Australia.

Leading Age Services Australia (LASA) CEO Sean Rooney said, "If we take the changes recommended by Counsel Assisting as indicative of the Final Report, overall we will see a system that goes through

great transformation, with much more. More places in care and more hours of care, delivered by more staff, with more education and higher pay. More access to the health system, more institutions within government to determine aged-care policy and administer the system. And more regulation including more requirements to collect and report data, along with more formal governance arrangements and more powers for the regulator to investigate and enforce the rules.

"In the end, what we hope to achieve is a system where access is based on need and where people can choose how they are cared for. A system that is adequately funded so age-service providers are enabled to simultaneously deliver high-quality support that meets community expectations, provide pay and conditions for staff that reflects the value and challenges of their work, and enabling recruitment, training and retention, while achieving financial sustainability."

Counsel Assisting's key recommendations

In its final submission to the Commission, Counsel Assisting suggested that 124 recommendations be made. These included the creation of a new Aged Care Act; demand-driven access to care; an independent process for setting aged-care quality standards; enforceable general duty of care on approved providers; compulsory registration of personal care workers; and staffing ratios in residential aged care and additional nurses for patients needing palliative or dementia care.

To help residents and their families choose an aged-care home, a star rating system based on quality and safety was suggested to allow easier comparison of facilities. Access to any reports of neglect or abuse via this rating system would also increase transparency and hold providers accountable.

An independent pricing authority to determine aged-care prices was recommended, as well as the establishment of an independent Australian Aged Care Commission that will be responsible for administering and regulating the aged-care system.

Aged & Community Services Australia (ACSA) CEO Patricia Sparrow is hopeful the Royal Commission's Final Report will bring about real, lasting reform to the aged-care system.

"The Royal Commission provides a significant opportunity for a reset of aged care so it meets our growing expectations for how older Australians live and are supported in the 21st century," she said.

"This is a once-in-a-generation opportunity to find solutions to support better health and quality-of-life outcomes for older Australians, now and in the future.

"ACSA welcomes the recommendations for new rights-based legislation and creating a demand-driven aged-care system.

"The recommendations that support the workforce are important, because we need more workers in aged care. We need measures that help retain good workers across the sector, better train them and help attract new people who can make their contribution.

"Importantly, the financial pressures aged-care providers are operating under has been recognised by Counsel Assisting. The public financing of such a system is still under consideration but is absolutely critical to deliver on the promise of these recommendations."

The Grattan Report: a blueprint for our aged-care system

In November 2020, the Grattan Institute released its report 'Reforming aged care: a practical plan for a rights-based system', finding that an additional $7 billion a year from the Australian Government could provide older Australians with the care and support they need.

The report suggests a new system to be phased in over three years, starting in 2021. According to the report, Australia should be divided into 30 regions, each with a 'system manager' responsible for individual support plans. Local 'assessment officers' would help to draw up individual support plans, and a local 'support manager' would act as their advocate in obtaining necessary services.

Residents of aged-care homes would contribute to their accommodation costs by paying rent, but a means test would be applied to ensure people who couldn't

afford the rent would pay less or not at all. Many Australians would receive care and support in their own homes.

Rogue proprietors of residential aged-care facilities would be driven out of the system. Aged-care homes would have to meet minimum resident-to-carer ratios, and provide nursing supervision 24 hours a day. Carers would be registered, better trained and better paid. The report also suggests that the federal government create a one-off $1 billion national 'rescue fund' to force the worst providers of residential care to lift their game or get out of the system.

What do our seniors want from aged care?

A study conducted by the National Ageing Research Institute approached Australians living in residential aged care, to gauge their feelings towards the care they receive. Using a series of questionnaires — covering quality of care, general life satisfaction, quality of life, and concerns and complaints — the researchers found that a significant proportion of residents felt that some aspect of their care and services was failing them.

The study found that most residents were satisfied with aspects of their care, but a large share were only partially satisfied — a significant minority reported low satisfaction.

Key concerns of residents

The main concerns of residents surveyed related to staffing, with 46.7% of respondents having a concern in this domain. The greatest concern in this area was understaffing, with 34.3% of respondents feeling that their facility was understaffed or did not have enough staff on duty.

In the domain of services and fees, 39.7% of residents had a concern, particularly relating to food and catering (19.4%) and feelings of boredom or loneliness (16%).

Just over 26% had medical and healthcare concerns, with falls or fall prevention and medication management being the primary concerns; 23.6% were concerned about dignity and respect, with 9.1% feeling forced to be dependent on staff and 7.6% feeling that their specific care needs were not listened to.

In regards to their room within the facility, 23.5% had a concern, mainly related to the security of the room and possessions, and cleanliness of the room and bathroom.

Other concerns related to choices, such as the availability of lifestyle activities, timing of meals, and how and when interaction with other residents occurred; personal care and whether help is received for showering, personal grooming and toiletting; and facility-related factors such as noise levels, cleanliness, and maintenance of equipment, furniture and gardens.

The study authors said, "Although this study found that a proportion of residents are satisfied with the quality of their care, it is clear that a substantial proportion are not.

"This is a once-in-a-generation opportunity to find solutions to support better health and quality-of-life outcomes for older Australians, now and in the future."

"These results highlight the need for action to improve quality of care delivered to those for whom the system is clearly failing to provide them with quality care and services in some or all areas."

The authors point to the need for person-centred care in the aged-care sector, with the study findings hoping to benchmark efforts to improve the system for all senior Australians.

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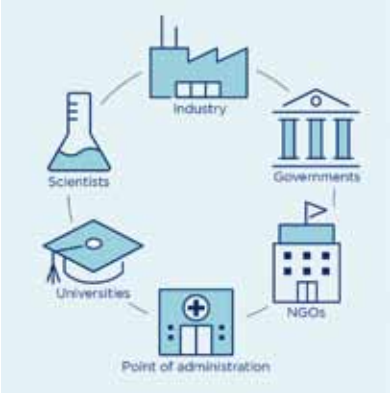
Securing trust in the global COVID-19 supply chain

Billions of vaccines are needed urgently across the world. How can demand be met quickly, efficiently and securely?

It is fundamental to the success of COVID-19 vaccination efforts that citizens trust the process and feel protected. According to a recent publication from Deloitte, concerted effort is necessary in four key areas to achieve efficiency, security, speed and public trust in vaccine delivery.

1. Advancing industry collaboration

Vaccination on a global scale requires common effort between industry, scientists and international organisations. Pharmaceutical companies are not in competition with one another on the development of a vaccine; instead, they are working in collaboration with the world's top scientists to save lives. These partnerships, both in vaccine development and in clinical trials between industry and universities, create trust.



2. Embracing global standards for supply chain security

COVID-19 vaccines, therapeutics, and associated medical devices and consumables present an urgent need for traceability built upon globally identified products. Using existing global supply chain standards for harmonised implementation of regulatory requirements will further patient safety goals, adding an element of trust at all levels of the supply chain. GS1 data standards provide additional visibility and traceability in these critical supply chains through unique identification, data capture and data sharing for shipments, locations, parties, individuals and critical events in an interoperable way.

Every product, at every level of packaging, is uniquely identified and this information is captured in a standardised barcode that can be read by all supply chain partners and is essential for health care providers to administer vaccines with confidence. WHO has recommended, a DataMatrix should be applied on secondary packaging (carton boxes), and — if possible — also on primary packaging (vial or prefilled syringe).

3. Anticipating challenges for safe and efficacious delivery of vaccines

Globally unique identification and barcoding of vaccines is critical for clinical trials, distribution, and pharmacovigilance. It is important to identify and label the vaccines, capturing precisely which patient received which vaccine, and when.

Challenges to anticipate include capturing adverse events, falsified vaccines, cold chain requirements for administration sites, trust of vulnerable populations most impacted by the virus, and mixing and matching of vaccines depending on availability.

4. Using clear and transparent communication to build vaccine confidence

Vaccine uptake will need to be facilitated by clear, evidence-based, and tested communications. It is critical that governments and the private sector come together to build confidence and ensure that patients have trust in the newly developed vaccines — especially since vaccination may be voluntary in many parts of the world.

"As the world gears up for the largest deployment of vaccines in history, it is more important than ever that supply chains are up to the task of maintaining trust and ensuring effective, timely delivery. We need to be able to trace every vaccine dose — from shipping to delivery and finally administration — and we need better adoption of common standards." — Dr. Seth Berkley, Chief Executive Officer, Gavi.

To access the Deloitte white paper, go to https://www2.deloitte.com/global/en/pages/life-sciences-and-healthcare/articles/securing-trust-in-the-global-covid-19-supply-chain.html

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The future of aged care

Amy Sarcevic

If there is one thing that aged-care policymakers can agree on, it is that something has to change — fast. But precisely what and how has remained the subject of a hot-button debate for quite some time — a debate which has become inflamed in recent months amid COVID-19 and the ongoing Royal Commission.

At the crux of it, a collective desire to improve quality of life within residential aged-care facilities (RACF) may have struck a harmonious chord. But drill down into the specifics of how this can and should be achieved and the tune quickly becomes unmelodic.

Improve RACF health care through better nurse-to-resident ratios and funds will dry up — at the expense of other aged-care priorities — some have argued. Enact a market-based system — whereby people with means pay more — and residents will expect better care for their investment, others have warned.

Although a veil of fog may be obscuring our vision of future aged-care delivery, the existing facts are clear. Around 70% of RACF residents live with trauma, yet few have routine access to a psychologist within their facilities. Up to 40% receive no visitors, yet staff are often too stretched to provide any regular or meaningful psychosocial engagement. And approximately 52% have dementia, yet zero mandates are in place for staff to have any specialised dementia training.

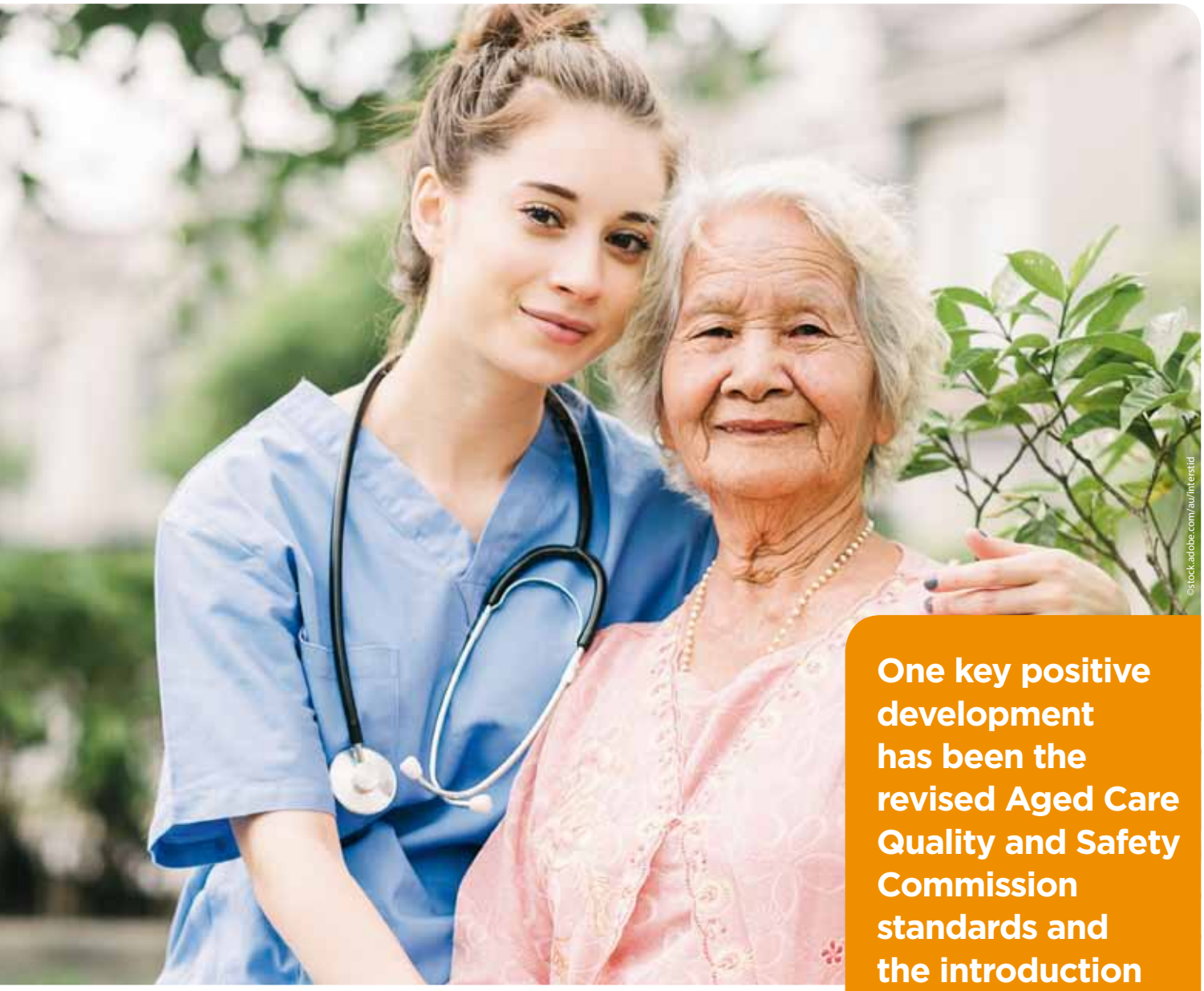
Those are the 'luckier' ones. Around 100,000 senior Australians are still waiting for a place in an RACF or the right care package — a considerable overspill from the 20,000 new places recently announced in the federal Budget.

While it may be easy to recognise what quality of life isn't in the context of aged care, merely doing the opposite of these things doesn't equal a solution. So, where do we start?

Funding, plus compassion, plus rights

Stephen Duckett, of the Grattan Institute, says the aged-care conversation must begin with compassion, focus on rights, and end with the requisite government pay cheque.

"At the moment, the emphasis is on saving money and rationalising the number of aged-care places. The way I see it, we all



One key positive development has been the revised Aged Care Quality and Safety Commission standards and the introduction of the 'dignity of risk' principle.

have a right to health care in this country and would never be denied access to a GP if we needed one. Yet we are not seeing the same rights-based mentality within the aged-care system," Duckett said.

"In my view, it is unacceptable that an elderly person in Australia today still cannot guarantee a care package to support them with their daily activities, like taking a shower, when they need it. Additionally, that many are denied liberties or have unmet psychosocial needs when entering facilities," he added.

As baby boomers enter aged care, most want to minimise the change in their lives, retaining their sense of choice and independence. Instead, many face the opposite experience: limited freedoms and an environment that often does not resemble a home.

In recent years, the Australian Government has sought to address this, investing billions in the aged-care sector and working hard to establish standards and assessment frameworks.

One key positive development has been the revised Aged Care Quality and Safety Commission (ACQSC) standards and the introduction of the 'dignity of risk' principle, which permits residents to undertake activities of enjoyment — despite any (reasonable) risk they may involve.

However, staff shortfalls can make enacting a resident's dignity of risk a challenge. A morning walk to the shops, for example, often requires assistance and time — a commodity most aged-care staff don't have in surplus. Hence, a compassion and rights-based formula that does not include the requisite funding is inadequate.

Despite former claims by some politicians that the Budget could not permit sweeping change within the aged-care system, Duckett believes funding can always be found if it is looked for.

"Throughout the COVID-19 pandemic, the government has coughed up billions for the construction sector, where the average wage is considerably higher than that for aged care. The debate is no longer about 'can we find the money' — it's about prioritisation and what conditions we are willing to tolerate for our elders. Society has to say, 'will we tolerate the poor quality and the death rate we have seen over the last six months?'" he said.

Duckett says that while some facilities pose an urgent risk, the systemic change needed to enhance aged-care delivery does not need to happen by tomorrow.

"Even if it were to take, say, three years, then so be it. Providing we are on the right track and acting with the appropriate sentiment, then, in my view, that's a positive development.

"We have a large task ahead of us to reform our aged-care system. But one thing is for sure: we cannot continue on as we are. We owe it to our elders to ensure their final years are quality ones," he concluded.

Tech partnerships: working together to transform healthcare organisations

The real and lasting value of a tech partner and how a purpose-built digital solution can change the way healthcare providers do business.

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Healthcare is a complex, highly regulated industry and organisations need to adapt in order to keep up. It's vital for care delivery organisations to provide high-quality, value-based services but often their ability to focus on those in their care is hampered by ever-changing industry regulations, workforce management challenges and out-of-date software systems.

What if healthcare providers could empower their workforce to deliver the highest standard of care through automation and integrated digital technologies? Technology already exists for this purpose, but without the relevant expertise and advice it's hard to know where to start. The right tech partner can help create a more efficient, digitally focused business so organisations, their staff and the people they support can thrive, now and in the future.

Tech provider vs tech partner

There are plenty of technology companies selling out-of-the-box systems or multiple stand-alone apps, but a tech partner is more than just a software provider. One company leading digital transformation in the Australian healthcare industry is local tech trailblazer Lumary. With their advanced digital platform, purpose-built for the aged care and disability industries, this healthtech company recognised the importance of building a single, scalable connection point between organisations and multiple digital solutions. Working closely with healthcare providers to identify gaps in their tech, Lumary develops collaborative relationships with their clients to build a long-term, fully connected solution that not only complies with the latest industry regulations, it manages the entire operation end-to-end.

The best kind of tech partner is one that truly understands the fragmented healthcare industry and its many complexities. That's why it's invaluable when software companies serving this sector have experienced industry experts in-house. As well as helping define the product build, these experts readily understand the challenges experienced by support workers and can work alongside the tech team to create tailored solutions that meet the requirements of specific funding bodies, such as those of the NDIS and HCP.

Another factor to consider when aligning with a tech partner is the strength of their delivery and customer success support. Instead of wasting money and resources trying to implement and integrate multiple digital solutions, organisations receive support configuring and updating their software and the peace of mind of a hands-on customer success team if they encounter issues or require additional functionality.

When it comes to managing business activities and improving the patient–provider connection, Possability, a disability service provider operating in Victoria, Tasmania and Queensland, knows firsthand the value a tech partnership can bring.

"With the right partner, we've been able to adapt pretty quickly to the constant changes that the sector has experienced, particularly over the last couple of years, says Jon Anning, Possability's NDIS Strategy Lead.

"The burden of managing those changes has been made easier with Lumary and our efficiency has improved. Since partnering with Lumary, we've increased the quality of our information, workflows and cashflow by improving our claiming processes."

Connected tech: support workers and care recipients

Integrated tech platforms such as Lumary not only maintain industry regulations like those of the NDIS and HCP, they also facilitate information sharing, reduce data irregularities and update records in real time. This transparency means improved collaboration across the care continuum as support workers are able to make more informed decisions and care recipients are afforded greater choice and control over their health care.

"It's essential that support workers providing face-to-face services are empowered with the right tech in order to provide better services to more people," says former disability support worker and current Lumary SME, Stacey Sincock. "Workers need to capture and record information in real time and this then supports their employers to effectively claim, report and meet clients' health needs. If you're not doing it properly you could be leaving money on the table or creating huge admin burdens."

Healthcare organisations are in this industry because they care, but they also need to remain profitable and viable to future-proof their operation. Organisations need to embrace technology sooner rather than later. The right tech partner will support the digital transition every step of the way, enabling healthcare providers to improve their care delivery services while also safeguarding the success and growth of their business.

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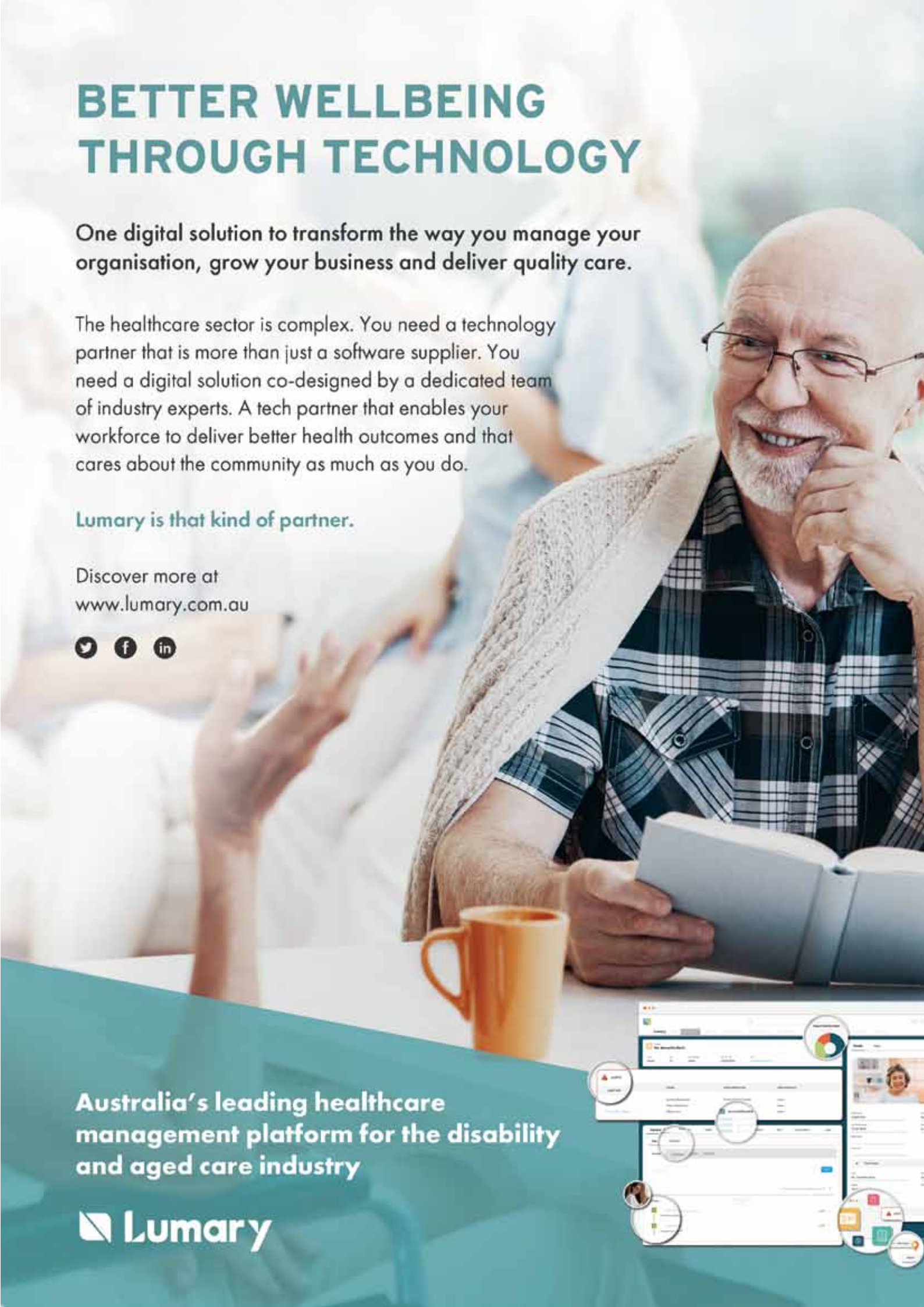


Australia's leading healthcare management platform for the disability and aged care industry

Lumary

Images: ©Glenview Community Services

Korongee Village

A new era in dementia care

The village has its own general store.

When Korongee Village officially opened its doors in July this year, it marked the beginning of a new era in dementia care in Australia.

The world-class facility is based on a small house model design and utilises a tailored matching process for house selection of new residents. This tailoring, which has been developed in conjunction with the University of Tasmania, will address the challenges of institutional care and lead to increased social engagement opportunities and enhanced wellbeing for residents.

A questionnaire and interview process — with the resident and their loved ones — helps staff to determine which of the six identified typologies represents the person's way of life before they came to residential care. They will then be placed in a house with people who share the same values.

Glenview CEO Lucy O'Flaherty said Korongee is a game changer in addressing the big social challenges of dementia.

"This is an opportunity with a brand new site to create something special," she said.

"The entire village has been built with dementia design principles throughout, so a sense of everyday familiarity is much easier to maintain."

The village is situated in the northern suburbs of Hobart and features 12 houses in four cul-de-sacs along with the heart of the village, consisting of a community centre, gardens, a general store, cafe and a wellness centre.

The unique design of Korongee, and the way its residents are cared for, is centred on evidence that supports small house living. An important element of this model is the inclusion of familiar sights and natural spaces, which can have a huge impact on overall happiness, health and wellbeing.

Because of this, the landscape and built environment of Korongee reflects dementia design principles, providing

Each of the village's houses contains eight private bedrooms for residents, plus its own living and dining area, as well as a kitchen for preparing and serving meals.

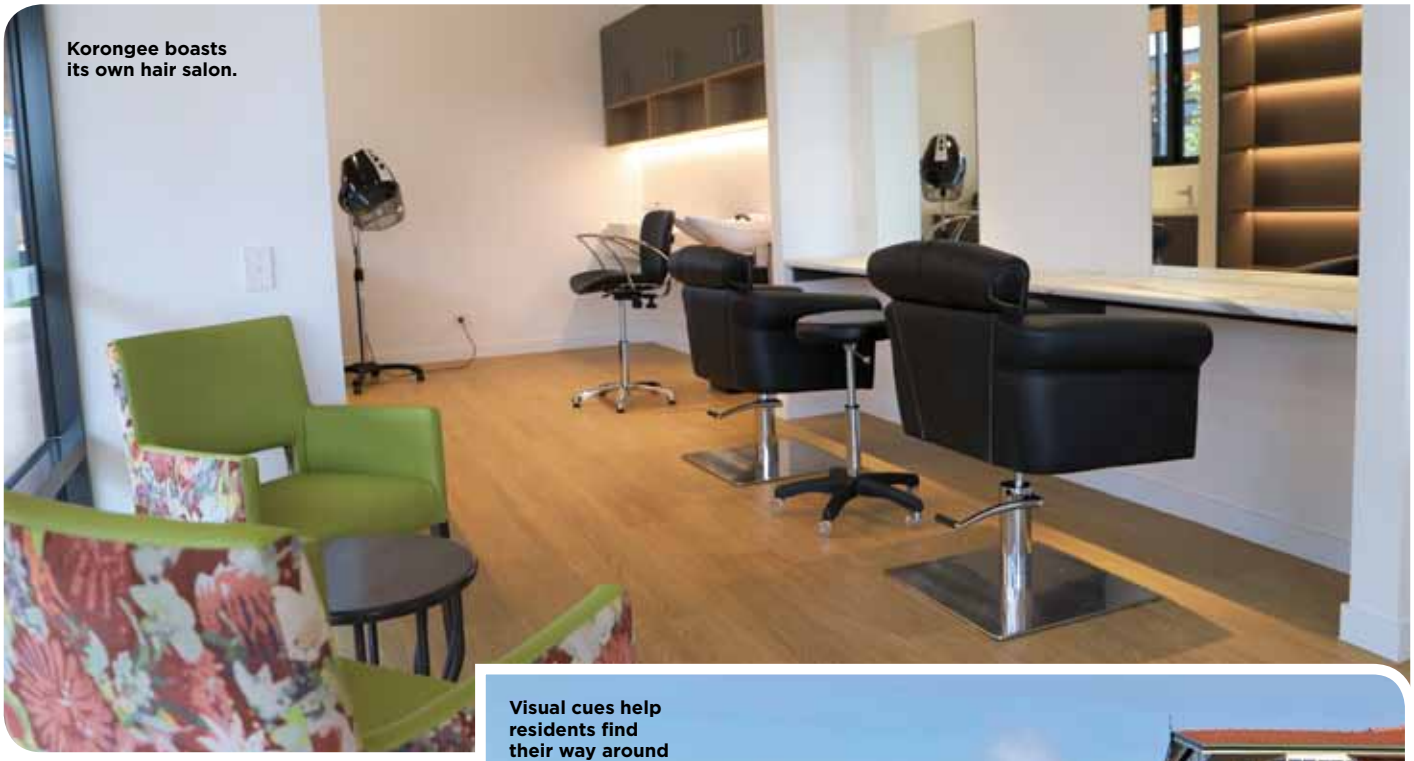
The landscape and built environment of Korongee reflects dementia design principles, providing residents with visual cues to help them easily find their way around the village grounds.

residents with visual cues to help them easily find their way around the village grounds. This includes differently coloured houses with distinctive painted doors and planter boxes.

The same staff members are also assigned to each household so that residents see familiar faces every day, and the houses are equipped with lighting systems that imitate the pattern of the sun.

Each of the village's houses contains eight private bedrooms for residents, plus its own living and dining area, as well as a kitchen for preparing and serving meals. Other details, like glass-panelled 'memory boxes' at the entrance of each bedroom for displaying important personal mementos, are designed to help each resident feel at home.

"The design of Korongee has been created from its inception with careful consideration of research, technology and dementia design in both internal and external environments, as well as calling upon known and emerging good practice themes," O'Flaherty explained.



Korongee boasts its own hair salon.

Images: ©Glenview Community Services

Visual cues help residents find their way around the village.

The world-class facility is based on a small house model design and utilises a tailored matching process for house selection of new residents.

Industry super fund HESTA has invested $19 million into the Korongee project through a Social Impact Investment Trust. HESTA CEO Debby Blakey said the opening of Korongee represents a significant milestone for aged care in Australia.

"As the industry super fund for the health and community services sector, we're incredibly proud to partner with Glenview on this project and support innovation in dementia care. Korongee is a huge step forward for dementia care in this country and puts Australia and Tasmania at the forefront of a global push to improve the quality of life of those living with dementia," Blakey said.

"We also hope our investment in this very important project encourages other large investors to contribute to Australia's impact investment market, which will help address significant social challenges like dementia and also create jobs and opportunities for our members who work in health and community services."

Director of the Wicking Dementia Research and Education Centre James Vickers said that with dementia emerging as the most important health issue of the century, the rapidly rising prevalence of this condition would have tremendous impacts across our society.

"It is vitally important to reconfigure our approach to care in order to meet the needs, as well as support the dignity and autonomy, of people living with dementia now and into the future," he said.

O'Flaherty said the long-term plan is to generate enough evidence around the village's unique model of care that broader lessons can be shared with the wider Australian aged-care sector.

"If solid, reliably drawn data and analysis suggests changing someone's environment substantially improves their quality of life, I believe there will be a greater appetite to invest in village-based models of care."

Quick facts: dementia*

- Approximately 459,000 Australians are living with dementia, with almost 1.6 million Australians involved in their care.
- Dementia describes a collection of symptoms that are caused by disorders affecting the brain. It is not one specific disease.
- Dementia affects thinking, behaviour and the ability to perform everyday tasks. Brain function is affected enough to interfere with the person's normal social or working life.
- Dementia can happen to anybody, but it is more common after the age of 65 years. People in their 40s and 50s can also have dementia.

*Source: Dementia Australia

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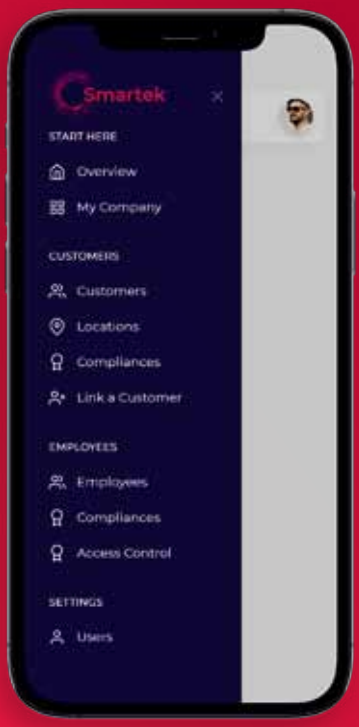

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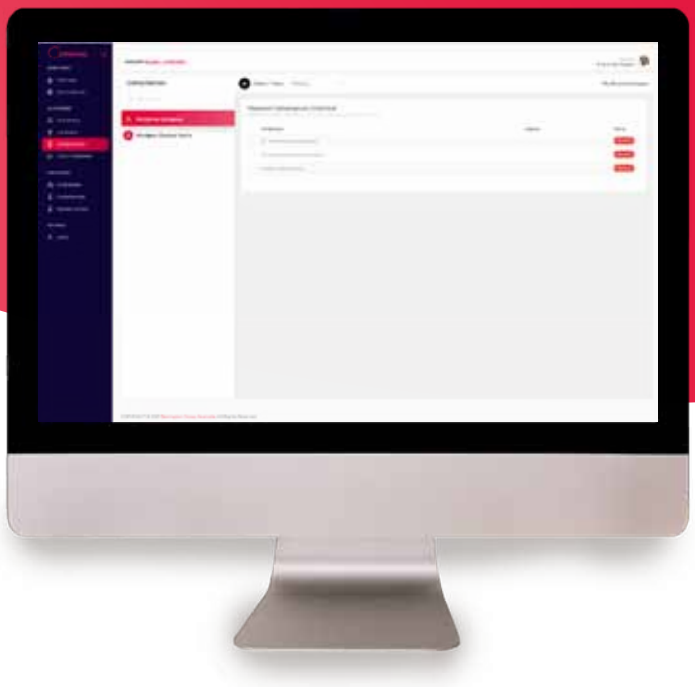

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Designing for community, connection and sense of place

James Kelly*

Innovative design embraces residents' diversity, defies ageism and embeds community and sense of place.

Our industry has a big job ahead to shift negative perceptions about seniors' communities and aged care arising from both the pandemic and the Royal Commission. Clearly change is required on many fronts, but progressive design is part of the solution. It's a powerful tool for change because it helps create vibrant, integrated communities that embrace residents' diversity, defy ageist stereotypes, embed community connections and create a genuine sense of place.

Design as storytelling

Storytelling is fundamental to human experience, understanding and belonging. Stories are the lifeblood of connection. They allow us to empathise, learn and celebrate. They form the basis of memory, and are especially important as we age. The places and spaces we design can help foster engagement, experiences and, with that, wonderful stories.

As architects we approach design as a form of storytelling. We aim to capture the essence of people, place and character in everything we do. When we succeed in creating a variety of spaces that draw people in, make them want to linger and give them agency to use the space in different ways, residents spontaneously start to express their own creativity and tell their own stories through the way they use the spaces provided.

Giving residents agency to thrive

Estia Health is a seniors community we designed in Maroochydore, on Queensland's

Image credits: Scott Burrows

Terry watering his edibles at Estia Health Maroochydore.

Sunshine Coast. Central to the design is a designated sensory and resident garden space. This wonderful area is literally shaped by residents' choices about how they want to use the space. One resident, Terry, is an incredible green thumb. He's created a spectacular edible garden with herbs, fruit and veggies that are so abundant he now supplies produce to the catering team for use in residents' meals. The outcome of Terry's fantastic work is shared meals eaten in a variety of settings throughout the facility. This allows everyone to connect with each other and the outdoor environment, and to enjoy the fruits of Terry's labour.

A simple design element like this offers residents ongoing agency, fosters their skills and interests, and creates space for new experiences and shared stories. Progressive design aims to encapsulate the identity of clients, their residents and their neighbourhood context, and create diverse spaces that genuinely connect people — with each other, their passions, their stories and their broader community. The best way to achieve this is through meaningful engagement with a broad mix of stakeholders.

Engaging with stakeholders to find the stories that matter most

One of our company values is Listen First. We aim to truly understand our clients' and users' needs before responding in design terms. It's an approach that permeates every conversation during the design process and is particularly important early on in the development of a brief and concept.

"Progressive design aims to encapsulate the identity of clients, their residents and their neighbourhood context, and create diverse spaces that genuinely connect people."

The best stakeholder engagement brings staff, residents and communities on the design journey and ensures the design defies stereotypes and reflects diverse people's rituals, relationships and lifestyles. It helps all involved to identify what's unique and worth celebrating about a project's people, site and location.

Terry weeding from his chair at Estia Health Maroochydore.

Image credits: Scott Burrows

Stakeholder engagement is not a linear process, nor a finite one. It evolves constantly, and when it's done well it ensures designers hear and understand the needs of all. It's this deep understanding that allows us to connect and create meaningful stories.

One of the starting points to stakeholder engagement is conversations with staff and the executive or development team. This is often where a project is conceived and its design parameters are developed. We always engage staff in physical, hands-on interpretation of briefing requirements — for example, setting up a prototype bedroom to test new lifting equipment we're considering for the design or to see how potential joinery solutions might affect the circulation and functionality of the space. We also take staff on site tours through similar facilities to show them design options in action. I highly recommend this shared form of learning for any design process.

Resident engagement is crucial too. We particularly love undertaking design idea sessions with residents because many of the best ideas come from the people who'll be living in and enjoying these buildings, spaces and places. We ask open-ended questions such as: what do you like? What don't you like? What would you love to have?

The answers help us maintain some of the simple pleasures most important to residents, eliminate any design ideas that aren't working and be aspirational in our approach.

Community consultation is central to any project's success. We always look for ways to actively engage with local community groups, volunteer organisations and neighbours. The stakeholder engagement can take many forms: small group sessions, design workshops or open days where residents are invited in to learn about the design plans and ask questions. This is a great way to hear from a diverse group of people about their connection to the site.

By listening first we come to a shared understanding about what is important to the people involved, what makes them who they are and what their day-to-day pleasures are. This embeds a depth of thinking into a design approach that's holistic, dynamic and site responsive, and creates integrated communities within communities.

This column is an edited version of a practical, how-to session aimed at non-designers presented at LASA's Ten Days of Congress.

*James Kelly is a Partner at ClarkeHopkinsClarke Architects, where he leads the Seniors Living & Care Sector. His team champions considered, holistic design and intergenerational communities offering diverse choices, higher quality and stronger community connections for seniors at all stages of life.

Mobile CSSD provides flexible on-site capacity

A mobile or modular on-site sterilisation department can ensure continuity during periods of refurbishment or exceptional demand.

Refurbishing the sterilisation or decontamination departments of a hospital — whether it is planned or the result of an emergency — or replacing the equipment in it, can be a daunting process. Additional space will be needed to set up a temporary facility, and the entire flow of instruments within the hospital risks being disrupted.

Sterilisation and decontamination departments are often in use seven days a week, and are critical for the flow of patients and procedures to carry on unhindered. It is also essential that decontamination of any instrument used in a hospital setting meets the latest standards, including AS/NZS 4187:2014, and this can be difficult to achieve with a temporary setup.

Decanting the CSSD

Hospitals without the space or the budget to reconstruct a new or temporary internal sterilisation or decontamination department have limited options. Using a neighbouring hospital's sterilisation facilities temporarily, or outsourcing the whole process, means sending instruments to an off-site location.

This means the hospital could be faced with delays in getting vital instruments back to the department, an increased risk of contamination and the hospital may also need to buy more instruments to cover the increased 'downtime'.

Another option is to deploy a flexible, mobile or modular solution which allows cleaning to continue to take place on-site. One example is Q-bital's mobile Central Sterile Services Department (CSSD) unit, which is now available in Australia.

Fully integrated and designed to provide replacement capacity, it will help hospitals to continue delivering the vital service of cleaning, sterilising and repackaging of surgical instruments during a temporary service disruption or exceptional demand.

A flexible on-site solution

The mobile CSSD units offered by Q-bital are compliant with the latest Australian standards, and can be brought to any hospital site, allowing all processes to continue uninterrupted, with sterilisation activity being kept on site, and utilising the hospital's existing staff.

The sterilisation process is strict for surgical instruments; the water used in the sterilisation process needs to be purified and disinfected and the air in the department needs to be filtered to ensure optimal cleanliness. A unidirectional flow of instruments also needs to be ensured.

Q-bital's CSSD unit, which is completely stand-alone, takes care of all this and contains all facilities and equipment needed for the process. Units contain an integrated RO system with water softener and brine tank to ensure water quality meets all requirements, and provide HEPA-filtered environmental air. Integrations for the hospital's own track and trace system are also provided, allowing the hospital to retain control over the flow of instruments.

Mobile sterilisation departments have one-way flow and incorporate a pre-cleaning area with a manual clean workbench, washer disinfectors and steam sterilisers, a clean packing room and a post sterilisation processing room, as well as dirty and clean utility areas. A staff changing area, including WC and hand washing facilities, is also provided for the comfort of staff working in the unit.

Suitable for any site

A flexible mobile CSSD or endoscope decontamination facility can be installed very quickly with a minimum of preparation, depending on the characteristics of the site. All that is needed is a relatively flat hard standing area, such as a car park or concrete pad, along with connections to utilities within a reasonable distance from where the unit will be placed.

As well as the space required for the unit itself, which is around 15 x 8 metres, additional space may be needed for steps, ramps and connecting corridors. Evaluation visits can be provided if required, and a site survey, risk analysis and support with planning forms part of Q-bital's commitment to the hospital.

Q-bital works closely with the hospital throughout the commissioning and validation process that takes place once the unit has arrived on site, and provides full training and induction on the unit, which includes 'sign-off' of hospital staff.

For many hospitals, achieving compliance with the new AS/NZS 4187:2014 sterilisation standards will mean remodelling or upgrading the central sterilisation department, and bringing a fully compliant mobile CSSD unit on-site will enable this to be achieved with a minimum of disruption.

Get in touch at info@q-bital.com to find out more about mobile CSSD availability in Australia.

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The growing role of sustainable microgrids in health care

Hospitals are facing budget pressures and demands to operate sustainably, but administrators cannot ignore the critical issue of power supply and resilience against grid instability. Increasingly they are turning to microgrids to boost resilience and finding that the technology can also address their financial and environmental issues.

Now is the perfect time for hospital teams to adopt a microgrid solution: the technology is mature, making solutions more affordable and easier to implement than ever before.

Microgrids work by generating energy through distributed energy resources (DERs) such as renewables and combined heat and power (CHP) systems. The energy generated is consumed by the load and excess energy is either sold to the grid or stored in batteries.

At a time when healthcare facilities are facing financial pressures due to COVID-19, microgrids enable a facility to automatically choose the lowest-cost fuel source, thereby helping them save on their energy bill. For example, a hospital may decide to 'go island' when consuming energy from the grid isn't cost-effective, such as during times of peak demand.

Innovative solutions are needed to handle the influx of patients from a global population that continues to grow, especially as that population ages. Continuity of electrical supply is vital to the delivery of healthcare services and protecting patient safety. This means that hospitals need to be able to ensure that electricity supply is not interrupted at any stage as lives could be on the line.

At the same time, advances in medical care often require increasingly complex technology, resulting in an increased demand for power within healthcare facilities. With many regions of the world facing grid instability, including hospitals in natural disaster-prone areas unable to rely on the national grid remaining up, local solutions can provide a more reliable, and sustainable, source of energy.

In the past, emergency power has been predefined to address only the most critical functions — eg, operating rooms, intensive care and emergency — accounting for 20–50% of the total services of the hospital. However, as the number and severity of weather events increase, local communities are in greater distress, requiring 100% sustained hospital services, enabled by 100% power availability.

In their 2019 outlook for the healthcare industry, Deloitte noted, "Global health care expenditures are expected to continue to rise as spending is projected to increase at an annual rate of 5.4% between 2017–2022."

Two of the five key factors impacting financial performance are listed as "increased use of exponential technologies" and "the demand for expanded care delivery sites".


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As for many industries, staying ahead of environmental regulations while maintaining service levels is a challenge that healthcare facilities must tackle. Managing consumption and using green energy sources is often a big part of complying with regulations while also ensuring that the facilities can remain online during a crisis. Beyond that, minimising a building's carbon footprint can also help achieve green building certification and establish a 'greener' image in the local community.

Faced with this, hospitals are increasingly building microgrids to improve patient safety through better power availability, while relieving budgetary and environmental pressures. A complete microgrid solution intelligently coordinates a variety of onsite, distributed energy generation assets to optimise costs and power stability, including the option to 'island' from the utility grid to avoid exposure to outages or disturbances.

With their need for large amounts of continuous, clean and affordable power, hospitals are excellent candidates to benefit from microgrids. Microgrid technology has reached a high level of maturity, being adopted in many types of facility and infrastructure applications, such as utilities, community services, government offices, military bases, large industrials, hospitals, and educational campuses.[1]

Worldwide microgrid capacity is anticipated to grow by more than 20% per year. Driven by previous massive growth, the overall cost of installing microgrids has dropped an estimated 25 to 30% since 2014,[2] and is expected to continue on that trajectory. Microgrids ensure smartly procured, locally generated and efficiently consumed energy — they're an ideal solution for healthcare facilities looking to keep the power on and save energy costs during uncertain times.

Schneider Electric provides complete microgrid expertise and integrated solutions for hospitals. Schneider Electric's EcoStruxure™ for Healthcare is the IoT solution architecture for digital hospitals. Find out how Schneider Electric can deliver solutions that improve safety, patient satisfaction and operational efficiency by visiting se.com/au/healthcare.

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Where EcoStruxure for Healthcare by Schneider Electric has provided success for Australian hospitals

Western Sydney, Sydney

A teaching hospital in Western Sydney was using a plethora of system migrations including pneumatics to excel controllers. A refurb was required quickly, without disturbing the daily operations of the hospital, while at the same time a six-month construction program was being rolled out to expand operations.

Schneider Electric's EcoStruxure solution was implemented and meets the needs of the NSW Government's vision to transform the hospital into an innovative, contemporary and integrated healthcare centre.

As a result, the hospital now enjoys better synergy as they deal with one technology provider over the entire facility. The IoT-enabled, future-ready platform EcoStruxure for Healthcare helps the hospital insightfully anticipate and manage the everyday matters and extraordinary events of health care.

Blue Mountains, Sydney

A teaching hospital in one of the fastest-growing areas in Sydney was struggling with distributed systems and a lack of reliable, energy-efficient power. It required a scalable solution for future expansion that could handle multiple complicated integrations.

To tackle this challenge, the EcoStruxure Building Operation was selected to manage operating theatres, isolation and endoscopy rooms, air conditioning, monitoring of blood fridges and the ongoing provision of power to electrical, water and gas meters.

Today, facility upgrades and new developments are being added to the system to continue to provide a central point of control over all power requirements within the hospital.

Melbourne, Victoria

A provider of discreet service for cancer patients was faced with ageing infrastructure and disparate systems while facing growing competition in the sector.

The Ecostruxure for Healthcare solution provided integration of all technologies for improved operability and ensured that the redevelopment maintained the facility's reputation as an innovative, modern and technologically advanced hospital able to respond to current and forecast demands.

Schneider Electric technology has evolved with the provider's needs over many years. Ecostruxure brings a new level of integration providing value that the hospital can leverage for their patient experiences.

Adelaide City Centre, Adelaide

A leading healthcare provider in Adelaide was fusing an end-of-life environmental monitoring system with requirements for validation to Good Manufacturing Practices. The segregated EMS and BMS systems that the hospital had in place provided risk of downtime and the facility teams needed to respond to alarms from both systems.

To tackle this challenge, Schneider Electric upgraded the entire system using the EcoStruxure Building Operation solution for centralised site management.

As a result, the facility has reduced the risk of non-compliance and can now view EMS and BMS from a single platform. In addition, the system provides a known lifecycle budget, improved audit trail and reporting functions, enhanced cybersecurity and reduced risk of system downtime.

Designed to deliver improved safety, patient satisfaction and operational efficiency, EcoStruxure for Healthcare is the IoT solution architecture for digital hospitals.

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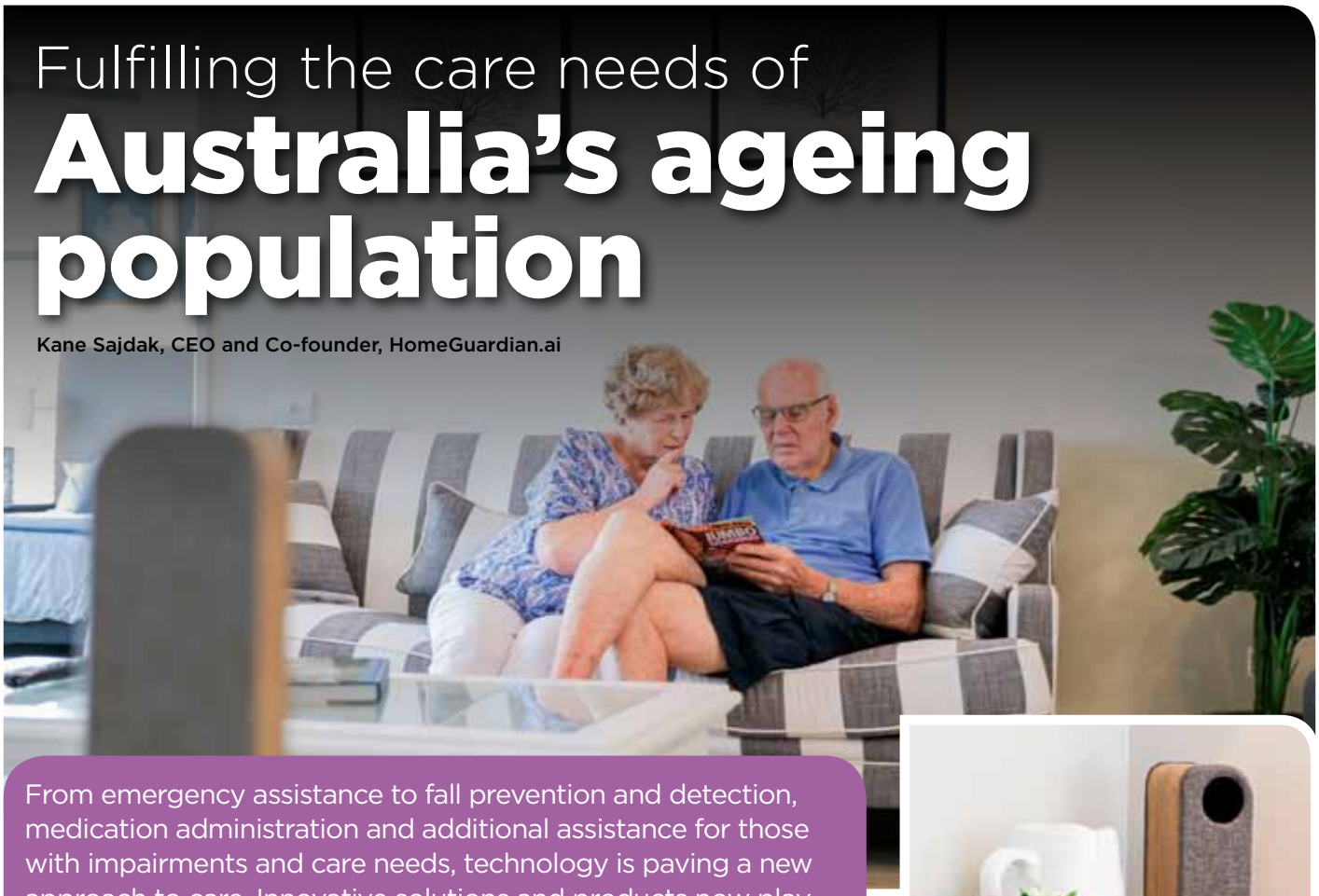
Fulfilling the care needs of Australia's ageing population

Kane Sajdak, CEO and Co-founder, HomeGuardian.ai



From emergency assistance to fall prevention and detection, medication administration and additional assistance for those with impairments and care needs, technology is paving a new approach to care. Innovative solutions and products now play a central role in the life of, and offer a new model of positive ageing for, many elderly and at-risk Australians.

Last year, the Royal Commission into Aged Care Quality and Safety revealed that innovation and technology can and should be utilised across Australian aged-care facilities and assisted care at home. Change is clearly in the air, and technology encourages older Australians to maintain independence, functionality and a higher quality of life.

New research published in the *Medical Journal of Australia* shows almost 60% of aged-care residents are living in facilities with "unacceptable" staff levels compared with global staffing benchmarks. To bring all Australian aged-care homes up to adequate staffing levels would require a 20% increase in the number of aged-care staff.

The numbers make a clear case that the existing system is failing to deliver the care Australians need and expect. Elderly Australians deserve a model of care that fulfils both their social and clinical needs. The union of artificial intelligence (AI), technology and automation with the practical and effective coordination of nurses may provide the solution.

Bridging the 'care gap'

From cutting-edge sensors to virtual reality and smartphone apps, innovations in technology are underwriting a fundamental shift in the aged-care sector. While wearables and the Internet of Things (IoT) were once the gold standard, AI and robotics are gaining speed and responding at a faster pace to market conditions, consumer sentiment and regulatory changes.

Introduced in 2019, HomeGuardian.ai is a patented AI device that can detect if a loved one or patient suffers a fall or other abnormal behaviour in the home, hospital or aged-care facility.

Innovative products like HomeGuardian can bridge the 'care gap' and transform the independent living, aged-care, disability and hospital sectors in Australia.

Even before the lockdown and restrictions of the pandemic, inadequate levels of staffing and age-old practices impacted the level and quality of care for Australia's elderly and at-risk population.

HomeGuardian triggers alerts within seconds of a fall or other abnormal behaviour without human intervention. Our world-first technology allows loved ones or care providers the ability to monitor wellbeing 24/7.

No one wants a security camera in their bedroom or bathroom, so our technology is able to monitor someone's interactions with their surroundings without compromising their privacy or dignity. HomeGuardian also monitors for absence and wandering, and sentiment analysis addresses any decline in a loved one's health early.

HomeGuardian will allow people to live independently for longer, offer care providers the best incident-detection technology in the world and, crucially, save lives.

East Wimmera Health Services (EWHS) has purchased HomeGuardian.ai to support the delivery of care in their community health services. EWHS Community Health Nurse and Health Navigator Genette Heslop said the care provider decided to implement the device in their community health offering due to the world-first technology.

"Unlike other products on the market, HomeGuardian does not rely on anyone pushing a button. Whether our clients have cognitive or mobility impairments, we like that HomeGuardian is able to monitor their vital signs and alert someone if a fall or abnormal behaviour occurs," Heslop said.

By leveraging the right technology like HomeGuardian.ai, Australia can move from being the subject of an aged-care Royal Commission to a world leader in how we deliver care to the elderly.

To find out more on HomeGuardian.ai and its smart home device, visit https://homeguardian.ai/.

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Isolation on demand, wherever you need it

Healthcare-associated infections (HAIs) are one of the most common, significant, and preventable patient safety issues today. Each year in Australia, 180,000 patients suffer HAIs that prolong hospital stay and consume 2 million hospital bed days.[1] Not only is this a huge cause of morbidity and mortality, but it also places a significant strain on hospital resources.[2] Prevention of pathogen transmission is becoming more challenging due to the increasing prevalence of multi-drug resistant organisms (MROs).

Physical separation of patients is an important step in reducing the transmission of key hospital pathogens. The allocation of single rooms is almost a science in itself, with many and varied reasons for isolating a patient vying for this finite resource. The use of risk assessment tools determines a patient may need to be "isolated" in a multi-occupancy bay using standard curtains and notification posters. While this is standard practice, there is an innovative alternative to increase the availability of additional isolation space to help prevent infections and save lives.

Clinell Rediroom

From the makers of Clinell, Rediroom is a cost and time-effective method of safe and efficient patient isolation. It has been designed to offer the middle ground between single rooms and multi-occupancy bays — providing many of the benefits of single occupancy rooms (better containment of pathogens, improved hand hygiene)[6] and multi-occupancy bays (patient visibility and reduced cost in terms of staffing).

The conversion of multi-bed rooms to single-occupancy rooms improves patient outcomes and reduces the burden of HAIs[3,4] — including MRSA and *C. difficile*.[4-6]

Specifically designed as an alternative to hospitals needing to build permanent, expensive, and space-consuming isolation facilities that may only be used occasionally — Rediroom enables hospital pathogens and outbreaks to be safely controlled, to reduce the spread of infection.

Rediroom conforms to Australian infection prevention guidelines[7] and offers isolation on demand, in a single occupancy room supported by HEPA and carbon filtration with a hands-free door opening mechanism. A built-in PPE station supports precautions management, and the device is easily deployed by one person in less than 5 minutes. It is designed to assist in isolating infectious patients under contact or droplet precautions in hospitals (wards, ED, recovery, etc.) and other facilities including aged care, airports, outbreak management and military bases.

For more information on Clinell Rediroom go to www.gamahealthcare.com.au and to discuss an evaluation email info@gamahealthcare.com.au.

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Wollongong Hospital finds solution to

connect ICU patients with their families

Wollongong Hospital has worked with Cisco and two local Australian innovation partners to develop HowRU — a bespoke healthcare solution that uses video and collaboration technology to help families and ICU patients stay connected.

The solution was designed to address common technical, logistics and privacy issues that patients, families and staff were experiencing when connecting with video chat solutions not designed for the specific needs of hospital and ICU patients.

Wollongong Hospital worked closely with nurses, social workers, technology experts, patients and their families to develop a solution that would overcome the challenges that visitor limitations are placing upon ICU patients, as well as guarantee high levels of security and privacy.

Addressing the specific needs of COVID-19 patients and staff in ICUs

The COVID-19 pandemic has created enormous challenges for ICUs. To ensure patient, staff and public safety, visitors are greatly restricted and, at times, all visitation is prohibited. Limits on interstate and international travel have also reduced the ability of family members to be with their sick loved ones.

In the intensive care setting, where patients are often critically unwell, the absence of a family member at the bedside can be traumatic for both patient and families. Bearing witness to the negative

consequences that the physical distance causes for such patients and families — and being unable to provide optimal patient-family-centred care — can also be distressing for ICU staff.

In an attempt to overcome visitor restrictions, a virtual alternative was needed to simulate flexible and open access to patients. Several off-the-shelf videoconferencing apps/platforms were explored; however, none of them in isolation were functional in the unique ICU environment where staff often have to operate videoconferencing on behalf of their unconscious patients. In particular, there was no simple way of creating private and secure spaces for families to connect and communicate.

Someone in the unit would usually be required to use their personal email or a generic account to send invites to the families for every single virtual meeting, staff would need to coordinate timings with all family members, and they would then be required to stay present during the virtual connection.

This added an extra burden for ICU staff already busy with heavy clinical workloads and responsibilities, and didn't allow for privacy or flexibility.

Wollongong Hospital quickly realised they needed a tailored solution — a holistic system that would overcome the barriers they encountered when using off-the-shelf apps, and would be designed with inbuilt support for families and staff to prevent technical glitches and help guide a family member to connect with their loved ones.

Automated connections, privacy and flexibility at the core of HowRU solution

Working in collaboration with technology adoption specialists Taleka and Citrus Health, and using Cisco Webex, Wollongong Hospital was able to design, test and implement a supported solution that was streamlined, easy to use and secure, with flexible and automated virtual connections between patients and their families.

HowRU has helped to reduce ICU staff's workload by enabling families to set up spaces with ease. To use the app, patients are given their own iPad on a stand and a unique, de-identified patient account.

The Automated Patient Creation function means the ICU staff simply enter the patient's name and the email addresses of family members that wish to be included. A secure account for the patient is created and verified, a family space is created, family members are invited by email to join the space, and a greeting message with a brief information video is posted to welcome the family. No further security steps are required and no individual meetings need to be scheduled. Once the families have downloaded the same app and accessed the family space, it can be opened for a video call by either the patient, ICU staff or family, with just a few simple taps, at any time. Once the space is open the ICU staff can then leave the room and allow the family private time with their loved one.

In the intensive care setting, where patients are often critically unwell, the absence of a family member at the bedside can be traumatic for both patient and families.

This innovative and secure system bypasses the time-consuming and complicated six-step process required by off-the-shelf video chat solutions.

Impact of the technology

Kathleen Thomas, ICU Senior Registrar and COVID Coordination Committee member at Wollongong Hospital, explained, "There is no equal substitute for being able to offer physical comfort to a loved one who is critically ill; however, when visitor restrictions are in place during the COVID-19 pandemic, it is reassuring to know that we have an alternative that we can offer families and patients that most closely simulates our standard of visiting.

"HowRU aligns with our holistic code of conduct, ensuring patient and family privacy, dignity and security, while providing an open and flexible line of communication that can be adapted to the needs of each individual patient and family. Ultimately, we hope HowRU will minimise the traumatic impact that visitor restrictions can have on ICU patients, families and staff.

"The HowRU solution has transformed and humanised the way patients and families experience those ICU stays. The fact that families can connect at any time, with minimal input from nurses, has dramatically helped improve the patient care experience without increasing the staff workload."

Wollongong Hospital's Director of ICU, Al Davey-Quinn, shared the impact of the technology, and said that collaboration was integral to making the project such a success.

"Taleka worked directly with our ICU staff and patients' families to understand our current workflows and unique needs, then liaised with the Citrus Health team to apply the innovation to Cisco Webex and simplify those workflows using automation. This process was instrumental in making this solution work for the patients, their families and for our staff.

"The HowRU solution already had such a positive impact on patients, families and staff. It will continue to remain an ongoing feature of the Wollongong Hospital's ICU and play a key role in keeping families connected moving forward."

Cisco Vice President of Australia and New Zealand Ken Boal commented, "Wollongong Hospital has shown how technology can be an amazing enabler in supporting the patient experience in a highly sensitive and stressful environment, in particular when solutions are built in close collaboration with those on the frontline, caring for patients and connecting with family members.

"The challenges hospitals and health professionals face today is unprecedented, and it is absolutely vital that technology providers support the application of technology in these environments, with the ability to develop and build industry-relevant solutions that can help improve patient care, keep families connected and support medical staff," Boal said.

Monash researchers outsmart superbug

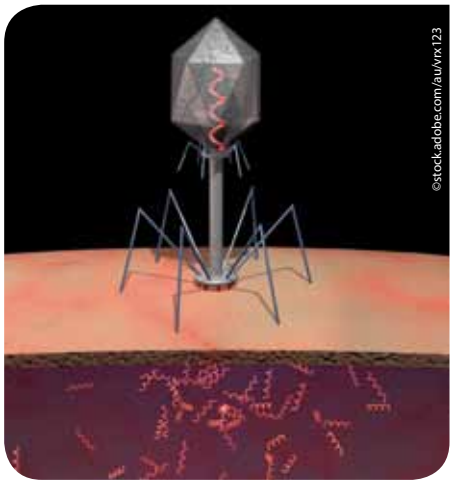
A team of Monash researchers has discovered how to revert antibiotic resistance in one of the most dangerous superbugs: *Acinetobacter baumannii* — responsible for up to 20% of infections in intensive care units.

Published in *Nature Microbiology*, the research paper describes the use of bacteriophages — also known as 'phages' — to kill *A. baumannii*, pinpointing how the superbug becomes resistant to attack from phages, and in doing so, loses its resistance to antibiotics.

"Phages are viruses, but they cannot harm humans," lead study author Dr Fernando Gordillo Altamirano from the Monash University School of Biological Sciences said.

"They only kill bacteria."

Dr Jeremy Barr — senior study author, Group Leader at the School of Biological Sciences and part of the Centre to Impact AMR — added, "We have a large panel of phages that are able



to kill antibiotic-resistant *A. baumannii*. But this superbug is smart, and in the same way it becomes resistant to antibiotics, it also quickly becomes resistant to our phages."

Dr Altamirano explained that *A. baumannii* produces a capsule — a viscous and sticky outer layer that protects it and stops the entry of antibiotics.

"Our phages use that same capsule as their port of entry to infect the bacterial cell," Dr Altamirano said.

"In an effort to escape from the phages, *A. baumannii* stops producing its capsule — and that's when we can hit it with the antibiotics it used to resist."

The study showed resensitisation to at least seven different antibiotics.

"This greatly expands the resources to treat *A. baumannii* infections," Dr Barr said. "We're making this superbug a lot less scary."

Even though more research is needed before this therapeutic strategy can be applied in the clinic, the prospects are encouraging.

Antimicrobials in aged care

Professor John Turnidge AO and Ms Kristin Xenos

Recent work by the Australian Commission on Safety and Quality in Health Care — as part of the Antimicrobial Use and Resistance in Australia (AURA) Surveillance System on antimicrobial resistance (AMR) and antimicrobial prescribing in Australian residential aged-care homes — has delivered a powerful reminder that action to improve antimicrobial use is vital to the safety of residents.

Strategies to improve antimicrobial prescribing and reduce the risk of inappropriate antimicrobial use among older patients are key to combating antimicrobial resistance. These strategies include reducing the number of prescriptions for prophylaxis (which is rarely recommended) in aged-care homes; continuing to improve documentation of antimicrobial prescriptions; and considering better use of preventative measures, such as non-pharmacological management of some clinical indications, such as cystitis, skin and wound infections.

As part of the AURA Surveillance System, the Commission has recently published the 2019 Aged Care National Antimicrobial Prescribing Survey (AC NAPS) Report, in conjunction with the National Centre for Antimicrobial Stewardship. The 2019 AC NAPS Report provides information on infections and antimicrobial use for 32,347 aged-care residents from 568 Australian residential aged-care services.

The 2019 AC NAPS data demonstrate ongoing and concerning levels of inappropriate antimicrobial use in Australian residential aged-care services, with implications for the safety of residents. In combination with the prevalence of antimicrobial resistance in the community, this inappropriate use of antimicrobials creates the potential for amplification of antimicrobial resistance in this vulnerable population.

As shown in AURA 2019 — the biennial report on antimicrobial use and resistance in Australia — some multi-resistant organisms such as strains of *Escherichia coli* and methicillin-resistant *Staphylococcus aureus* are already prevalent in aged-care facilities.

Antimicrobial use in aged-care services is a critical area for service improvement, given older people may have regular hospital admissions and be more susceptible to infections due to their close living environment, being immunocompromised and greater use of invasive devices. They are also more likely to take multiple medications, so the burden of adding antimicrobials for these patients is high. Antimicrobials are not without safety risks and adverse effects such as renal impairment and *Clostridiodes difficile* can be more significant in the elderly population.

The Aged Care Quality and Safety Commission's Aged Care Quality Standards also specifically mention the promotion of appropriate antimicrobial prescribing.

The Australian Commission on Safety and Quality in Health Care is currently working with, and supporting, the Aged Care Quality and Safety Commission, multi-purpose services, aged-care providers and general practitioners who work in aged-care homes, to promote antimicrobial prescribing improvement programs informed by the AC NAPS findings.

Ongoing surveillance of infections and antimicrobial use will remain important in informing residential aged-care providers'

strategies for improving care. Strategies to improve resident safety include:

- Regularly reviewing usage patterns, in collaboration with medical and nursing staff, including prescriptions for antimicrobial prophylaxis, and compliance with Australian Therapeutic Guidelines on recommended duration and choice of antimicrobials.
- Sharing analyses of AC NAPS data with administrators, governance groups and clinicians such as general practitioners, pharmacists and nurses, to develop targeted improvement strategies.
- Reflecting on how results from AC NAPS data are communicated to clinicians, governance and leadership groups, residents and their families.
- Using medication charts consistent with the Commission's National Residential Medication Chart to improve documentation.
- Implementing policies that require default, fixed-length courses of treatment and mandatory review dates, particularly for 'when required' prescriptions.
- Engaging external expert support for aged-care staff on antimicrobial use, and diagnosis, prevention and control of infections, as required.
- Using resources to support implementation of policies and procedures consistent with the Australian Guidelines for the Prevention and Control of Infection in Health Care.
- Introducing infection prevention and control, and antimicrobial stewardship education for nurses, prescribers and family members of residents to raise awareness and skill levels.
- Offering education for non-nursing staff who provide care to residents on the importance of infection prevention and control and basic personal and hygiene care.

Key findings from the AC NAPS 2019 Report

- Approximately 20% of prescriptions were for prophylaxis, which is concerning as antimicrobials are rarely recommended for prophylaxis.
- Almost one-third (30.4%) of all prescriptions were for topical antimicrobials, which also accounted for more than 90% of prn (as required) prescriptions, most commonly clotrimazole (74.1%). The prn use of clotrimazole may lead to inappropriate duration of therapy, and unnecessary use of antifungals, either topically or systemically, which may contribute to the development of resistance.
- Almost one in six (15.0%) antimicrobials were prescribed for prn administration, which may reduce clinical review of antimicrobial choice at time of onset of infection and decisions regarding duration of treatment, leading to extended duration of treatment.
- There was an improvement in documentation of antimicrobial review or stop dates (64.7%) compared with 2018 (58.9%).
- The most common clinical indications for antimicrobial use were cystitis; other — skin, soft tissue or mucosal; pneumonia; tinea; and non-surgical wound infections. Many of these conditions can be prevented by managing hydration and providing good basic hygiene care. Non-pharmacological management is also a key consideration for these conditions.
- Cefalexin, topical clotrimazole, amoxicillin–clavulanic acid, trimethoprim and doxycycline were the most commonly used antimicrobials. Agents with narrower spectrums than cefalexin and amoxicillin–clavulanic acid are recommended for many infections, as they are less likely to promote antimicrobial resistance.

As topical antifungal use and unnecessary treatment of asymptomatic bacteriuria are two persistent issues identified from AC NAPS, resources have been developed to support responses to these issues.

Access current resources to support antimicrobial stewardship in aged-care settings at: https://www.safetyandquality.gov.au/antimicrobial-stewardship-aged-care.

Kristin Xenos is a Senior Project Officer in Antimicrobial Stewardship (AMS) with the AURA team of the Australian Commission on Safety and Quality in Health Care. Kristin is a fellow of the Society of Hospital Pharmacists of Australia (SHPA), a member of the SHPA Infectious Diseases Leadership Committee and is an Advancing Practice Pharmacist (Stage III). She is co-host of the Purple Pen Podcast (a podcast all about clinical pharmacy).

Professor John Turnidge AO is Senior Medical Advisor for the AURA Surveillance Program at the Australian Commission on Safety and Quality in Health Care and has been the clinical lead for the establishment and operation of the AURA Surveillance System since 2014. Professor Turnidge is the Scientific Secretary, European Committee on Antimicrobial Susceptibility Testing, Emeritus, and Affiliate Professor, School of Molecular and Cellular Biosciences, Clinical Professor of School of Health Sciences (Pathology and Paediatrics), University of Adelaide.

Infection control practices need a post-COVID update

Dr Cathryn Murphy, Adjunct Honorary Associate Professor at Bond University*

The COVID-19 pandemic exposed vulnerabilities in how infection control is managed within the Australian healthcare system. Healthcare workers in Australia are nearly three times more likely to contract COVID-19 than the general population.

Some of the best advancements witnessed in infection prevention and control have come from retrospectively reviewing data collected during outbreaks, such as SARS 2003. It is a pivotal time for the industry to reflect on the COVID-19 pandemic and reanalyse the current approach to infection control.

During the SARS outbreak in 2003, healthcare workers in Southeast Asia created a buddy or ward-based champions system to remind fellow staff of best-practice infection control in real time. A ward champion or buddy would intervene, when possible, to prevent someone from breaching infection control measures.

For example, they would make hand gestures in closed infection control environments or call out to stop that individual from touching their eyes or adjusting their mask. This type of system could also be set up to support healthcare workers in Australia.

When a pandemic hits, governments, hospitals and healthcare workers need to mobilise quickly, but key to delivering care is ensuring all frontline workers are fitted with their personal protective equipment (PPE) prior to an outbreak.

Incorrectly or poorly fitting PPE can be ineffective and create high-risk, unsafe environments for hospital staff, patients and visitors. A key practice that can be adopted is mandatory, annual fit

testing for PPE. The size and brand of mask that fits each individual is unique. The mask's seal and a person's face shape all play a role in choosing the best-fitting PPE. Facilities could create a system for healthcare workers to carry details of their exact fit on a name or security tag. These reminders would help staff stay informed on their fit and remain conscious of always donning the correct PPE for them.

Infection control teams are often the first points of contact when it comes to PPE in the healthcare setting; however, these teams are often challenged with misinformation and conflicting advice from non-expert individuals and agencies. Small practices can be particularly vulnerable to lapses in infection protection, as there is often no single member of staff who is responsible for an infection control program. These factors all contribute to the need for everyone in the healthcare sector to be well versed in understanding PPE and the risks incorrectly worn, fitted or low-quality PPE can carry.

Misinformation can also extend to product selection. Healthcare workers should never assume that a mask does the job. The COVID-19 pandemic saw the emergence of poorly designed or even counterfeit PPE entering the Australian market. The rollout of national PPE training programs for staff in public and private hospitals as well as GP clinics could help improve education around these issues. These programs would need to include competency testing on selecting appropriate PPE as well as education on donning and doffing — including appropriate disposal.

When a pandemic hits, governments, hospitals and healthcare workers need to mobilise quickly, but key to delivering care is ensuring all frontline workers are fitted with their personal protective equipment (PPE) prior to an outbreak.

There is a movement towards improving understanding and sharing insights from the pandemic throughout the sector. COVID-19 has triggered greater interest from healthcare workers to learn more about infection control with the emergence of new resources, like The Halyard Education Podcast Series, which support that broader education.

By looking at past outbreaks, the Australian health sector can gain insight into how to effectively prepare for future scenarios. With case numbers dropping throughout the country, it is now integral to think critically about key learnings from the height of the pandemic, including a review of how infection control can be managed to better protect healthcare workers into the future.

*Dr Cathryn Murphy has spent 33 years specialising in infection control and prevention and has worked at and with several of the world's leading and infection control agencies and organisations over that period. These include the Centres for Disease Control and Prevention in Atlanta, the World Health Organization, as a consultant during SARS, and as a leader and president of APIC and a participant on various infection control-related committees on the Australian Commission on Safety and Quality in Healthcare.

New horizons for health and life sciences data

A new strategic partnership is seeing SAS Analytics combining with Microsoft's Azure to open up new possibilities in healthcare.

If there's one positive to come from the COVID-19 pandemic, it is the acceleration of digital technologies and working practices throughout every industry sector across the globe, and none more so than the healthcare sector. Digital transformation plans have had to be put into place within days or weeks instead of years.

But having the hardware and software in place is only part of the story. The most important component of any digital system is the data that resides within it, and the purposes to which that data is put.

"Meeting the challenges of a global pandemic means that every healthcare stakeholder — from patients and providers to insurers and pharmaceuticals — must share data from disparate geographies, scenarios, and populations in the effort to help understand, treat, and eventually eradicate COVID-19," said Dr Mark Lambrecht, Director of the Global Health and Life Sciences Practice at SAS.

"No doubt, the processes built today — as well as the key lessons learned and preparations made — will define the future of healthcare."

Some of those lessons and preparations will emerge from a new strategic partnership formed between SAS and Microsoft, which aims to accelerate healthcare innovation through artificial intelligence and computing.

Transforming our understanding

Although massive efforts are underway to connect healthcare data that comes in every form, standard, and quality imaginable, "Gaining insights from the intersection of patient observations and clinical trials, for instance, can feel Sisyphean — yet that ability will likely define the future of healthcare," said Lambrecht.

One standout example of success is the Healthy Nevada Project, which is already demonstrating the value and possibilities of connecting patient data. This community-based, genetics study uses SAS machine learning and artificial intelligence to improve population health in Nevada.

"By gathering information from citizens who enrol in the program, geneticists can identify predispositions for certain diseases, or alert asthma patients when they travel to a part of the state with poor air quality," said Lambrecht.

"To amplify these applications of data analytics and AI on a global scale requires massive compute power and a secure infrastructure to share and control patient data," he added.

"That's what excites me about our new partnership with Microsoft and the combined power of SAS analytics running on Azure."

This idea is supported by Heather Cartwright, who leads a team on new cloud and AI technologies for health data at Microsoft. She says that unsustainable workloads in the healthcare space have acted as an impetus for adoption of the cloud.

"There is an overwhelming increase in the types of data care teams need to manage. As the number of inputs clinicians use to treat patients grows, we need to leverage different tools for health data," said Cartwright.

"Cloud technology provides the scale which is urgently needed to manage health data workloads, but just as important, it enables machine learning with that data," she added.

"Health leaders understand how that will transform our understanding of human health and how we deliver care in the future. So healthcare is finally saying, 'Okay we need to go to the cloud, and we need to know how.'"

But sometimes it's not easy, says Lambrecht. "As the leader of SAS' scientific response

“To lead the way forward, healthcare organisations need a comprehensive enterprise cloud strategy and an analytics strategy that drives insight from real-world data.”

Mark Lambrecht, SAS

to COVID-19, I can testify to the difficulty of bringing observational patient data derived from healthcare claims, healthcare registries, clinics, and all types of patient interactions together for analysis,” he said.

“To lead the way forward, healthcare organisations need a comprehensive enterprise cloud strategy and an analytics strategy that drives insight from real-world data.”

Lambrecht says that Microsoft and SAS are “committed to meeting healthcare organisations where they are,” with cloud-based solutions that are ready to run on day one, but can also scale as organisations grow.

A good example of this is Mercy, a leader in both technology and clinical care. Among the first organisations running SAS analytics natively on Azure, Mercy boasts a virtual health division and an analytics culture that helps it bring information together about COVID-19 patients and rapidly package that data to make it available to other health organisations working on innovative therapies.

The safe and secure cloud

Although the healthcare sector traditionally takes a conservative approach to innovation, it needs to be able to scale and drive insights from different types of data sources. SAS AI and analytics provides that scalability.

As Cartwright puts it, “When you’re innovating, trust is essential. We want to make sure that health systems maintain control over their data when they move it to the cloud, that they can define database access and bring their own identity.”

“We make sure these security measures are in place so our customers can trust that their data is in the right foundation, because that frees them to really focus on innovation.”

Flexibility is important too, which is why Azure Synapse provides the ability to work in whichever environment healthcare professionals are already comfortable. “Scientists shouldn’t have to learn a new language in order to work with a different data set,” said Cartwright.

Critical to that flexibility are the feedback loops and machine learning that enables dynamic decision-making at every level of healthcare.

“It is so important to bring the front lines of healthcare into that machine learning process,” said Cartwright. “Feedback loops are essential to make models better… refining, expanding even, or identifying new algorithms we need to develop.”

“SAS and Microsoft are building solutions that physicians can trust,” added Lambrecht. “We’re rapidly creating simpler interfaces that do not hide the analytical complexity or the data complexity, but still allow decision makers to make the right decision, to extract insights that correctly steer how they need to run their organisation.”

For Cartwright, transparency in AI development is key.

“People using data models should be able to go deeper and understand what is happening in those models, what the inputs are for those models and the parameters, so that they can have trust in it,” she said. “And then we can continue to validate and make sure that they are working at the right levels.”

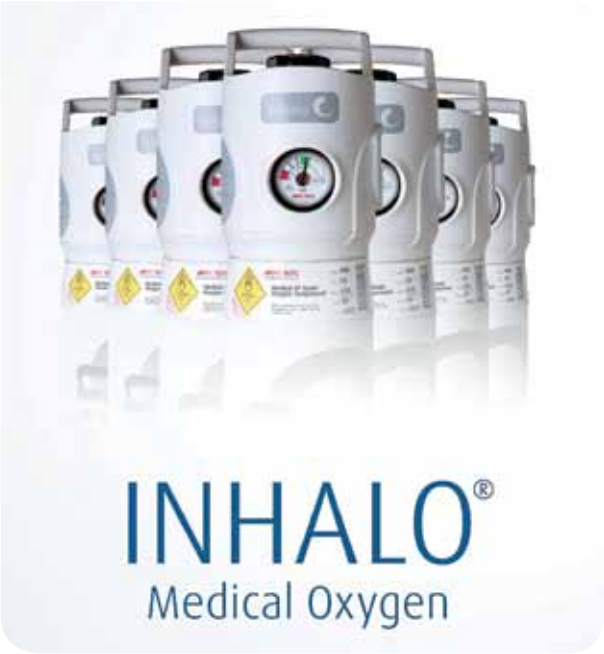
In other words, acceleration shouldn’t come at the cost of proven, hierarchical data validation processes.

Oncology is a good example. Without substituting the expertise of the physicians, SAS’ deep learning algorithms and models helped Amsterdam UMC automate the read-out of metastatic liver lesions due to chemotherapy treatment by rapid calculation of various metrics like volume or surface of the lesions.

The algorithms didn’t hide the complexity of the analytics, but they did provide enormous support for oncologists who would otherwise spend a lot of time on error-prone tasks.

Which just goes to show that if healthcare organisations have their data in the cloud, with analytics engines running and data science teams working closely together, they will have a ‘readiness machine’ to make decisions in a crisis, says Lambrecht.

“I’m thrilled to work with Heather as SAS and Microsoft build that secure and powerful readiness machine together,” he said.



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Designed in consultation with healthcare professionals, the revolutionary INHALO® design integrates cylinder, valve, regulator and flowmeter into a single, robust, lightweight and reliable unit.

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

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

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

Integral valve

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

Live contents gauge

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

Design

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

High capacity package

- The high gas capacity (630 litres) of the INHALO means less cylinder changes saving you time
- With significantly more gas than a standard C sized cylinder the INHALO can save you space on stock holdings, and cost on delivery charges

Multiple oxygen outlets

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

Appearance

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

Registration

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

Inhalo specifications

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

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A mirror on care for older Australians

Sean Rooney, CEO of Leading Age Services Australia

The final report of the Royal Commission into Aged Care Quality and Safety will hold a mirror up to our nation, reflecting the value we place on our elders and how we care for and support them when they need it.

These reflections have been critical during the Royal Commission and all of us must be prepared to make changes — in what will be a once-in-a-lifetime transformation of the Australian aged-care system.

While we continue to protect older Australians from coronavirus, what we do as a sector in the coming months will have fundamental impacts for older Australians and the people and organisations who care for them.

Before the pandemic, aged care was already facing significant challenges, with threats to the viability and sustainability of the care that older people want, need and deserve. This was reflected by the Royal Commission recently, with Counsel Assisting saying residential aged-care providers were being squeezed and must choose between financial viability and providing the level of care that's the minimum standard required to support their residents — an impossible situation.

Despite extensive advocacy by leaders like Leading Age Services Australia (LASA), the system settings around policy, regulation and financing have been out of kilter with the needs and expectations of older people as they age.

Also, the pandemic has widened the cracks in our aged-care system into chasms. At the same time, studies show that community attitudes to aged-care services remain predominantly negative — this is a challenge we must resolve.

We must enact the change we want to see because the story of aged care and the community's understanding will only change when we change. We are committed to doing better — but who exactly is going to lead this? Is it going to be the government that makes improvements? Is it going to be our communities? Is it going to be aged-care providers? Our sector cannot sit back and let others dictate what 'quality' is, or have rules and processes implemented that don't work for older Australians or those who care for them. This is our time to start thinking and doing things differently.

We have to emphasise that we are about care and highlight the importance of our sector to communities and the nation — that we are about meeting basic human needs, underpinned by meaningful relationships and delivered with compassion.

Celebrating Australia's respect for ageing and the capacity to live longer lives to the full is a sign of our success as a society. Our focus needs to be on providing the best possible care for older people. So we don't talk about 'compliance', we talk about 'excellence'. We don't talk about 'facilities', we talk about 'homes'.

We don't talk about 'consumers', we talk about our 'valued elders'. Where others may see 'consumers', 'compliance' and 'service types', we see 'individuals', 'accomplishment' and 'making a difference'. We must embrace this mindset universally across our sector and help spread this into the community. It's about sustaining quality of life as best we can — this is what our sector is about.

While we don't oppose rules for quality, we should not be defined by meeting minimum regulatory standards, or reporting schemes or funding instruments. We need to be defined by the meaningful and measurable differences we make in people's lives. That is why we have to change, we have to re-shape and re-imagine the story of care. What we have to fight against is the inertia in the current system. The future is going to be about doing things differently — and we must prepare for this right now.

The Prime Minister has said: "... the Royal Commission will greatly aid us in that quest to join together to focus on the matters that need to be addressed in aged care ... the Budget ... will have a comprehensive response to the Royal Commission's recommendations".

LASA has been on this journey for years — being more assertive, more expansive and more collaborative in working to realise a better aged-care system.

In December 2020, we were praised by the Australian Associations Forum for providing "exemplary leadership and services to members under pressure". This approach includes our focus on working together to explain to the community why aged care matters and the value our sector brings to the nation. By improving Australia's understanding of this, we will be better placed to hold decision-makers to account to deliver the aged-care system that meets the needs of older Australians.

Celebrating Australia's respect for ageing and the capacity to live longer lives to the full is a sign of our success as a society. Our focus needs to be on providing the best possible care for older people.

We need to transform the aged-care system so older Australians get the care they need, and the workers and organisations who care for them are enabled to deliver the best quality care and services possible. If we want to make Australia the best place to age, it means more understanding and action within the community and increased connections across the generations.

Our commitment to realise a new system must be backed up with all means necessary including funding and processes, along with the right responsibilities and decision-making across all levels of government, age services, families, community groups, towns, suburbs and regional areas. It requires fundamental partnerships between people needing care, care givers, providers, families and advocates.

We have to ensure there are strong links across the health system because we know the importance of cooperation between aged care, primary care, acute care, social services and mental health — particularly as we battle the pandemic. We need to acknowledge the challenges and focus on the opportunities. The best way to take advantage of this upcoming transformation is to channel our energy into the wave of change.

We will work hard to translate the Royal Commission's findings and recommendations into practical actions and meaningful outcomes.

LASA will ensure that older Australians receive care and support with quality, safety and compassion, always — delivered by passionate and professional aged-care workers employed by high-performing, respected and sustainable aged-care service providers.

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Why is Biomaster better than other silver based antimicrobial additives?
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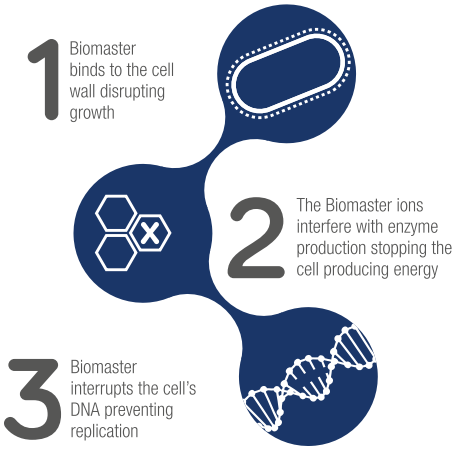

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Roadmapping technology in aged care

Driving towards a robust and sustainable aged-care system

The Technology Roadmap for Aged Care in Australia was published in 2017 to improve the aged-care industry's understanding of the role technology can play in building a robust and sustainable aged-care system in Australia.

The Aged Care Industry Information Technology Council (ACIITC) scoped and commissioned this research and developed the Roadmap, which acknowledges three critical issues faced by the aged-care industry:

- An increasing large cohort of senior Australians at a population level not experienced before.
- Rapid development of new technologies.
- Significant reform of the aged-care sector, particularly following the Final Report of the Royal Commission into Aged Care Quality and Safety.

Recognising the need for technology to underpin the delivery of aged-care services and ensure independence, choice and control for consumers, the Roadmap examined the evidence for technology's contribution to positive ageing.

A positive impact on the lives of older Australians

A review of the literature revealed that technology has played a significant and positive role in the aged-care space. It has been adopted to assess the needs of older Australians, to promote independent living, reduce social isolation and increase social connection. It has helped to reduce the risk of falling, to manage chronic disease, improve medication management and support people with cognitive issues, including dementia. And it has been used to reduce or manage depression, enhance wellbeing and support family carers.

Given the speed of technological change, ACIITC undertook an update review in 2019, releasing a report of the most disruptive technologies, including those that support positive ageing and those that support the care of older people. The comprehensive report is aimed to help advise aged- and community-care providers when making strategic decisions for the future of care.

Key changes in technology were identified, including:

- advances in artificial intelligence and automation;
- advances in blockchain and data analytics;
- continued evolution of sensor technologies;
- ongoing development of virtual reality and augmented reality; and
- voice-activated technology.

The barriers and challenges to the adoption of technology-enhanced ageing and aged care are considered in the report including individual readiness, ethical issues and organisational and system readiness.

Technologies that support positive ageing and independent living

Assistive technologies allow individuals to perform tasks that they would otherwise be unable to do, or can increase the ease and safety with which tasks can be performed. The addition of artificial intelligence (AI) and automation capacity to these technologies means that information can be shared across networks, enhancing communication and visibility between individuals, their carers and families. Intelligent assistive technologies include self-contained devices such as tablets, wearables and personal care robots, distributed systems such as smart homes, integrated sensor systems and mobile platforms, and software applications.

Technology-enabled care (TEC) supports the provision of health- and aged-care services, encompassing telecare, telehealth, telemedicine, mHealth, eHealth and digital health. The convergence of health technology, digital, media and mobile telecommunications via TEC enables more effective integration of care and is considered an integral part of the solution to many of the challenges facing the aged-care sector.

Deloitte's Global Mobile Consumer Survey 2019 found that smartphone penetration has grown from 76% to 91% over the past six years, with Australians aged over 55 one of the last cohorts to jump on board (but they are now on board!). Smartphone ownership data from statista reveal that in 2019, 90% of seniors aged 65 to 74 and 84% aged 75 years and older owned a smartphone.

Technology has played a significant and positive role in the aged-care space.

Smartphone apps are a key part of accessing government services in today's world. In addition to the provision of services, app use provides reliable and real-time data on patterns of service use, needs and preferences. Smartphone sensors, including accelerometers, gyroscopes and GPS tracking, provide health-related feedback to the user and care providers.

Home sensors can play a critical role in regulating ambient temperature and operating household appliances and security systems, providing an ideal environment for supporting a range of other technologies designed to address ageing-related challenges.

The increasing adoption of smart home technologies and linked devices is assisting independent living for senior Australians. As part of the Internet of Things (IoT), smart technologies highlight the critical importance of people's homes and local environments to their independence, and to healthy and positive ageing. In some cases, these technologies — such as voice assistants and robots — can allow older Australians to stay in their homes for longer than they would do without them.

AIITC's report also found that digital technology has an important role to play in managing chronic diseases such as cardiovascular disease and diabetes. Telehealth and monitoring technologies allow vital signs to be monitored remotely, with data sent directly to healthcare providers. The rapid uptake of telehealth as a result of the COVID-19 pandemic has highlighted just how important this technology is as a tool to ensure the health and wellbeing of older Australians and other vulnerable members of our community.

The CARE-IT Report

In 2020, the ACIITC released the Capabilities in Aged & Community Care Readiness: An Evaluation of Innovation & Technology (CARE-IT) report — informing strategic directions and investment strategies for the aged- and community-care sector and benchmarking technology and innovation for the sector.

The CARE-IT Report details nine recommendations, which the ACIITC is working to advance in collaboration with the Department of Health. The ACIITC encourages all to download the CARE-IT report from www.aciitc.com.au to find out what technologies are making a significant and positive impact in the aged- and community-care sector.

Three ways Australian healthcare providers can ride out the ransomware wave

Aaron Bugal, Global Solutions Engineer at Sophos

As if coping with COVID-19 wasn't enough of a challenge for the healthcare industry this year, in mid-November the Australian Cyber Security Centre (ACSC) issued a warning of an onslaught of ransomware attempts being launched by malicious actors against the Australian healthcare sector to extract valuable hospital data. Successful ransomware attacks can disable critical systems, which in a hospital could result in a life-threatening situation.

For instance, in September a ransomware attack in Dusseldorf, Germany, resulted in a hospital patient's death. The death was caused by a delay in treatment, with the ransomware-crippled hospital being forced to transfer the patient to another facility.

So what are the risks?

An ACSC report published in October revealed that the healthcare industry is the most targeted sector by ransomware in Australia. But the sector has long been ripe for ransomware and other cyber attacks. And with decentralised operations across hospitals and healthcare providers, and exponentially growing volumes of patient health information being captured and stored electronically, the industry has become an increasingly appealing target.

No doubt the onset of COVID-19 has also, in many ways, accelerated the threat of ransomware within the sector. The sudden onset of the pandemic forced healthcare providers to very quickly set up emergency COVID-19 facilities, with little time to plan out robust IT security infrastructures to protect these facilities. On top of that, the almost overnight shift to telehealth and remote working meant scores of new security gaps were opened — and discovered by attackers just as quickly.

Attacks are getting more targeted

Attackers are continuing to evolve their ransomware tactics. Now instead of large-scale, brute-force attacks, ransomware attackers have rapidly shifted to more focused, strategically planned and executed strikes, resulting in more precise attacks that are harder to detect and defend against. This is no assembly-line, mass-produced product; this stuff is the craft beer of malware.

Hospitals are the perfect target for attackers as they can't afford to have their systems down because losing data can literally cost lives. Nor do they have the dedicated IT security teams of other enterprises to adequately defend against or even detect ransomware attacks.

So how do they respond? Here are three key steps every healthcare provider needs to undertake to get ahead of their growing ransomware problem.

1. Check your cyber hygiene

Knowing where your vulnerabilities are is critical given the pace at which ransomware attackers are able to strike. If a target opens a phishing email attachment, it only takes a little over three hours for the cybercriminals to begin performing recon across the target's network. Within a day, they'll have begun deployment of their ransomware package. Servers with Remote Desktop Protocol (RDP) enabled, unpatched web servers and a lack of multifactor authentication for logins are all common and key weak points that attackers will exploit.

But this is as much an awareness issue as an IT one. Anyone in the organisation that sends an email, has a password or uses a device to log onto a network needs to know and practise basic cyber hygiene, including creating stronger passwords and knowing how to spot spear-phishing emails. If they don't know what that means, they need to be taught. The security of a hospital's network is only as strong as its weakest password.

2. Conduct company-wide cybersecurity training

IT security isn't just the responsibility of security professionals; it's something that every employee can, and should, partake in. Everyone has to know what spear-phishing emails and what attachments look like. This is especially important as phishing is a major vehicle for ransomware delivery and has become particularly acute during the pandemic, with a major uptick in phishing emails that infect hospital networks by co-opting names resembling legitimate health organisations.

3. Deploy lightning-fast incident response

Ransomware moves fast, so healthcare providers need to be able to move faster. The speed of your incident response is critical; it's the difference between an executed or thwarted ransomware deployment — and potentially life or death for patients. Employing the use of an incident response team provides the lightning-fast edge that healthcare providers need to stay a step ahead of ransomware gangs, minimising the damage done to their networks, recouping otherwise lost costs, reducing recovery time, and ultimately helping to preserve the speed and quality of patient care — even potentially saving lives.

Ransomware attacks pose a constant critical threat to the healthcare sector. However, the threat is heightened when services are already under pressure from COVID-19. Now is the time for hospitals to be aware of not only invisible biological threats, but the very real cyber ones, too.

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

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

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

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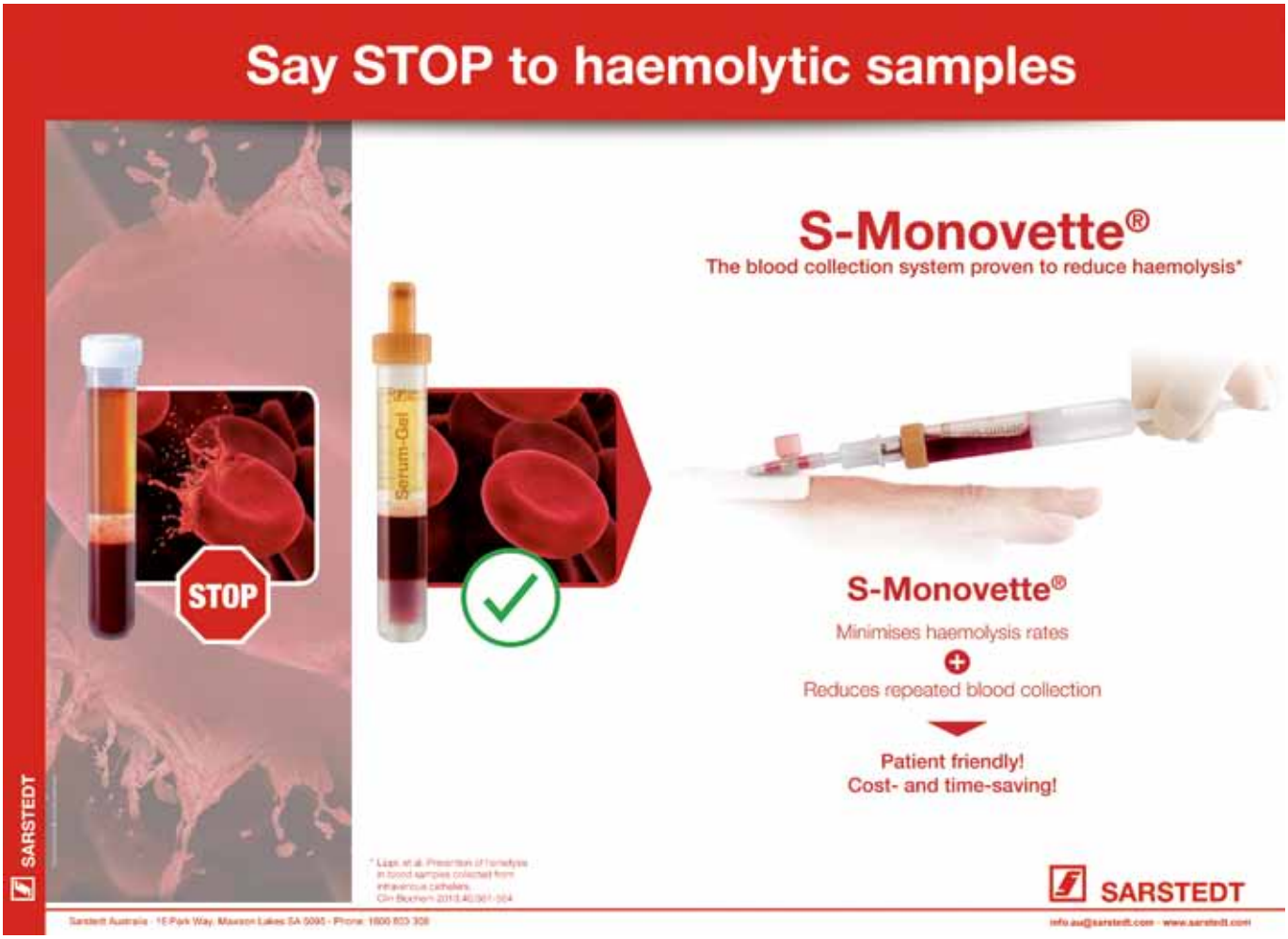

Leading the digital health transformation

The framework enabling the digital capabilities of nurses and midwives

Jane Allman

2020 — Year of the Nurse and Midwife — was intended to be a global celebration of the critical and central role nurses and midwives play in health care. But a global pandemic saw celebration plans put on ice, as Australia's largest healthcare workforce instead worked tirelessly in gruelling and unprecedented circumstances to fight for the lives of their patients.

Although celebratory plans were shelved, the value of nurses and midwives in our communities was brought into sharp focus — perhaps even more so than ever before. Frontline healthcare professionals, nurses and midwives have and are playing a leading role in Australia's fight against the COVID-19 pandemic.

Nurses and midwives have been using technology to care for their patients for many years, but with the recent rapid expansion of technology in health care, the focus is on empowering nurses and midwives to lead the digital transformation of the health system.

The National Nursing and Midwifery Digital Health Capability Framework — developed by nurses and midwives in collaboration with the Australian Digital Health Agency, the Australasian Institute of Digital Health, and peak nursing bodies and leaders — helps nurses and midwives assess their digital capabilities and pursue professional development if needed.

The Framework highlights the specific skills and capabilities necessary to deliver contemporary care, focusing on digital professionalism; leadership and advocacy; data and information quality; information-enabled care; and technology.

The Framework follows the introduction of the National Digital Health Workforce and Education Roadmap, designed to help the Australian health workforce use technology and further drive the digital transformation of health services to meet community demand.

Chief Clinical Officer of the Australian Digital Health Agency Angela Ryan explained that the success of the Framework is evident from the interest expressed by international groups, who are seeking to adopt similar strategies in their own countries.

"We've had international engagement on how to interact with the nursing and midwifery workforce.

"Our next step is to implement the framework and put it to work in a variety of settings. One example is the Agency's work with Queensland's Emerald community to connect healthcare providers to My Health Record and provide associated training that will benefit the community.

"As part of the Communities of Excellence Program, Emerald is being used as a model for building digital health communities across Australia."

Angela Ryan spoke to *Hospital + Healthcare* about the importance of the Framework and the impact it will have on the digital and leadership capabilities of nurses and midwives in Australia.

Angela Ryan

Advocating the nursing voice

Jane Allman

Nurses are celebrated across the world — revered and credited for their dedication, stamina, resilience and compassion towards all who come into their care. Yet, historically, nurses have not had a place at the decision-making table when it comes to health policies and planning.

The Australian Digital Health Agency's (ADHA) Chief Clinical Information Officer, Angela Ryan, is passionate about the leadership capabilities of women in health care. She wants to see nurses at the centre of the decision-making table, informing policies and making important decisions.

With more than 30 years' experience in hospitals and public sector organisations, including more than 14 years' experience as a registered nurse, Angela is a founding Fellow and Vice Chair of the recently established Australasian Institute of Digital Health, and President of the (former) Australasian College of Health Informatics (ACHI). In 2020, Angela presided over the merger of the ACHI and the Health Informatics Society of Australia into the Australasian Institute of Digital Health.

"It's been a bit of a journey to position nurses front and centre at the decision-making table," Angela said.

"Being the largest component of the health workforce, we have a lot to offer and some unique insights into advocating the patient perspective, among many other things. We've had some work to do over the years shifting the mindset that there is real value in supporting nursing leadership where decisions are made, and we can thank the many nursing and midwifery organisations and individuals who have contributed to this evolution; in particular, the Australian Nursing & Midwifery Federation, the Australian College of Nurses, the Australian College of Midwives, and the many Chief Nursing and Midwifery Officers across the country speaking on behalf of nurses and midwives everywhere.

"It's also worth highlighting the contribution other organisations have made and, in particular, the Australasian Institute of Digital Health, which has valued and promoted the importance of the nursing voice in the work that they do."

Angela anticipates that the National Nursing and Midwifery Digital Health Capability Framework will have a significant impact on facilitating nurses' transition into leadership positions.

"This is the first time we have been able to provide nurses and midwives with the ability to assess their knowledge and skills in regard to digital health. The framework can be used to identify learning and developmental needs or inform personal and professional development plans relevant to their current or future workplace or role. It can be used to develop tools to assist in extending the digital health capabilities and will provide direction for career advancement planning in digital health or other nursing and midwifery specialties."

A path to leadership in digital health

Angela began her career as a registered nurse, specialising in paediatric and adult intensive care. A move to the Royal Prince Alfred Hospital's ICU saw her move quickly into the role of CIS Manager with only basic experience of the system. It wasn't until later that Angela completed formal qualifications in digital health — a Graduate Diploma in Health Informatics (eHealth).

During her time at the RPAH, Angela managed the expansion of the CIS from the then 12-bed ICU to a 54-bed ICU 'hot floor'— co-locating the general ICU beds alongside cardiothoracic and neurosurgical beds into a new wing in the hospital, with hundreds of nurses and medical, allied health care and administrative workers.

"We established a research partnership with the University of Sydney School of IT, testing machine learning techniques including natural language processing across the ICU data to derive reports for analytics and research," Angela explained.

Angela shifted to health policy in 2010, managing telehealth services for NSW Health, which saw innovative reform programs delivered across the state. From here, Angela managed statewide clinical information system programs, delivering an intensive care solution across the state.

"I was engaged in the formal establishment of the eHealth NSW strategic advisory and design governance and assurance functions for the Office of the CCIO, ensuring safety, quality and usability are at the core of all clinical systems and powered through clinical engagement and adoption."

Working in the digital health space

Despite the many highlights that a career in digital health provides, Angela described the growing acknowledgement of 'digital' as fundamental to the way health care is delivered as being a standout.

"It used to be seen as a niche industry but this has well and truly changed — and of course the onset of the pandemic has very much brought digital into even sharper focus," she said.

When considering the main challenges to health care in the coming years, Angela points to rising complex and chronic healthcare needs, ever-constraining fiscal environments and the need to continue to do more with less.

"Nurses and midwives are growing more scarce and we need to radically rethink the way the workforce can participate in the delivery of health care. Digital first must be our overarching premise — it's the only way we'll ever reach a person-centric system that puts all Australians first."

"This is the first time we have been able to provide nurses and midwives with the ability to assess their knowledge and skills in regard to digital health."

Research informing practice

In 2017, Angela was awarded a Churchill Fellowship in the area of digital health safety governance. This saw her travel within the UK, USA and Canada to research strategies ensuring patient safety. The report is available at https://www.churchilltrust.com.au/fellow/angela-ryan-nsw-2017/.

"Research has shown that better coordination of digital health safety governance can improve patient safety and prevent patient harm.

"In 2018, I travelled to England, Canada and the United States to interview clinicians, researchers, policymakers and industry stakeholders with expertise in digital health and patient safety, to understand lessons learned associated with the design, development, deployment and surveillance of digital tools and technologies. I met with dozens of these professionals who kindly gave me their time and shared their learnings with me.

"My key takeaways: safety is everybody's business and should be a shared responsibility; we need to strive for learning healthcare systems; digital health safety shouldn't be seen as a standalone issue; we should be utilising existing policy, regulatory and legislative instruments more efficiently; patient safety measures should be adopted now; we need to strive for greater openness and transparency; we must better support the workforce in health; and health care is a complex adaptive system — and we must never lose sight of this. I continue to work to ensure these findings underpin everything that I do."

Image credit: Whiddon

Enabling aged care with technological innovation

Award-winning aged-care provider Whiddon employs more than 2700 staff, caring for more than 2100 older Australians in regional and rural NSW and Queensland. Via residential, community and retirement living services across 26 geographic locations, Whiddon provides holistic care and wellbeing, helping residents to stay active, connected and feeling part of the community. To achieve this goal, Whiddon sees a huge role for technology.

The organisation has faced several challenges: difficulty attracting new and younger staff; an overall reduction in technology investment due to the significant challenges regarding industry funding models, with the majority of rural, regional and remote providers operating at a loss; industry-wide lack of technological maturity and digital literacy; and ageing IT infrastructure that has inhibited Whiddon's digital ambitions.

A 2020 aged-care financial performance report by StewartBrown found that, excluding the impact of one-off government grants, more than 50% of residential aged-care providers operated at a loss in the last financial year, rising to 66% in regional areas.

"We're probably the only industry still reliant on the fax machine," said Regan Stathers, Executive General Manager of Technology and Property at Whiddon.

"Whiddon has always tried to focus on digital enablement, but it's a difficult time for the industry. Technology investment is not seen as a priority and other stakeholders lag behind in digital maturity and dexterity. It became an issue in attracting new, digital natives to the profession, which we desperately need."

A cloud-based solution

Whiddon decided to overhaul its IT infrastructure to create a platform that would help futureproof its business and tackle challenges head on, evaluating a range of options including traditional data centres and public cloud.

Primarily due to its efficiency, scalability and security — alongside trusted IT partner Communications Design & Management — Whiddon selected Nutanix hyperconverged infrastructure.

Nutanix now runs all of Whiddon's core applications and has enabled increased scalability and integration. Processes that once required two hours have been reduced to about 30 seconds, helping to enable the IT team to focus on technical projects that can improve resident care, deploy modern applications new staff would expect and achieve greater business performance.

Whiddon's ICT team has also reduced its power consumption by about 50% compared with its previous infrastructure, allowing the team to redirect much-needed funds to frontline services.

The Royal Commission and changing attitudes

The modernisation of Whiddon's IT and business environment comes at a crucial time for the industry as it emerges from the COVID-19 pandemic and the Royal Commission into Aged Care Quality and Safety draws to a close. The Aged Care Industry Information Technology Council (ACIITC) has created the Technology Roadmap for Aged Care in Australia, which Whiddon hopes will change attitudes to technology in the sector.

"There is a huge opportunity to change the industry's mindset towards technology from an expense to an investment," Stathers said.

"We need to create an environment where we can see where customers are on their journeys and have the right data in the right place at the right time to provide optimum care.

"Technology and innovation at an industry-wide level can help improve care for our elderly, attract new talent, reskill existing staff and help adapt the sector to meet the needs of tomorrow."

To reinforce the point, In December 2019, the Australian Medical Association (AMA) released a position paper highlighting that innovation and technology must be at the core of any reforms to improve the levels of care, compassion and coordination in Australia's aged-care sector.

Nutanix Managing Director of Australia and New Zealand Lee Thompson said, "Whiddon is disrupting the status quo, showing the true value of digital transformation in traditional industries and setting a benchmark for the industry to follow.

"Affordable and flexible technology like hybrid cloud has the ability to unleash a new wave of innovation and untapped potential in the aged-care sector and pioneers like Whiddon, along with its residents, look set to reap the early benefits."

Whiddon is just one of a number of companies and government agencies that have switched to hybrid cloud and hyperconverged infrastructure in efforts to increase efficiency and productivity while enhancing frontline customer services.

Performing CPR During COVID-19

You can still help a victim of sudden cardiac arrest (SCA) during the COVID-19 pandemic. Keep yourself safe and help save a life by performing hands-only CPR.

Step 1

Call emergency services.

Step 2

Cover your own mouth and nose with a face mask or cloth and also cover the victim's mouth and nose, if possible.

Step 3

Perform hands-only CPR. Push hard and fast on the center of the chest at the rate of 100 to 120 compressions per minute and to a depth of at least 5 centimeters.

Step 4

Use an automated external defibrillator (AED) as soon as it is available.

Step 5

Thoroughly wash your hands or disinfect with hand sanitiser after assisting with rescue.

ZOLL Medical Australia • St Leonards, NSW • 1800 605 555 • www.zoll.com.au

ZOLL

Featured Products

Keep up with the latest industry innovations

Safety eye shield

Bollé Safety's 'Ninka' protective eyewear is specifically designed for the healthcare and service industries, for use where there are dangers associated with splashes and droplets.

Ninka provides effective protection from splashes and droplets as well as a physical barrier while remaining lightweight and comfortable. With ergonomic 'TIPGRIP' temples that don't have pressure points, the wearer is assured of comfort and a secure fit over periods of long use. The 23 x 7 cm lens is quickly and simply replaced and has a protective film on both sides that has to be removed before use. The lens is accompanied by an upper frame featuring an extra protection lip, which ensures enclosure at brow level for extra coverage. A cost-effective product, Ninka comes in a range of package sizes. Lenses and frames can be purchased separately.

The product is listed in ARTG, No 337956. The product is not intended to be used against mechanical hazards. Always read and follow the instructions for use.

Bolle Safety AU Pty Ltd
www.bollesafety.com.au

Antimicrobial bathroom products

Con-Serv has partnered with Biomaster to introduce a range of antimicrobial products, including showerheads, shower hoses, sliders and aerators.

Fixtures such as shower handpieces, hoses and sliders in healthcare facilities can become contaminated with pathogens that form biofilms, which allow organisms to persist for long periods of time, threatening the safety of patients and spreading antibiotic-resistant pathogens and healthcare-associated infections (HAIs).

To assist with reducing the spread of this harmful bacteria, Con-Serv has developed a healthcare range where Biomaster Antimicrobial Protection additives have been infused into the product material during the manufacturing process. These additives work to attack the bacteria cell wall, interrupt cell metabolism and prevent bacteria reproduction, extending the products' hygienic properties and minimising the potential of cross-contamination.

Independently tested in working applications, Con-Serv Antimicrobial bathroom fittings have proven to inhibit the growth of these harmful bacteria, providing effective and long-lasting antibacterial protection.

Con-Serv
www.con-serv.com.au

Mobile power module

The GeniTec Power System from Bytec Healthcare is designed to integrate with Bytec's range of carts and can serve as a cross-platform standalone power system throughout the healthcare environment. The system can be used to supplement existing backup systems, provide uninterrupted power supply or to mobilise otherwise static equipment. With one of the highest capacity power modules on the market, allowing for extended use times between charge, the 1000+ cycles guarantee allows for significant workflow and lifetime cost advantages.

Every power module and dock device provides data logging and integration into new cloud technology and IoT infrastructures.

Production logs are maintained in both the power module and dock device, which provide timely alerts and maintenance warnings through on-device indicators and audible alerts, allowing the system to respond to situations without any connectivity.

Connected by USB to a PC platform, information is collected on PC storage and can be synchronised with a cloud-based platform. The GeniView app, with an always-on-top widget, provides a convenient screen-based user experience.

Cloud-based asset and monitoring platforms provide IT departments with a centralised view of the deployed estate for preventative and proactive maintenance and fault resolution. Users can also get connected with a notification alert system to further enhance the experience if required.

The product is available from Tekdis.

Tekdis
www.tekdis.com.au

For more details on these featured products, and more, go to **www.hospitalhealth.com.au/products**

Specimen bags

Harcor's printed, clear-coloured specimen bags are compartmentalised to prevent cross infection during transportation of specimens to the laboratory for testing.

The three-layered LOPE bags are 45 µm thick, 155 mm wide x 250 mm high and feature press-top closure.

Custom printing, sizing and colour options are available to suit specific requirements.

The carton quantity is 2000 bags.

Harcor
www.harcor.com.au

Limited-edition scrubs

NNT Uniforms' scrubs are designed to stand up to tough jobs, while providing comfort for long shifts. The scrubs are durable through hot washes and can unite teams for the incredibly important work that they do.

NNT Uniforms has created a limited-edition range of scrubs, embroidered with a specially designed logo celebrating our nurses and midwives in honour of the 200th anniversary of Florence Nightingale and the Year of the Nurse 2020. It is hoped the distinct Lavender unisex scrub top will encourage conversations with patients and visitors about the significance of the year 2020, and the dedication required to work in these roles.

Features of the unisex scrub top include: short sleeve, v-neckline, two front pockets, left-hand-side chest pocket, side splits and an easy-care fabric made from 65% polyester 35% cotton.

The limited-edition celebration range is currently on sale.

NNT Uniforms
www.nnt.com.au

Addressing the unique allied health needs of those in residential aged care

Ed Johnson, Clinical Innovation Officer at Umbo

The Royal Commission into Aged Care Quality and Safety is nearing its end. With 124 recommendations tabled for discussion by the Commission in November of last year, the final report is due in February 2021. So what will we see in the final recommendations, and how can we work within those recommendations in order to ensure safe and high-quality care for our older Australians?

2020 presented a unique set of circumstances for older Australians living in residential aged-care facilities and accessing in-home aged care. The pandemic has highlighted the challenges in staying connected with our loved ones, and it's shown us the hard work and commitment of nursing and care staff working in the aged-care industry.

Early in the year we saw the devastating effects of an outbreak of the SARS-CoV-2 virus in Newmarch House in Western Sydney. Staff scrambled to source PPE and organise testing equipment, while family members desperately tried to contact their loved ones — staff members risked their lives every time they turned up for a shift. Until 2019, Newmarch House was my grandmother's home. She was loved and cared for by staff with an overwhelming sense of compassion and duty — many of the same staff who faced the April outbreak. Our family is eternally grateful for the care they showed our beloved matriarch in her twilight years.

These staff didn't just show their mettle during the outbreak, but I have firsthand experience of their skill and dedication over several years of knowing them. They love their work and care deeply for each person to whom they offer support. But the Royal Commission has shown us that the system in which they work is no longer fit for purpose, and we require changes in legislation, policy and community attitude towards the duty of care we have for our elders. We owe it to our elders and these workers.

The Interim Recommendations have started to spell out these needs and practical strategies to address them. For a start, we need to recognise the individual needs of each person in aged care, and to be able to attract and retain a workforce that is appropriately remunerated, trained and valued. The Royal Commission's recommendation for the establishment of an independent Aged Care Commission could go a long way to achieving these goals.

We also need to recognise the changing demographics of our nation. We are an ageing population, and we need to be proactive and creative in supporting ageing Australians as they comprise a larger and larger portion of our people. The traditional model of residential care is becoming more and more difficult to staff and administer. With a different approach — one that keeps people in their own homes for as long as possible, remaining active in their communities — we can potentially reduce the burden on an overstrained system.

Allied health professionals have an important part to play in such a system. Our unique value-add is not necessarily nursing people through illness or ageing, and it's not administering vaccines or medicines. It's helping people to improve or maintain quality of life. This should be a key part of our aged-care system — physiotherapists keeping people mobile; occupational therapists enabling people to cook, wash and clean independently for longer; and speech pathologists helping people to stay connected with social circles and family.

Overall, what is needed (and what seems likely based on the Interim Report) is better dialogue between the consumer and the provider, and safeguards to ensure a high quality of care and control for older people and their families. We need to make better use of our allied health professionals as people who can help keep our family members independent and engaged in community for longer.

When the Final Report is handed down, we may look forward to the establishment of an Aged Care Commission, which is an excellent chance for us to reimagine our aged-care system as an efficient, person-centred and well-respected industry that recognises the value of allied health in its ongoing effectiveness in the context of an ageing population.

Hospital-grade disinfectant

Viraclean from Whiteley is a hospital-grade, hard surface disinfectant proven to kill a wide range of bacteria and viruses, including SARS-CoV-2 (the virus that causes COVID-19).

Manufactured in Australia, Viraclean is the result of years of intensive research into advanced cleaning and disinfecting technology from Whiteley. The product is ready to use, with a pleasant fragrance. It is pH neutral with good materials compatibility.

Viraclean has been proven to kill: *Acinetobacter*, *Candida albicans*, Coronaviruses including SARS-CoV-2, *Enterococcus faecalis* (VRE), *Escherichia coli* (*E. coli*), Hepatitis B Group virus, Herpes Simplex virus, Influenza virus, *Klebsiella pneumoniae* (CPE/CRE), *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Salmonella choleraesuis* and *Staphylococcus aureus* (MRSA or Golden Staph).

Effective surface cleaning, particularly of high-touch areas, such as door handles and benchtops, combined with good hand hygiene will assist in protecting staff and patients as we move into the winter months and a higher incidence of colds and flu.

Whiteley
www.whiteley.com.au

Security bags

Harcor's range of security bags is designed for the sanitary storage and transportation of medical records, medicines and equipment. The bags are durable, reusable and provide tamper evidence, with an internally accessed window for quick identification. The PVC material construction makes them easy to clean.

Hospitals have their own protocols and uses for security bags. Bags that have not been sealed could indicate that the medicine or equipment contained within requires restocking, inspection or cleaning. The internally accessed window is often used to show the contents. Certain bag colours and styles can be used to represent specific kits for faster identification.

The reusable security bags are secured by inserting a tamper-evident seal into a security chamber. Access is gained by breaking this seal, allowing the bag to be reused.

The patented bag-sealing system was designed in Australia and has been adopted worldwide.

Harcor
www.harcor.com.au

Nicole Evans, a nurse on the acute ward.

Vocera rollout revolutionises regional health service security and comms

ICT experts at Bairnsdale Regional Health Services (BRHS) wanted to improve security and communication systems across the health service, including their aged-care facility.

"Prior to Vocera, our aged-care facility was working with two wireless IT phones, which were carried by the Nurse in Charge and Co-ordinator," BRHS ICT Manager Peter Binding explained.

"Everyone else had to get themselves to a fixed line or physically go looking for someone — a frustrating and time-consuming process that diverts nurses' time away from their patients."

Binding explained that when he came across Vocera's solution, he felt it would be a good fit for BRHS's needs.

"We were looking to improve communication, security and duress infrastructure management across the health service, including aged care.

"With Vocera, staff are assigned badges, which have a duress feature for use in an emergency, making staff feel safer while working — but the real buzz for the staff is the ability to instantly communicate with other staff members.

"The instant communication ability prevents a lot of stress and time wastage on our healthcare workers. Instead of having to physically search for a particular staff member, they just contact them instantly with the push of a button."

Clinical management also find the ability to broadcast messages to their teams a great time saver, and the system helps them physically locate a staff member through badge tracking.

Positive reviews of Vocera among aged-care staff meant that soon, staff in the acute wards wanted to use the technology. This began a general rollout of Vocera across the different services that make up BRHS.

Staff find that the system improves workflows, facilitates stress-free communication and heightens feelings of safety while at work.

Infection control benefits

Binding explained that the infection control benefits of Vocera really came into their own during the COVID-19 pandemic, as the Vocera system can be enabled by pressing the button through PPE — everything else is voice activated.

The Vocera rollout at BRHS is still ongoing, with allied health set to see the new technology implemented in their department soon. This will assist with their work when communicating with the rehabilitation ward.

"Vocera will be rolled out across the whole health service, from our acute wards right down to our smaller dialysis unit," Binding said.

Nurse call

Also ongoing is a project to integrate Vocera with the various nurse call systems throughout the health service, starting in aged care and then across the acute and non-acute wards.

When discussing barriers to implementing a system such as Vocera, Binding said that resistance to change was a major hurdle.

"The biggest issue is getting it into people's minds that they can now use technology to make their lives easier. They don't have to walk around the 90-bed aged-care facility or the hospital wards to find someone, they can just say 'Hey, Vocera,' and immediately contact whoever they need to.

"Having a progressive, forward-thinking management team is also essential to embrace change and allow these innovative projects to go ahead.

"A gradual implementation has worked for us as it allows people to get used to a new way of working. Change takes time."

Diverse paths towards future-focused design

James Kelly

Holistic design is a powerful tool for change as our industry tackles negative perceptions about seniors' communities and aged care arising from the pandemic and the Royal Commission. James Kelly, Senior Living and Care Partner at ClarkeHopkinsClarke Architects, shared at LASA Congress 2020 two very different, site- and community-specific projects that embrace residents' diversity, defy ageist stereotypes, and embed community connection and sense of place.

Taking narrative cues from location — The Bays, Hastings

Good architects approach design as a form of storytelling and create built form that captures the essence of people, place and local character. Of course, there are many ways to accomplish this. Meaningful stakeholder engagement is crucial in understanding clients' and users' needs. Varied spaces that draw people in and give them agency to use in different ways encourage residents and staff to express their personalities, passions and values through the ways they use space. Taking narrative cues from location is critical in establishing a genuine sense of place and connection to the broader community.

When we were asked to design a new residential aged-care facility and community health precinct for The Bays Healthcare Group in Hastings, Victoria, we looked to the distinctive local area as the basis for conversations about the building's appearance and its connection to the town. The Bays is located in a suburban area of Hastings, a town with a strong connection to Western Port Bay and therefore wonderful views and strong design narrative potential.

Our design team drew on the site's location with a design story inspired by the sea, local industry and the tidal wetlands in between. Architecturally, these elements created a concept of striations, which led to conversations about colour and tone based around the natural environment. It also inspired materials selection and some quite sculptural architectural detailing that help convey design intent.

Wetlands-style boardwalks are a subtle reference to the surrounding wetlands environment. Metal cladding sourced from a nearby factory distinguishes the entry and public zone with materials that celebrate local industry. Timber-look elements on the residential wings soften the entry and provide a consistent tonal response that picks up on the colouration and movement in the sands of the wetlands. The result is built form that's distinct but fits comfortably into its streetscape and broader coastal setting.

Walking and cycling paths at Mayflower invite locals in on their way to the local park.

Narratives from local residents were important, too. They allowed us to embed a lovely ritual from the existing facility into the new facility. Each morning a group would meet under a covered veranda near the entrance to chat, welcome visitors, enjoy the outdoors and take in all the activity in and around the nearby primary school. To celebrate this tradition in the new design, we created a welcoming viewing room and deck with fantastic views. Residents can now sit inside or out to continue a ritual that speaks volumes about who they are and what matters most to them.

Strengthening connections with surrounding communities — Mayflower, Keilor

Future-focused designers always look for opportunities to strengthen connections with surrounding communities. At ClarkeHopkinsClarke our practice philosophy is to impact tomorrow through design that's sustainable socially, environmentally and financially. To that end we've developed a methodology and book called *Creating Vibrant Communities*, published by my colleague Dean Landy, our Mixed Use and Urban Design Partner. The methodology helps us capture the tangible and intangible elements that make places exceptional for clients, users and neighbourhoods alike. As a practice we use the methodology as a bespoke tool for analysing and creating projects that have higher value than the sum of their parts.

Figure 1 shows the elements we include or respond to within any development. These can be scaled from the smallest project to the largest. Broadly they are categorised as hard and soft.

Hard elements are the tangible ones: the mix of uses that deliver a sense of vibrancy and place. Think Community, Retail and Health.

Good architects approach design as a form of storytelling and create built form that captures the essence of people, place and local character.

Soft elements are the intangibles: the elements that bring someone comfort or create a sense of identity or intrigue. Think Place, Connection and Safety.

Here's how we translate this methodology into a design outcome, using the example of a project currently on the drawing board in our office.

Mayflower is a seniors' living and aged-care community located on an old school site in Keilor, in Melbourne's north-west. We began our conversations about what a vibrant community might look like here by analysing the broader community to which our design intervention will be added.

Figure 2 shows our analysis of the hard elements surrounding this site. There is a town centre some distance away. But close by, only the old school itself and a park to the east are currently meeting the community's need for shared space where people can come together, socialise, exercise and interact. This guided our conversations with the client about refining the brief and designing an asset the local community could access and enjoy.

We began with the soft elements. The community park to the east of our site became a core component of the design. We added fitness trails, walking paths and covered ways to the park, designing this facility as an ungated community that we're inviting locals to walk through and engage with on their way to the council park. We've also created indoor and outdoor spaces designed to bring Mayflower residents, visitors and the broader community together, including a community garden, cafe and town square.

In terms of hard elements we've captured as many as possible from our ideal mix: dwellings, public realm improvements including recreation spaces, health care in the provision of high-care aged care, community assets and retail uses. At its core this design creates spaces and reasons for new and existing community members to come together, share their diverse interests and stories, and thrive.

These case studies were first presented at LASA's Ten Days of Congress in James Kelly's how-to session for non-designers: Designing for Community, Connection and Sense of Place.

James Kelly is a Partner at ClarkeHopkinsClarke Architects, where he leads the Seniors Living & Care Sector. His team champions considered, holistic design and intergenerational communities offering diverse choices, higher quality and stronger community connections for seniors at all stages of life.

Getting to know your disinfectants

For general and high-risk environments

In the marketplace today, there are many types of disinfectants available. Whilst many are similar in what they offer, they do have some differences and it is important to choose the products that best meet your needs. It is important to check their ARTG listing which verifies what they can claim and the MSDS to ensure suitability to your environment. Another factor to consider is the different formats the products come in to ensure that you are minimising cross-over of products which can reduce their effectiveness. Always check required kill times, whether they work in dirty conditions and dilutions as these may vary greatly from product to product.

Below is a chart demonstrating the different types of products available.

Keeping it simple

Simplify your training as well as your protocols, S-7XTRA provides you with the best all-around and lasting protection against pathogens and is friendly and easy to use.

Working in dirty conditions and not requiring wet contact times, it simplifies your training and saves on time with added protection in between cleaning cycles. It comes in varying formats to ensure continuity and to maximise efficacy. Concentrates provide flexibility and are amazingly simple to dilute and when diluted make the product very economical. Ready to use solutions give certainty of use and come in various sizes and wipes come in canisters and soft packs — two formats to suit all applications.

Our solutions are proudly made in Australia.

Contact us for a free trial.

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		S-7XTRA	70% Alcohol	Chlorine Based	Iodophors	Phenolic	Quaternary Ammonium Compounds (QUATS) - Single and double actives	Accelerated hydrogen Peroxide	Botanical - Plant Based
	Efficacy Capabilities - Check ARTG listings								
Hieriachy of Pathogens	Some viruses – includes enveloped viruses such as SARS Cov-2 COVID19	✓	✓	✓	✓	✓	✓	✓	✓
	Bacteria	✓	✓	✓	✓	✓	✓	✓	✓
	All other viruses - inclusive of enveloped and non-enveloped	✓	x	x	✓	x	x	✓	x
	Mould	✓	x	✓	x	x	x	x	x
	Fungi/Yeast	✓	✓	✓	✓	✓	✓	x	x
	Tuberculosis	✓	✓	x	✓	✓	x	✓	x
	Spores	✓	x	✓	x	x	x	✓	x
	Wet Contact Times - Check manufacturer's instructions for kills times	NO	YES	YES	YES	YES	SOME	YES	YES
	Residual Activity	YES	NO	NO	NO	NO	SOME	NO	SOME
	Pre-clean of surfaces must be performed	NO	YES	YES	YES	YES	NO	NO	YES
	Pre-Clean Recommended for Best Practice	NO					YES	YES	
	Works in Dirty conditions	YES	NO	SOME	NO	NO	YES	YES	NO
	Rinsing required	NO	NO	SOME	NO	SOME	SOME	SOME	NO
	Disadvantages	Damaging to aquatic life in concentrated form only.	Flammable, Storage limitations, evaporates quickly and contact time can be insufficient for killing	Corrodes some metals, unpleasant odour, long contact times, requires good ventilation, eye, skin and respiratory irritant	Dilution is critical for effectiveness and safety, may stain or corrode metal, may stain skin/laundry, odour, toxic	Do not use on infant equipment, odour, flammable, skin, and eye irritant, corrosive, toxic	Limited efficacy, damage can be caused on surfaces and skin if in high concentrations.	Limited efficacy	Limited efficacy

Finding a path to improve

Indigenous workforce and healthcare outcomes

Jane Allman

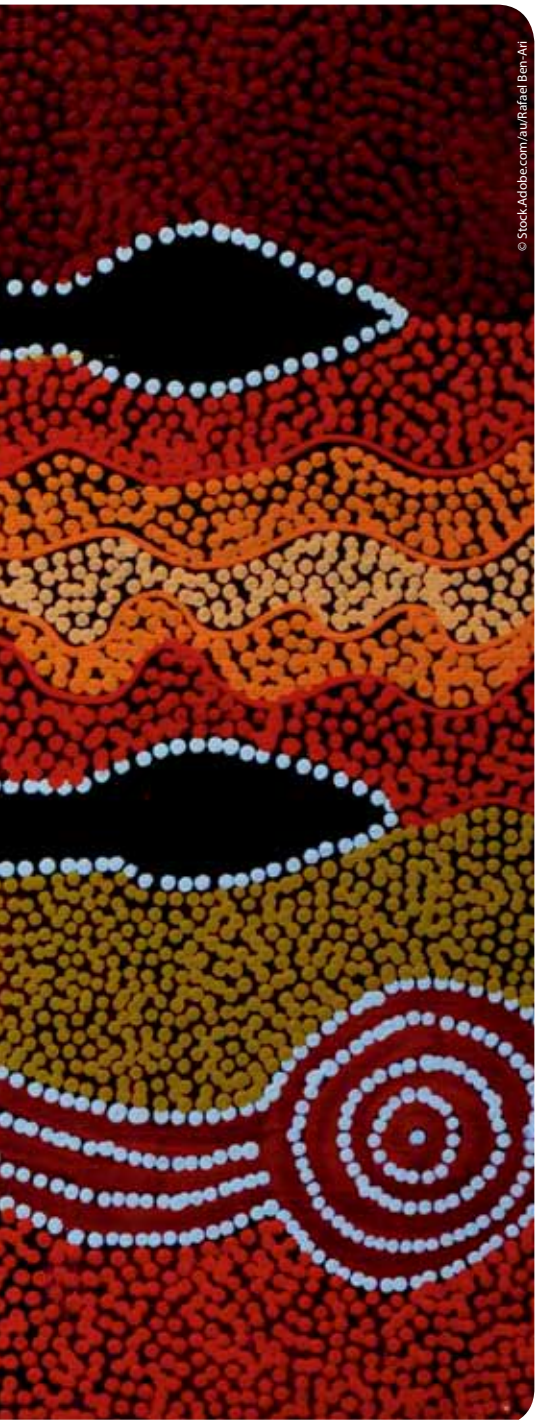
A study of two exemplary cancer services has found eight key factors helping to improve Indigenous patient and staff outcomes.

The study — a component of research within the DISCOVER-TT* CRE and published in PLOS ONE — investigated Indigenous workforce policies and strategies at two high-performing Australian health services (the Urban Service and the Regional Service) to inform innovative services for Indigenous cancer patients and their families. The services were identified in a national study as particularly high performing in their provision of cancer services for Indigenous cancer patients and their families.

In-depth interviews of Indigenous and non-Indigenous hospital staff, Indigenous cancer patients and their family members revealed eight core themes successfully supporting the Indigenous workforce:

1. Strong executive leadership.
2. A proactive employment strategy.
3. The existence of an Indigenous Health Unit.
4. The role of the Indigenous Liaison Office (ILO).
5. Multidisciplinary team inclusion, including ILO participation.
6. Availability of professional development.
7. A supportive work environment.
8. A culture of respect.

Improved Indigenous patient outcomes and improved Indigenous staff outcomes were reported where these eight factors were implemented.



"Many health services report difficulties recruiting and retaining Aboriginal and Torres Strait Islander staff. But we know that Indigenous staff improve outcomes for Indigenous patients as well as providing support for non-Indigenous staff," said lead author Emma Taylor from the Western Australian Centre for Rural Health (WACRH) at the University of Western Australia.

"These exemplary cancer services and their affiliated hospitals show how positive patient outcomes and a strong Indigenous health workforce can be achieved when a health service has strong leadership, commits to an inclusive and enabling culture, facilitates two-way learning and develops specific support structures appropriate for Indigenous staff," the authors wrote.

Within these services, the ILO role is a valued and respected role within the multidisciplinary team and is seen as a linchpin that helps to coordinate care and 'join the dots' between patients, their families, staff and the community.

"It is hoped that the strategies captured in this study will be used by health services and cancer services to inform their own policies and programs to support building their Indigenous workforce."

The authors explained that although many Aboriginal and Torres Strait Islander people enjoy good health, health outcomes between Indigenous and non-Indigenous Australians remain disparate across a wide range of diseases, including cancer. They also highlighted that, despite reductions in the Indigenous mortality rate from chronic diseases, the gap in cancer mortality rates is widening.

Executive leadership

The researchers noted that the executive team at both health services had a strong commitment to improving Indigenous health outcomes, strengthening the cultural safety of their services and to supporting and growing their Indigenous workforce. Both services have made commitments to improving Indigenous health on their strategic plans and both actively implement their hospital's Reconciliation Action Plan (RAP).

Employment strategy

Compared with most other hospitals included in the initial survey of cancer services, the two high-performing services employ a large number of Indigenous staff, with some working in identified Indigenous roles.

As at February 2020, the Urban Service employed 52 Indigenous staff (0.9% of the total workforce) and the Regional Service employed 241 Indigenous staff (3.7% of the total workforce). Both services have specific and measurable targets set for the employment of Indigenous staff. In addition, the Urban Service has recently implemented a cultural leave policy, which provides Indigenous staff with access to four days' cultural and ceremonial leave.

ILOs are valued and respected team members

Both health services have an Indigenous-led Indigenous Health Unit, which is responsible for managing the ILOs, supporting Indigenous staff, designing and delivering cultural awareness training and quality improvement. Significantly, both of the units feel that they are afforded enough autonomy and independence to ensure that what they do is Indigenous led.

The services operate centrally managed Indigenous teams, with the unit providing managerial and cultural support for staff, as well as Indigenous colleagues with whom they can network and debrief, and allowing for work to be allocated across the team, which helps prevent staff from being overworked.

Within these services, the ILO role is a valued and respected role within the multidisciplinary team and is seen as a linchpin that helps to coordinate care and 'join the dots' between patients, their families, staff and the community. The ILO is described as having 'automatic' involvement with any Indigenous patient, acting as an advocate to ensure their wishes are communicated and upheld. System functionality helps with workload allocation and ensures that no patients are missed.

One patient commented, "I have really appreciated the support I've received from the Aboriginal liaison officer... they have gone above and beyond what they have to do just to make sure I'm right. Without their support I don't know where and what head space I would be in. I probably wouldn't even still be in hospital. They have done all they can to keep me here and, yeah, I probably would have done a runner and gone back to [town] by now if it wasn't for their support and understanding."

ILOs bring a cultural safety component to care situations and are consulted by doctors and other healthcare staff when discussing patients.

Managers and patients at the Urban Service said that ILOs increased treatment compliance and reduced the rate of discharge against medical advice.

Indigenous staff increased the cultural safety within the facilities through their presence and interactions with patients, but also through advising non-Indigenous staff.

Professional development and two-way learning is encouraged

The study authors wrote that, "Career development for Indigenous staff was an action item on both Reconciliation Action Plans, with one service aiming to develop career pathways and the other service targeting 100% of all Indigenous staff to develop a career plan with their manager as part of their annual performance plan."

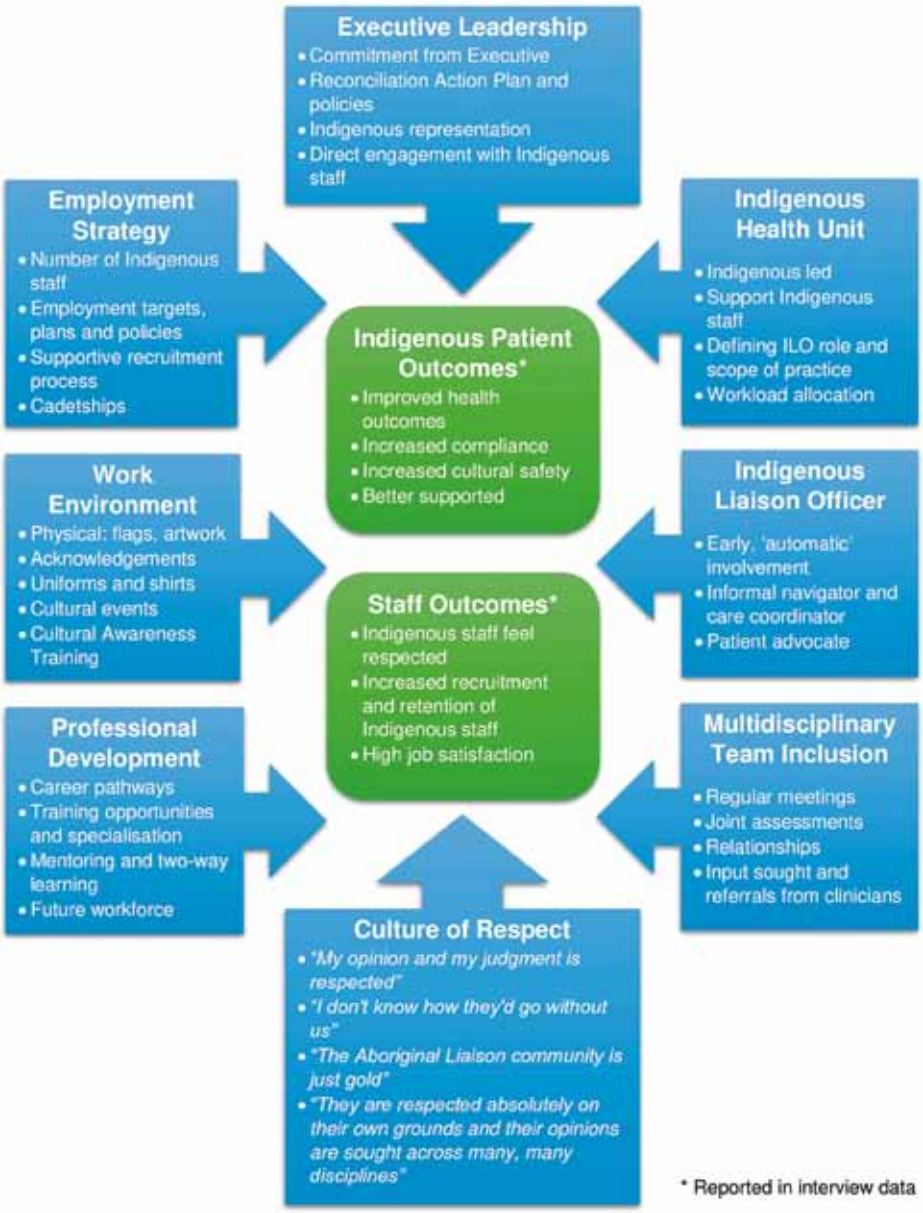
Indigenous staff at the two services are supported to achieve higher qualifications, and ILOs are encouraged to specialise in a particular therapy area to build upon their expertise and help patients with specific needs.

Informal mentoring, clinical placements and specific mentoring for Indigenous students studying medicine, nursing and allied health are also important aspects of staff development.

The Urban Service has established an Indigenous Cadetship Program as well as a Graduate Nursing Program that sits within the Indigenous Health Unit to ensure a culturally safe entry point into the program.

An Indigenous Manager explained, "The idea is to bring Aboriginal students in and give them exposure working in a hospital environment in order to better prepare them for the workplace.

"We are hopeful these cadets come back to us through the graduate nursing program and build a career here. We want to give them exposures so they know what to expect."



"We know that Indigenous staff improve outcomes for Indigenous patients as well as providing support for non-Indigenous staff." — Lead author Emma Taylor.

Culturally safe and respectful work environment

The two services described in the research paper have made significant efforts to develop a culturally safe working environment, with physical representations of respect — including displaying the Aboriginal and Torres Strait Islander flags and artwork created by local Indigenous artists — throughout both hospitals. Acknowledgement of Country is clearly displayed at service entrances and features in all meetings; ILOs have their own uniform to legitimise the role and make them easily identifiable to staff and patients.

Staff are encouraged to participate in events such as Reconciliation Week and NAIDOC week to remove barriers to staff attending cultural events.

Cultural awareness training allows non-Indigenous staff to increase their knowledge and understanding of Indigenous cultures, history and achievements.

"The deep respect felt for Indigenous staff at these services came through strongly in every interview," noted the researchers. This was observed at all levels of the organisations and contributed to Indigenous staff feeling respected and supported.

Indigenous staff outcomes

The health services reported good staff recruitment and retention rates, with each having several long-term Indigenous employees. Indigenous staff members reported feeling satisfied with their jobs as a result of being able to improve outcomes for their community. Non-Indigenous staff recognised the benefits they received from working closely with their Indigenous colleagues in terms of patient outcomes, team morale and improving their understanding of Indigenous Australians and their culture.

Both services are continuing to make improvements and are committed to closing the gap in health outcomes between Indigenous and non-Indigenous Australians.

**DISCOVER-TT CRE, Discovering Indigenous Strategies to improve Cancer Outcomes Via Engagement, Research Translation and Training Centre of Research Excellence.*

This study summary is based on the full paper, which can be found at: https://doi.org/10.1371/journal.pone.0239207.

Investing in video
Six considerations for training and engagement

Video is one of the most effective staff training and engagement tools available. From product education, compliance, employee onboarding, to mental health and well-being, video constantly comes out on top compared with text and image-based training, learning and support.

Below are six considerations when choosing to invest in video as a training or engagement tool:

1. Cost-effective

Using video as a training tool is a cost-effective investment for healthcare organisations. In a highly regulated environment, a strong employee training program will help ensure consistent, high standards of care are delivered. Well-trained and supported staff are likely to be higher performers (making fewer mistakes) and stay longer in their jobs (less turnover and happier employees). Video eliminates the need for specific training days and ensures that everyone gets the same experience.

2. Flexible

With many different styles and variations available, video is a flexible and versatile medium. From animation to live-action video, there are many different ways you can educate and engage your staff.

One of the critical benefits of video is that it can be altered and customised to suit your organisation and adapted in line with changes to your organisations' policies and procedures. It is also worth noting that you can really maximise the potential of your video content by optimising it for cross-platform use.

3. Engaging

When it comes to internal training and staff development, it's vital that your employees are engaged with the content. Engaged employees are more likely to retain information and apply what they have learnt to their role.

Different styles of video can be adopted to ensure maximum engagement and achieve optimal learning outcomes. Real footage with motion graphic overlays are one of the most effective mediums.

4. Retention

Video is far more memorable than text-based content. It is said that people remember only 20% of what they read compared with 80% of what they see and do. It is important to consider that videos can be replayed anytime and anywhere, allowing staff to revert back to the video when needed.

5. Accessible: anytime, anywhere

Training, eLearning, and mental health and well-being videos can be made available to employees to access at anytime, anywhere. As previously mentioned, video overcomes the barriers and costs that can arise when organising specific training days. This has particular relevance in recent times as it allows organisations to effectively train and support their staff without the need for social interaction.

6. Measurable

With text-based learning, there is no way of measuring the success of the content. With video, most platforms offer analytics features allowing you to view stats on how people have interacted with your video content. Information such as viewing duration and average engagement is useful when determining the success of your training program.

If you have any questions or would like to discuss how staff training, development and support videos would fit into your organisation's strategy, please get in touch.

Safely store vaccines, bloods, insulins and medicines

Keeping patients and staff safe in today's high risk environment is more challenging than ever. But there's one area where you can significantly reduce your risk — while saving valuable staff time.

The Australian Commission on Safety and Quality in Health Care imposes strict standards which can be hard for a busy hospital to meet at the best of times. But when it comes to safely managing the storage of temperature-sensitive product like vaccines and medicines, there is a tool that can make life infinitely easier — and safer.

No people, no paper

Under the National Safety and Quality Health Service (NSQHS) Standards (Action 4.14), health organisations must continuously monitor and maintain the integrity of temperature-sensitive medicines. This includes taking regular audits of storage facilities and recording action taken in the event of a cold chain breach or temperature excursion.

But manual temperature recording across multiple units takes time, can be inaccurate and unreliable, and may not always protect against product deterioration or stock loss. It also increases the chances of staff touching contaminated surfaces or paperwork, which is far from ideal in the current pandemic.

Take prompt corrective action with real-time data

A best practice automated temperature monitoring system uses core sensors to wirelessly transmit temperatures across multiple units and sites to the cloud in real-time, where data is securely stored and can be accessed anywhere, anytime.

Sensors are discreetly and securely fitted to refrigeration units, ambient environments and freezers. They should simulate core product temperatures and be calibrated to a safe temperature range for the product being stored. This will safeguard highly sensitive product from freeze damage or overheating.

When a piece of equipment moves out of safe range, an alarm is generated to alert staff, whether they are on or off site. This means staff can identify potential problems early and act fast to relocate stock or arrange equipment maintenance if needed.

Easier auditing and compliance

A digital temperature monitoring system also provides a complete, verified, digital record of how medicines have been stored and how any issues have been dealt with, supporting compliance with NSQHS requirements.

Time is saved from manual retrieval of paper records and instead, staff can quickly run reports from anywhere to satisfy audit requirements — across multiple units, departments and sites.

Chosen by leading health institutions worldwide

Health institutions such as the Monash Health Translation Precinct (MHTP) in Australia and the Royal Liverpool University Hospital in the UK rely on their Monika temperature monitoring system to protect their patients, their staff and their stock.

For these institutions, Monika has improved quality control of valuable perishable products stored throughout their facilities, giving staff the peace of mind — and freeing up more time — to focus on their essential clinical care or research duties.

The MHTP uses Monika's live temperature monitoring across 122 units that store numerous vaccines and specimens. This includes more than 30 freezers that are monitored to -80 degrees celsius.

For the last 15 years, Monika has also continuously monitored chilled/frozen samples and ambient product storage across 40+ units at Royal Liverpool University Hospital. Shakeel Herwitker, Assistant Director of Pharmacy describes the system as a "critical support mechanism".

"It makes it easier to keep on top of the strict medicines-related storage guidelines, so I can focus on my day-to-day work. As well as the immediate benefits, over the years it has more than paid for itself by preventing expensive product wastage," says Shakeel.

Monika has provided temperature monitoring solutions to healthcare and foodservice institutions worldwide since the early 1990s. Our product simulation technology originated from research conducted in an accredited laboratory into 100+ different product types.

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New standards for safe and effective digital mental health care

The introduction of world-leading standards for digital mental health services in Australia is set to be a game changer for the nation at a time when the delivery of high-quality mental health care has never been more important.

The announcement of new National Safety and Quality Digital Mental Health (NSQDMH) Standards by the Australian Commission on Safety and Quality in Health Care (the Commission) has been embraced by the mental health sector and consumer and carer advocates.

Encompassing mental health, suicide prevention and alcohol and other drug services, the NSQDMH Standards will support the delivery of high-quality and safe care including counselling, treatment and peer-to-peer support services via telephone, videoconferencing, websites, SMS, webchat and mobile apps.

With one in five adults[1] and one in seven adolescents[2] experiencing a common mental health disorder each year in Australia — combined with unprecedented demand for digital delivery of mental health services this year — there are tangible benefits in being able to access safe and effective care on digital platforms.

The coronavirus outbreak has amplified the scale of mental health issues and research has shown it has adversely impacted Australia's mental wellbeing. Three-quarters (78%) of Australians reported in April this year that their mental health had been impacted[3] and more than one million Australians had sought help from mental health services.[4]

Dr Peggy Brown AO, the Commission's Senior Clinical Advisor who led the development of the NSQDMH Standards, said they were recognised as an important leap forward by service providers, clinicians and end users.

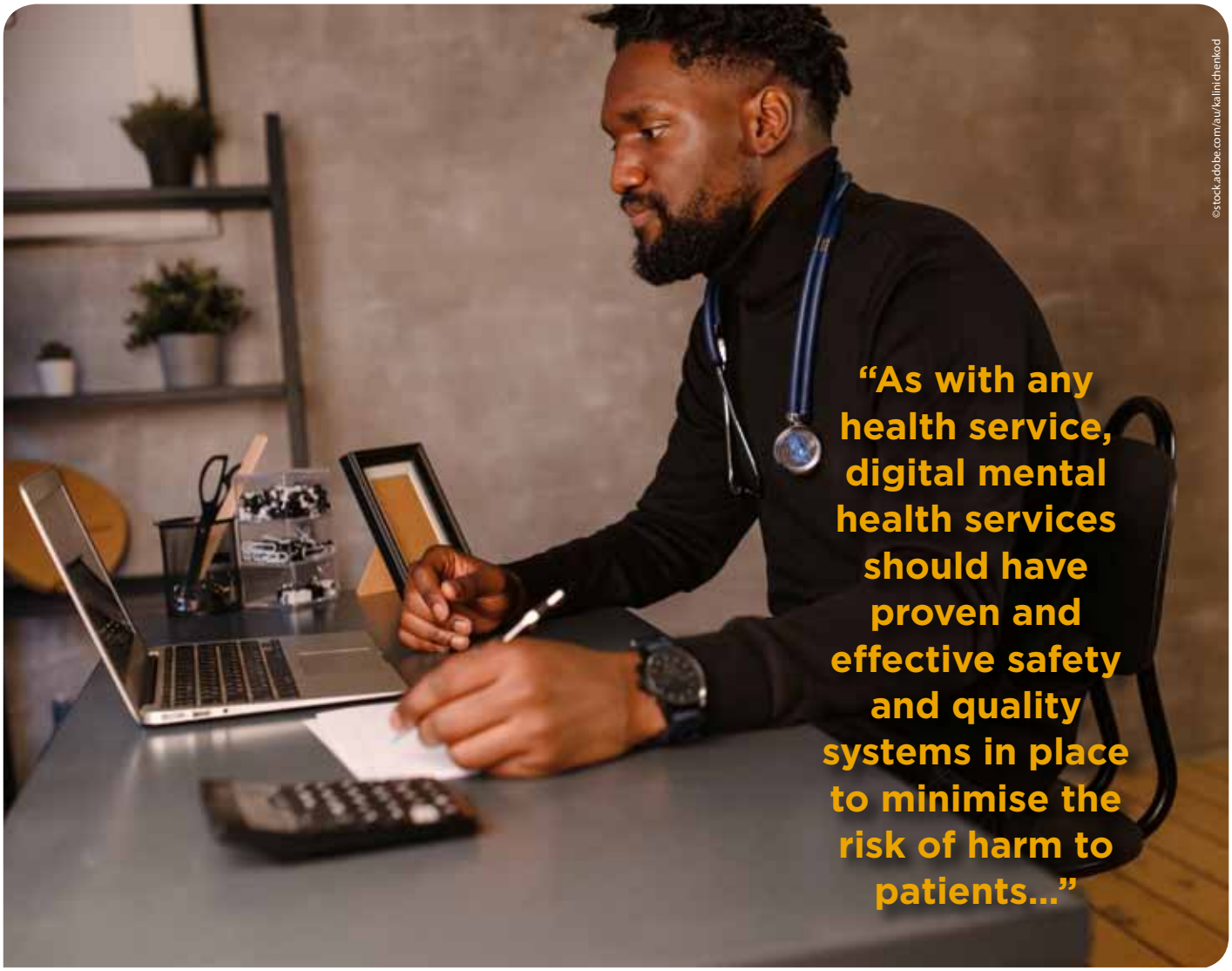
"It is more important than ever for Australians to have ready access to high-quality digital mental health services," she said. "The standards will engender more trust and confidence among consumers, carers and clinicians in Australia's digital mental health services. Service providers will also benefit from having a quality framework to improve their delivery of digital mental health care.

"The Commission has consulted widely on the digital mental health standards to consider all perspectives. Given the rapid transition to digital services as part of the pandemic response, there is a compelling case to ensure the standards are swiftly adopted by service providers, which will benefit so many Australians," Dr Brown said.

Within the framework, there are three core NSQDMH Standards:

1. Clinical and technical governance.
2. Partnering with consumers.
3. The model of care, which includes communicating for safety and recognising and responding to acute deterioration.

Not all recommended actions within each standard will apply to every service provider.



The Commission has worked closely with consumers, carers, health professionals, digital mental health service providers, academics, experts, and government and peak body representatives to shape the NSQDMH Standards. The draft standards received a strong response when they were put out for national public consultation from February to May this year.

"The new standards are voluntary but much feted by the sector, which has been seeking a quality assurance framework for several years," Dr Brown said.

"Australia is recognised as having one of the safest healthcare systems in the world. As with any health service, digital mental health services should have proven and effective safety and quality systems in place to minimise the risk of harm to patients, and these standards are the first step towards achieving that goal."

Professor Nick Titov, Executive Director of MindSpot, and Chair of the Commission's Digital Mental Health Advisory Group, anticipates that the standards will help "ensure a high bar" for mental health services using digital platforms.

"By conducting a self-assessment based on the digital mental health standards, providers will quickly identify areas where improvement is required, resulting in improved safety and quality of care," Professor Titov said.

"The COVID-19 pandemic has increased demand for digital mental health services. Digital platforms allow us to be nimble and innovative in delivering services, but we need to work together to ensure that people are protected from harm, particularly when they are vulnerable and coping with mental health issues.

"We welcome these standards, which provide a clear safety and quality framework."

Eileen McDonald, NSW Carer Representative at the National Mental Health Consumer and Carer Forum, and Deputy Chair of Digital Mental Health Advisory Group, said the NSQDMH Standards provide a nationally consistent statement of the level of safety and quality that consumers and carers can expect from digital health service providers.

"Today's announcement by the Commission is an exciting step in the right direction. The digital mental health standards will incentivise services to provide safe and high-quality care, and will empower people to make informed choices about the digital resources they use," McDonald said.

The NSQDMH Standards will be launched today via a live-streamed event. This will feature a panel discussion with Dr Peggy Brown, Professor Nick Titov, Eileen McDonald and youth mental health advocate Samuel Hockey. ABC National Medical Reporter Sophie Scott will host the online event.

Tune in at 12:30 pm AEDT Monday 30 November. To register for the webcast and find out more information about the NSQDMH Standards, visit: https://www.safetyandquality.gov.au/dmhs.

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Managing medication in aged care

Amy Sarcevic

These days, pharmaceuticals and aged care tend to go hand in hand, but with 95% of aged-care residents living with a medication-induced problem, the relationship is far from harmonious.

On average, aged-care residents consume 9.75 medications at any given time. More than half of these are believed to be inappropriate, or prescribed longer than necessary — many of them doing more harm than good. In fact, medication harm leads to hospitalisation for one in five people living in residential aged-care facilities (RACF).

Aside from the direct health impact, overmedication can cause psychological problems. Sedatives and antipsychotics are often used to restrain behaviour and help people with complex mental health issues co-exist. However, being sedated for the benefit of other staff and residents can impact quality of life for the individual.

As told in the Royal Commission Interim Report last year, overprescribed aged-care residents are often left "drowsy and unresponsive to visiting family". With family members known to visit less when their perceived 'return on time investment' drops, this could have devastating consequences for the resident.

Many medications, particularly those used to manage dementia, may also accelerate cognitive decline or enhance symptoms like depression and apathy. Suicidal ideation is a well-documented side effect of treatments like mirtazapine, which are commonly prescribed to the elderly.

Pharmaceuticals are everywhere, but pharmacists are nowhere

Despite the pharmaceutical-intensive nature of aged care, pharmacists currently play a minimal role in the system. Often, prescribing decisions come from resident nurses or outsourced GPs that don't know the residents intimately.

Additionally, the ongoing consumption of medications is rarely reviewed on a routine basis. This could mean that antibiotics are taken longer than necessary, predisposing residents to antibiotic resistance, or that drugs with harmful side effects are continued, despite better-suited alternatives.

Associate Professor Christopher Freeman of the Pharmaceutical Society of Australia (PSA) believes routine pharmacist intervention should become a regular fixture of the aged-care system. He recently made a submission to the Royal Commission calling for systemic change.

"I'd like to see pharmacists permanently embedded in residential aged-care facilities — almost like a resident pharmacist," Associate Professor Freeman said.

"At the moment, the majority of prescribers in RACFs are GPs that work in general

practice and consult with nurses on an ad hoc basis, rather than being there consistently.

"If pharmacists play a more central role — as part of a whole-of-team approach — they could provide personalised consultation on the initial supply and carry out routine assessments, say, every six weeks.

"They could also act as a clinical resource for problem-solving and decision-making, For example, if a patient is unable to swallow their slow-release medicine, the pharmacist could find an alternative way to administer the medication safely without dumping a high dose into the body all at once.

"Given that elderly people can be physically frail and tend to have a lot of accumulated medicines over their lifetime, it's really important that regular reviews take place," he added.

Pharmacists could also reverse the trend of retroactive problem-solving. Often, medication discrepancies are looked at in hindsight and then corrected — by which time harm is already done. With a more proactive approach, pharmacists, doctors and nurses could work together to prevent medication discrepancies happening from the outset.

No magic pill

Although the solution may seem clear, the reality is that, without addressing root causes like understaffing, aged-care workers may need to continue using sedatives to restrain residents.

"I'd like to see pharmacists permanently embedded in residential aged-care facilities — almost like a resident pharmacist," Associate Professor Freeman said.

Aged-care worker, Lisa Stewart* explains that inadequate support on the ground makes it challenging to manage complex mental health problems without medication.

"It can be really hard on residents and staff when, for example, there are people with varying degrees of dementia placed together in an aged-care facility. As much as we would like to give all of our time to provide psychosocial support and mediate challenging or distressing situations, it isn't always possible to give residents the attention they need," she said.

"Patients with advanced stages of dementia can at times become violent and aggressive, and without the right support and training it can be very hard to know how to manage these situations without medication. Although it might not be the best option for the individual, we also have to think about the safety and wellbeing of staff and residents."

Relieving the high burden of care could pave the way for different forms of intervention, like de-escalation strategies, as and when conflict arises.

"As a last line resort, medication can be effective. But it is currently being used as a first line solution and it shouldn't be," Associate Professor Freeman said.

"There are lots of ways to manage mental health problems and it is now up to government to provide the right enabling environment for workers to enact those solutions."

*Name changed for privacy.

The health and financial imperative to improve health care's

environmental footprint

Dr Emma-Leigh Synnott, Dr Carrie Lee

Experts worldwide, including the World Health Organization, consider climate change to be the greatest global health threat of the 21st century. The effects of climate change are already being felt — both directly due to injury and illness from extreme weather events and indirectly from worsening air and water pollution, changing food security and changing patterns of infectious diseases. The social effects of climate change are also evident through resulting mass displacement (climate refugees), economic hardship, and mental health and stress-related disorders.

One climate change event that is still heavy in the minds and hearts of Australians is the unprecedented 2019–2020 bushfires — the fires that 'stopped a nation'.

The 'Black Summer' fires that raged across the east of the country between October 2019 and March 2020 are thought to have resulted in around 450 deaths from either fire exposure or bushfire smoke inhalation, with the December 2019 airborne particulate matter (PM2.5) concentrations in NSW and the ACT being the highest of any month in any state or territory. There were also 3151 hospitalisations from cardiovascular or respiratory problems and 1305 presentations to emergency with asthma-related illness. The widespread mental health and social impacts (to both those directly affected, as well as those more distant who bore witness to the event) are likely to continue for years to come, similar to prior fire events, such as Victoria's Black Saturday bushfires in 2009. In addition

Health care, with the guiding principle of first do no harm, has an ethical responsibility to get its own house in order and to lead by example — to secure the health and wellbeing of people now and into the future.

to this health burden the total economic toll of the summer fires through direct, indirect and intangible losses has been profound, with the estimated costs likely to reach a total of $100 billion.

Last summer's catastrophic bushfires exposed Australia's vulnerability to extreme weather, and were a chilling indication of what may come as a result of further climate change. As outlined in the recent WA Climate and Health Inquiry, our changing climate is exposing Australians to climate-related illnesses, and healthcare services are vulnerable to a range of risks, including an increase in patient demand and threats to infrastructure, workforce and supply chains. Paradoxically, the healthcare sector is a significant contributor to climate change — its carbon footprint is estimated to be 7% of Australia's total carbon emissions.

In response, Doctors for the Environment Australia (DEA) have recently released a new report Net Zero Carbon Emissions that calls for the health sector to adopt:

- an interim emissions-reduction target of 80% by 2030;
- net zero emissions by 2040.

The report proposes that these sector-wide emissions reductions should be coordinated by an Australian sustainable healthcare unit (SHU), similar to the one in the UK. Improving healthcare's carbon footprint will also bring economic benefits to the sector's budget. In areas of waste, water and energy, the UK's Sustainable Development Unit saved more than 90 million pounds in 2017 compared with 2013/2014.

The recent *MJA–Lancet* Countdown report on climate change stated, "No continent, country or community is immune from the health impacts of climate change... [however] aligning the global COVID-19 recovery with our response to climate change offers the chance to protect health, promote a sustainable economy, and preserve our planet".

Health care, with the guiding principle of first do no harm, has an ethical responsibility to get its own house in order and to lead by example — to secure the health and wellbeing of people now and into the future.

Emma-Leigh Synnott is a Consultant Physician in Rehabilitation Medicine at the Fiona Stanley Hospital in Perth and the Medical Lead for Climate Health and Environmental Sustainability in the FSFHG hospital network. The WA Chair for Doctors for the Environment Australia, Emma-Leigh is also on the working party for a WA Climate and Health Community of Practice.

Carrie Lee is a junior doctor with an interest in global/public health and advocacy. She is a member of Doctors for the Environment Australia and is studying a masters of public health and tropical medicine.

In Conversation
with Dr Teagan-Jane Westendorf
from the National Advisory Group for Aboriginal and Torres Strait Islander Aged Care

Aboriginal and Torres Strait Islander peoples have specific needs that must be considered in the national reform of Australia's aged-care system.

In 2018, the National Advisory Group for Aboriginal and Torres Strait Islander Aged Care (NAGATSIAC) was established to develop the Aboriginal and Torres Strait Islander Action Plans for the Commonwealth's Aged Care Diversity Framework. Since then, the group has worked closely with the Commonwealth and Royal Commission to inform aged-care policy.

Reaching Aboriginal and Torres Strait Islander communities across Australia, NAGATSIAC's working group comprises in-home and residential aged-care service providers, as well as researchers affiliated with multiple research institutes, cross-disciplinary research projects and health practitioners across Australia.

Hospital + Healthcare spoke with NAGATSIAC Senior Policy Officer Dr Teagan-Jane Westendorf about how the aged-care redesign can improve Indigenous access to appropriate aged-care services and safeguard against people 'falling through the cracks'.

What are the specific needs of Indigenous Australians when it comes to aged care?

Indigenous Australians have higher rates of chronic illness and an associated higher mortality rate compared with their non-Indigenous counterparts, but this is not reflected in additional or even equal service provision in our aged-care system. The lack of parity is the result of a range of factors that can be linked back to vulnerabilities resulting from our colonial history.

What factors must be addressed in the aged-care redesign?

Significant gaps in disability, chronic illness and mortality exist between Indigenous and non-Indigenous Australians. The aged-care sector redesign must address the lack of parity in aged-care service access and provision between these two cohorts. If equity and dignity are to be afforded to Indigenous people, the system must be redesigned to accommodate their vulnerabilities and needs at every stage, from application and assessment through to service delivery.

Indigenous Australians are significantly underrepresented in aged-care services. We estimate that service delivery to this cohort would have to increase by 40.4% to achieve parity of need to service use/delivery between the two cohorts.

What is the need of service delivery to Indigenous compared with non-Indigenous Australians?

Significant differences exist between need and service delivery for older Australians in the non-Indigenous and Indigenous cohorts.

A lack of cultural safety training means that assessors commonly do not understand the specific needs of the person and their Community.

Although we do not have the data to inform the true need of the Indigenous cohort, we can assume it is at least the same as the known need of the non-Indigenous cohort: 34.5%.

The known, unmet need of the non-Indigenous cohort is 1.8% compared with at least 11.2% in the Indigenous cohort.

What impedes access to aged-care services for Indigenous Australians?

Indigenous Australians commonly experience three key factors that make it harder for them to access services:

1. Vulnerabilities: Indigenous Australians experience significantly higher rates of disability, homelessness, co-morbidities and early onset dementia, which inhibit the My Aged Care application process. These vulnerabilities correlate with decreased education, capacity and resources, which make it harder to navigate the system.

2. Cultural safety: Cultural safety training is currently not mandatory for service providers or assessors working for Aged Care Assessment Teams or Regional Assessment Services. The online application — and often engaging with assessors by phone or in person — exposes people to questions and staff that have not been qualified by cultural safety training and principles. Access pathways can therefore make people vulnerable to re-traumatisation, and incorrect assessment, which can deter people from applying or progressing their applications.

A lack of cultural safety training means that assessors commonly do not understand the specific needs of the person and their Community, which can be very different to non-Indigenous people with the same affliction due to Indigenous communities needing 'family centred care' rather than 'person-centred care' to accommodate their needs.

3. Complexity of need and trauma: Indigenous Australians are recognised as experiencing complex needs and trauma, particularly the Stolen Generations. This commonly involves a distrust and fear of processes that could lead to institutionalisation by the government in the name of providing care. This results in people choosing not to apply for aged-care services that they need. In other cases, people do apply and then experience racism or a lack of cultural safety in interactions with systems and staff who have not undergone cultural safety training, or who assert racist ideas or assumptions, which then deters these people from progressing their application or engaging with the system in future.

How important are Indigenous organisations in system reform?

NAGATSIAC advocates that achieving equilibrium in access to and delivery of aged-care services can only be achieved by enabling Indigenous organisations (Aboriginal Community Controlled Organisations, ACCOs) and staff to deliver assessments and services to local Elders.

To achieve this we need to enable growth in the ACCO aged-care sector by enabling more ACCOs to deliver more, and better, culturally safe services to more Elders in their local region.

We believe that this growth can be achieved by adjusting the funding model of the aged-care system so that it enables ACCOs that have demonstrated the greatest capacity to build and operate an Indigenous workforce to provide culturally safe assessments and aged care in their local areas. This will allow the aged-care system to establish a culturally safe, trauma informed, Indigenous workforce to provide the care Elders want, need and have the right to choose as their first preference.

*Indigenous Australians aged 50 years and over (Elders) are eligible for aged care; non-Indigenous Australians aged 65 years and over are eligible for aged care.

Out & About

Meet the HESTA Excellence Awards winners

November 2020's HESTA Excellence Awards celebrated eight organisations and teams, recognised across disability services, allied health, aged-care and community services in a virtual ceremony. The awards recognise the dedicated professionals working across the four sectors who have gone above and beyond to make a real difference to the health and wellbeing of Australians.

Winners were announced in the categories of Outstanding Organisation and Team Excellence, each taking home $7500, generously donated by HESTA Awards sponsor ME Bank, to be used for further education or service or product development.

The 2020 winners are:

Aged Care

Outstanding Organisation: ECH (Enabling Confidence at Home) — recognised for delivering outstanding support to older people through its innovative and inclusive model of aged care.

Team Excellence: Wellbeing Clinic for Older Adults, Swinburne University of Technology — recognised for providing outstanding mental health care and support for aged-care residents.

Allied Health

Outstanding Organisation: Cyclabilities — recognised for providing quality learning opportunities in recreational activities for children with disabilities or vulnerabilities.

Team Excellence: PACE (Pulmonary and Cardiac Exercise and Education) Team, Alpine Health — recognised for going above and beyond to deliver outstanding client care in the face of great challenges and adversity.

Community Services

Outstanding Organisation: Justice Connect — recognised for helping people and community organisations to access legal support by designing and delivering high-impact interventions.

Team Excellence: Wongee Mia, Ruah Community Services — recognised for their innovative pilot housing project designed to end the cycle of evictions and long-term homelessness disproportionately experienced by Aboriginal people.

Disability Services

Outstanding Organisation: Synapse Australia — recognised for providing a range of services, including specialist housing and support, for people who have been impacted by brain injury, including stroke and dementia.

Team Excellence: Sharon's 24/7 Support Team, Interchange WA — recognised for their significant contribution to people living with disability, including providing support to start a new life at home and in the community after incarceration.

1

2

3

4

1. Wongee Mia, Ruah Community Services — winner of the Community Services Team Excellence Award.
2. The Aged Care Team Excellence winner, Wellbeing Clinic for Older Adults.
3. The PACE (Pulmonary and Cardiac Exercise and Education) team, Allied Health Team Excellent Award winners.
4. The Disability Team Excellence winner, Sharon's 24/7 Support Team.

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  Alcohol hand rub and PPE placed at point of use to promote compliance.
- **Conforms to infection prevention guidelines**
  Conforms with multinational guidelines including Australasia[1] and UK[2].

For more information, visit **rediroom.com.au**

1. Siegel JD, Rhinehart E, Jackson M, Chiarello L, and the Healthcare Infection Control Practices Advisory Committee, 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings.
2. Mitchell, B.G., Williams, A., Wong, Z. and O'Connor, J., 2017. Assessing a temporary isolation room from an infection control perspective: A discussion paper. Infection, Disease & Health, 22(3), pp.129-135.

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