

THE AUSTRALIAN

HOSPITAL HEALTHCARE



BULLETIN SUMMER 2018



STANDARDS

National standards relaunch

INFECTION CONTROL

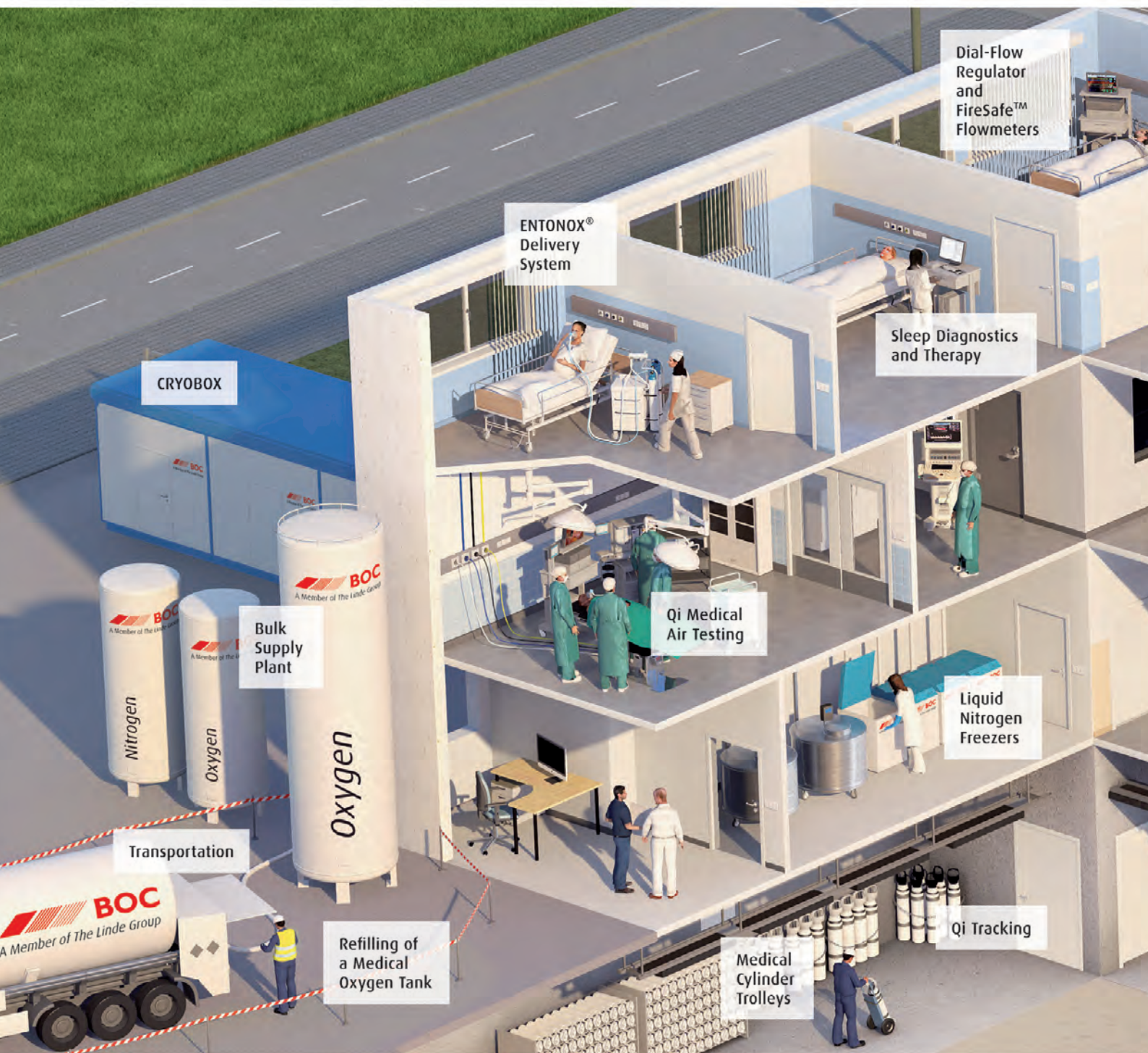
Sustainable infection prevention

LEADERSHIP

GS1 Australia CEO Maria Palazzolo

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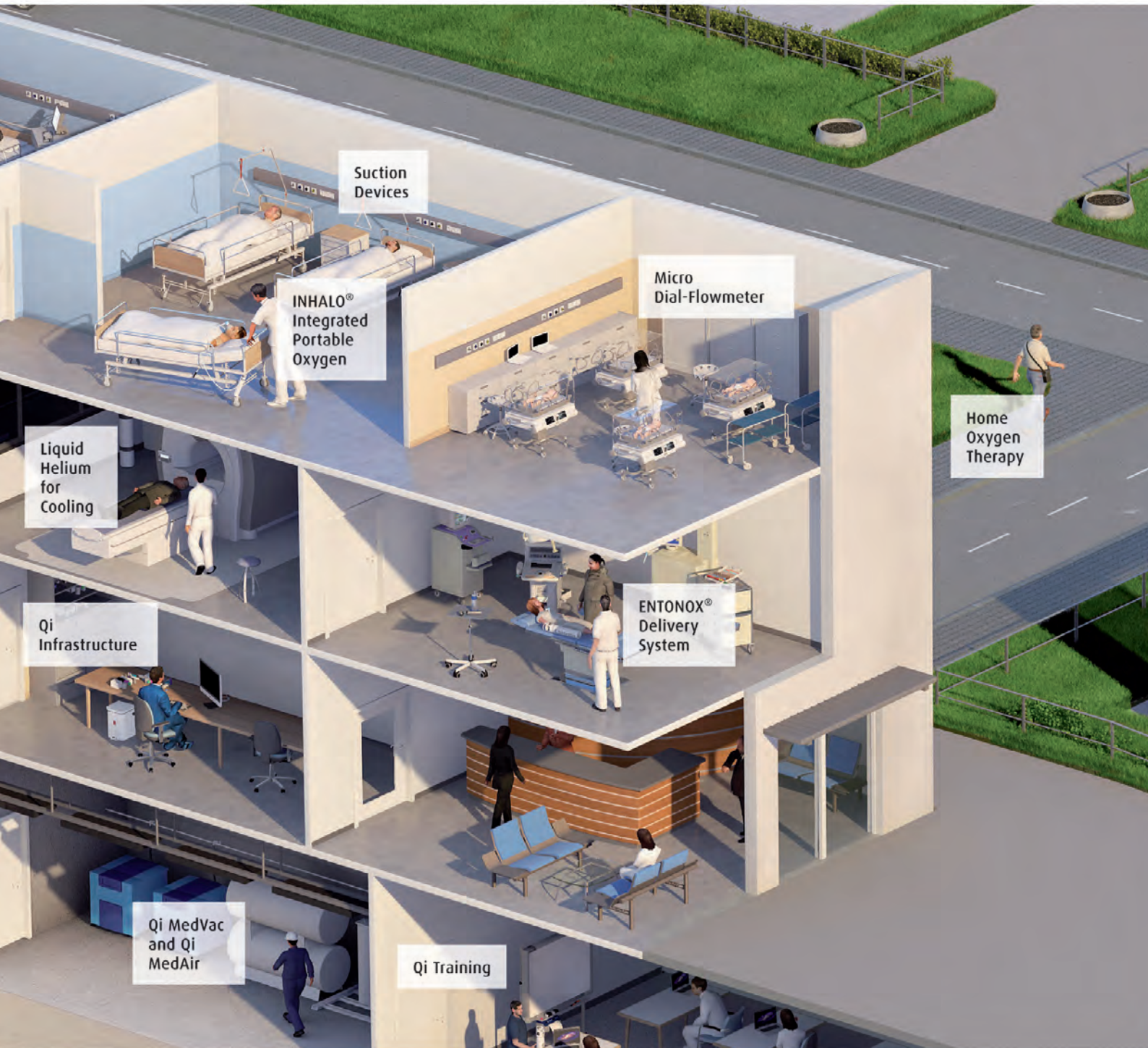
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A photograph of a doctor in a white coat and glasses holding a clipboard with a patient's chart, talking to a blonde woman in a hospital setting. The doctor is on the right, looking down at the clipboard. The woman is on the left, looking up at the doctor. The background is a blurred hospital room with other patients and medical equipment.

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Welcome to your Summer issue

When you think 'sustainability' and 'health care', what comes to mind?

Recycling bins? Hazardous waste? How about 'innovation', 'improved patient experience' or 'cost savings'?

These are all benefits of implementing sustainable practices, which is why this issue is themed 'Sustainable health care'. In it, you can read about:

- case studies from health and aged care facilities around Australia, who share their sustainability projects and outcomes;
- how health behemoth Johnson & Johnson engages with its 127,000 employees to avoid damaging the Earth's resources;
- sustainable infection prevention; and
- the Framework for a National Strategy on Climate, Health and Well-being for Australia.

We continue our women in leadership in healthcare series, meeting GS1 Australia CEO Maria Palazzolo. Maria started out as a part-time working Mum, facing down stereotypes and sexism to rise to CEO of GS1 Australia. Read about her experiences and her advice to other women in management in our feature 'A Woman of Stature'.

Imagine working for a hospital that serves everyone from royalty to the average Joe, all of whom rave about your food and their seamless experience? This is Stefan Tornau's life. As Executive Director Hospitality Services at the Cleveland Clinic in Abu Dhabi, he has overseen the development of its five-star

experience for patients. To learn how he has achieved this (and to check out the royal tea set), read 'Empathy + innovation = outstanding patient experience'.

Standards are critical to ensuring a consistent and safe environment, which is why, when new standards relevant to the health and aged care industries are released or updated, we ensure you're informed. In this issue, read about Standard Australia's new Digital Hospital Handbook in 'A framework for success', and the launch of the new edition of the 'NSQHS Standards', updated to incorporate industry feedback on the first edition.

Don't forget to check out our regular features, such as a 'Day in the Life', where we meet Dr Mark Formby from NSW Health Pathology, who explains how digital technology is innovating his industry, or 'In Conversation...' with Dr Keith Ooi, who, with his colleague Dr Michael Coffey, has created a virtual hospital game to help prepare medical students for the real world.

There's lots to keep you engaged. I love hearing from readers, so if you have any feedback or suggestions for stories, drop me a line at ahhb@wfmedia.com.au.

Happy Summer Reading!

Laini

Laini Bennett

Editor, AHHB

ahhb@wfmedia.com.au



WANT TO CONTRIBUTE?

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

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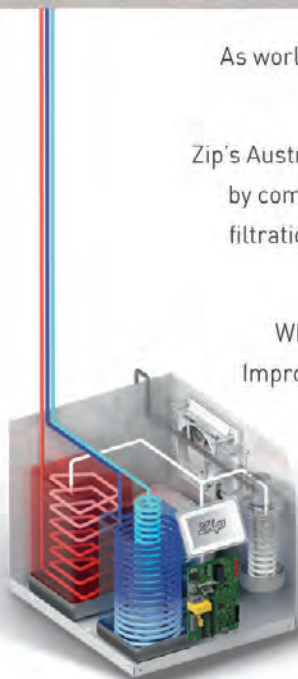


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The Rounds

Updates in Healthcare



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40% of healthcare professionals work while sick

Healthcare professionals (HCPs) should heed their own advice: stay home when sick.

A new study has found that HCPs are among the most likely to go to work when sick. Some four in 10 HCPs work while experiencing influenza-like illness (ILI), according to findings published in the November issue of the *American Journal of Infection Control* (AJIC), the journal of the Association for Professionals in Infection Control and Epidemiology (APIC). As in all workplaces, contagious employees risk infecting others when they turn up for work. But with higher concentrations of older patients and individuals with immunosuppression or severe chronic diseases in healthcare facilities, ILI transmission by HCPs presents a grave public health hazard.

"The statistics are alarming. At least one earlier study has shown that patients who are exposed to a healthcare worker who is sick are five times more likely to get a healthcare-associated infection," said lead researcher Dr Sophia Chiu, CDC's National Institute for Occupational Safety and Health. "We recommend all healthcare facilities take steps to support and encourage their staff to not work while they are sick."

The annual study, conducted via a national online survey, collected data from 1914 HCPs during the 2014–2015 influenza season. Respondents self-reported ILI, defined as the combination of a fever and cough or sore throat, and listed factors that prompted them to turn up for work.

The survey assessed a variety of health occupations across multiple institutions: physicians; nurse practitioners and physician assistants; nurses; pharmacists; assistants/aides; other clinical HCP; non-clinical HCPs; and students. Four types of work settings were assessed: hospitals; ambulatory care or physician offices; long-term care facilities; or other clinical settings.

The most common reasons for HCPs to opt from taking sick leave included feeling that s/he could still perform her/his job duties; not feeling "bad enough" to stay home; feeling as if s/he were not contagious; sensing a professional obligation to be present for coworkers; and difficulty finding a coworker to cover for her/him. Among the HCPs who felt they could still perform their job duties, 39% sought medical attention for their ILI symptoms, as did 54% of those who did not think they were contagious. 49.8% of HCPs in long-term care settings who reported for work when sick reported doing so because they couldn't afford to lose the pay.

Previously published results from this survey described that only 77.3% of respondents reported receiving a flu shot.

The Centers for Disease Control and Prevention recommends that anyone with ILI wait 24 hours after a fever breaks before returning to work.

Smart tattoo ink changes colour for dehydration, blood sugar

Imagine a tattoo that changed colour if your blood sugar levels rose or if you were dehydrated?

Skin art will soon be functional thanks to some clever researchers at Harvard Medical School and MIT.

The researchers have developed smart tattoo ink capable of monitoring health by changing colour to tell an athlete if she is dehydrated or a diabetic if his blood sugar rises.

The work paired biosensitive inks developed at Harvard with traditional tattoo artistry as a way to overcome some of the limitations of current biomedical monitoring devices.

"We were thinking: new technologies, what is the next generation after wearables?" said researcher Ali Yetisen. "And so we came up with the idea that we could incorporate biosensors in the skin."

A drawback of current wearable monitoring devices is that they don't seamlessly integrate with the body, Yetisen said. Short battery life is a concern and so is the need for wireless connectivity, neither of which is an issue with the simple, colour-based interface of biosensitive tattoo ink.

"We wanted to go beyond what is available through wearables today," Yetisen said.

The Dermal Abyss tattoo inks change colour according to the chemistry of the body's interstitial fluid, which can be used as a surrogate for constituents of the blood. Inks developed so far change from green to brown as glucose concentration increases. The team also developed a green ink, viewable under blue light, that grows more intense as sodium concentration rises, an indication of dehydration. Researchers tattooed the inks onto segments of pig skin and noted how they changed colour or intensity in response to different biomarkers.



© Harvard Medical School

Unannounced aged-care audits to replace planned visits

Unannounced accreditation visits will replace announced audits across Australia's residential aged-care facilities, to help ensure safe, quality care standards are maintained at all centres at all times.

Releasing the *Review of National Aged Care Quality Regulatory Processes*, Aged Care Minister Ken Wyatt AM said the Turnbull government would move as soon as possible to implement Recommendation 8, as it considers the entire review in detail.

"Aged-care safety and quality are non-negotiable and must be delivered to residents 365 days of the year, without exception," said Minister Wyatt.

The Australian Aged Care Quality Agency will continue to conduct initial accreditation audits in consultation with the provider, to allow them to understand the standards and meet licensing requirements.



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Medtech agreement with government an opportunity for reform

Last year in Australia more than 2.5 million surgeries took place and, for each and every one of these surgeries, medical technology played a part. Medical technology (medtech) allows patients to hear, to walk, to see, to live or to have a quality of life that they otherwise would not have.

Following the federal Budget health reforms in May, Minister for Health the Hon Greg Hunt identified private health insurance and the Prostheses List as the "next wave" of reforms. MTAA actively engaged with the government and, following five months of intensive negotiation, MTAA signed a historic agreement with the federal government on 11 October 2017.

The agreement, in effect from 15 October 2017 to 31 January 2022, will deliver more than \$300 million in annual benefit reductions to medical devices listed on the Prostheses List. Coming on top of the \$86 million annual cuts in February 2017, this represents a \$1.5 billion saving to private health insurance companies over the next four years.

The MTAA believes it is essential that insurers fully pass on to consumers the savings that this agreement provides.

These cuts will not be easy for the medtech sector and will likely result in job losses, reduced R&D, reduced education and training for healthcare professionals, and reduced investment in clinical trials.

3D bones made while you're in surgery

3D implants are set to revolutionise the way bone cancer is treated.

Lead researcher RMIT's Professor Milan Brandt and the project team will combine 3D printing, robotic surgery and advanced manufacturing to create tailored implants for patients with bone cancer.

"Our aim is to bring the technology to the theatre," Brandt said. "While patients are having their cancer removed in the operating theatre, in the next room, we are custom printing an implant to precisely fill the space left after removal of the diseased bone."

The technology will result from a major new Australian research project using 3D implants and robotic surgery, expected to radically advance the way physicians surgically treat tumours and bone cancer.

It is also anticipated to dramatically improve patient and healthcare outcomes. The five-year project, 'Just in time implants', brings together the Australian Government, RMIT University, the University of Technology Sydney (UTS), St Vincent's Hospital Melbourne and global medical technology company Stryker.

The novel process represents a major shift in the way implants are designed, manufactured and supplied, and could lead to bespoke local manufacturing.



3D bone image credit: ©RMIT



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Global impact

Laini Bennett

How does a global organisation, making \$94 billion annually and with over 127,000 employees, avoid damaging the Earth's resources? We talk with Gavin Fox-Smith, Managing Director, Johnson & Johnson Medical Devices Australia and New Zealand, about how healthcare giant Johnson & Johnson mixes business with sustainability.

It's 1943, and Johnson & Johnson is about to become a publicly traded company. From humble beginnings making medicated plasters to establishing the world's first mass-produced sterile surgical supplies, Johnson & Johnson is already a renowned brand and is about to undergo rapid expansion.

Conscious of this, then chairman Robert Wood Johnson, a member of the company's founding family, crafted a vision for its employees to live and work by. 'Our credo', as he called it, challenges Johnson & Johnson to put the needs of the people it serves first and, well ahead of his time, to protect the environment and its natural resources.

Setting goals

Since 1990, Johnson & Johnson has revisited its sustainability goals every five years, aiming to build on and exceed the previous targets. In 2016, the company launched its latest objectives — its Health for Humanity 2020 Goals.

"Our current environmental goals are focused on reducing our impacts on climate and water resources," explained Gavin Fox-Smith, managing director, Johnson & Johnson Medical Devices Australia and New Zealand.

"Specifically, we're working to reduce absolute carbon emissions by 20% and produce or procure 35% of electricity from renewable sources by 2020. We're also going to conduct a comprehensive water risk assessment at all of our manufacturing and research and development locations."

Rethinking work practices

Johnson & Johnson is always seeking ways to adapt and rethink its processes in order to

achieve its sustainability goals. Its Earthwards program strives to reduce the environmental footprint of its products by integrating sustainable design solutions.

To receive Earthwards recognition, a product must achieve three or more significant sustainability improvements across six key areas: materials, packaging, energy, water, social and innovation. Today, Johnson & Johnson has more than 100 Earthwards-recognised products worth \$15 billion in revenue across three sectors: consumer, medical devices and pharma.

One example of an Earthwards-recognised product is the Expedium Verse spinal system. Fox-Smith says its design led to a reduction of instruments needed per procedure when compared to competitors, and a reduction in energy and water used to sterilise and disinfect instruments by more than 70%, while also helping create time and cost efficiencies in the operating room.

"We also seek feedback from customers about their environmental sustainability needs, such as improved packaging," said Fox-Smith. "For instance, DePuy Synthes, one of our medical device companies, designed flat packaging that cuts packaging materials for medical devices by 49%, and significantly improves shipping efficiency. These savings help reduce emissions and minimise storage space for our customers."

Cultivating collaboration

To foster new ideas and generate environmentally focused innovation, Johnson & Johnson implemented a Sustainability Accelerator Grants Challenge, designed to encourage Johnson & Johnson employees to jump-start the next big sustainability idea that will help more people in more places

Right: 2016 Health for Humanity Report
Below: Gavin Fox-Smith.



©Johnson & Johnson.



“Our citizenship and sustainability approach is inextricably linked to our vision of a world ”

live healthier lives. The challenge incentivises employees to submit their ideas in the areas of waste, environmental health and sustainable product design.

Johnson & Johnson also partners with other like-minded organisations, working closely with the C40 Climate Leadership Group — a network of the world’s 90 megacities that are committed to climate leadership and action — and has invested \$1.3 million in uncovering the link between climate change, air quality and human health. Another close partner is RE100, a collaborative, global initiative of influential businesses committed to 100% renewable electricity.

Importantly, Johnson & Johnson encourages its supply chain to take sustained, long-term action to address energy use and greenhouse gas emissions, just as the company itself has done. “We are committed to engaging and partnering with suppliers who are transparent about their sustainability goals, who can assure us that they’re responsibly producing the goods and/or services we are buying, and can verify the legal and regulatory compliance of their supply chain,” Fox-Smith said.

Leveraging renewable resources

Johnson & Johnson has set itself an ambitious target of reducing its carbon emissions by 80% by 2050, and is confident about achieving this goal.

“So far, we’ve been particularly successful in switching to renewable energy,” said Fox-Smith. “After celebrating our success in securing a 100 MW wind power purchase

agreement last year, we decided to increase our original goal of producing or procuring 20% of our electricity needs from renewable sources to 35% by 2020.”

Beyond the wind power purchase agreement, Johnson & Johnson has increased its on-site renewable and clean-technology energy capacity by recently installing two wind turbines on properties in Ireland, two fuel cells on properties in California, and solar arrays on properties in Puerto Rico. As of the end of 2016, the company had 54 MW of clean or renewable energy systems installed on its properties globally.

“We participate in CDP (Carbon Disclosure Project) reporting programs, achieving recognition in 2016 as part of the CDP Disclosure Leadership Index for the seventh consecutive year,” said Fox-Smith. Johnson & Johnson also participates in the US Environmental Protection Agency’s SmartWay program, which helps companies voluntarily increase transportation energy efficiency while decreasing greenhouse gas emissions and air pollution.

The company’s efforts are not going unnoticed. Johnson & Johnson has received numerous recognitions, including #13 in *Fortune*’s Most Admired Companies List (2017) and #19 in *Newsweek*’s Global Green Rankings (2016).

Employee engagement

Almost 75 years after Robert Wood Johnson penned the Johnson & Johnson credo, it is clear Johnson & Johnson employees take it to heart, with more than 20,000 team members engaged in volunteering in key programs,

devoting more than 15,000 hours in support of initiatives in 2016 alone.

This engagement comes in part from the programs Johnson & Johnson has established to encourage employees to support its Health for Humanity 2020 Goals. One such program is the Environmental Sustainability Ambassador Network, where employees commit to supporting an action, share that action with others and recruit new ambassadors.

“We’re connecting these Sustainability Ambassadors through our WeSustain employee engagement and awareness program, which offers opportunities to positively impact our citizenship and sustainability goals,” explained Fox-Smith.

Last October, Johnson & Johnson also launched a global Sustainability Month, which encourages employees to explore the interconnectedness between environmental and human health through a series of digital and on-site activities. Globally, there are approximately 1000 ambassadors and 20 local teams focused on bringing Johnson & Johnson’s environmental sustainability efforts to life.

“Our citizenship and sustainability approach is inextricably linked to our vision of a world where a healthy mind, body and environment is within reach for everyone, everywhere,” said Fox-Smith.

“Our credo, written in 1943, calls out our responsibility to ‘protect the environment and natural resources’. This was progressive for its time ... now 143 years later, more than ever, it remains important.”

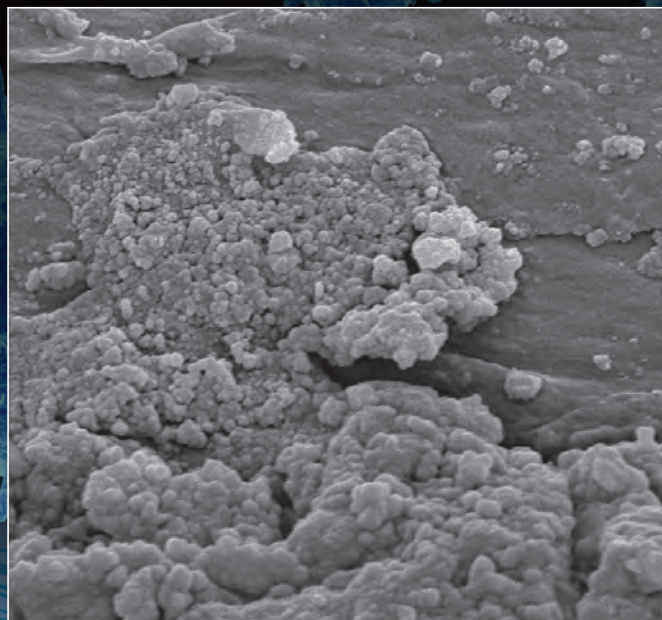
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Climate and health: leading from the front

Fiona Armstrong*

The healthcare industry leads the way with seven recommendations to protect our community from climate change.

Anationwide consultation with healthcare stakeholders in 2016 revealed serious concerns: where was the national leadership required to address the serious and increasing public health risks posed by climate change?

While important actions are being taken at the state/territory and local level, a coordinated national effort is required to ensure that Australia is well prepared to protect the health and wellbeing of communities from the impacts of climate change.

As a result, in a world-first initiative, a coalition of leading health experts and organisations, along with federal parliamentarians, has launched the Framework for a National Strategy on Climate, Health and Well-being for Australia.

The framework was developed following a year-long national consultation to identify stakeholders' priorities and concerns regarding the health impacts of climate change.

It provides a roadmap to support the Commonwealth Government in taking a leadership role in protecting the health and wellbeing of Australian communities from climate change, and in fulfilling its international obligations to human health under the Paris Agreement.

It also provides a policy framework against which Australia can demonstrate its progress

“Addressing both the causes and impacts of climate change can bring health improvements — through policies that reduce air pollution, reduce heat stress, and encourage physical activity.”

— Professor Peter Doherty, Nobel Laureate for Medicine, Framework foreword





against the Lancet Countdown indicators. Starting in 2017, the indicators will inform an annual global evaluation of nations' responses to climate change, and the health benefits that emerge from the low-carbon transition.

The framework covers seven areas of policy action.

1. Health-promoting and emissions-reducing policies

This section highlights the many policies that can reduce the risks to people's health and wellbeing while simultaneously reducing greenhouse gas emissions — these are win-win-win options. For example, reducing the proportion of electricity and transport reliant on fossil fuel combustion (ie, moving to clean, renewable energy for electricity rather than coal, and to electric vehicles charged from solar or wind power) can reduce air pollution in our cities and reduce the risk of respiratory and cardiovascular disease in the population.

2. Emergency and disaster preparedness

With climate change predicted to increase both the frequency and severity of extreme events such as storms, flooding and heatwaves for Australia, this highlights that protecting communities from the impacts of these events requires building the capacity

of health and emergency services to identify vulnerabilities and to prepare and adequately respond.

3. Supporting healthy and resilient communities

Policies that enhance the capacities of community-based health and social service organisations and local governments to support communities in preparing for climate-related events and emergencies will minimise their impact on health and wellbeing. Healthy and resilient communities also require a healthy natural environment and thriving ecosystems.

4. Education and capacity building

While most Australians recognise that climate change is occurring, this area highlights that policies to educate and raise awareness of the health impacts of climate change are needed to build community resilience as well as within the health workforce.

5. Leadership and governance

The framework proposes governments work together vertically (local, state and federal) and horizontally (across portfolios) to tackle the health impacts of climate change. For example, one recommendation is the establishment a Ministerial Health and Climate Change Forum, consisting of



► The framework is available at: <http://www.caha.org.au/national-strategy-climate-health-wellbeing>.

Commonwealth and state/territory ministers with responsibility for health, environment and energy to oversee implementation, monitoring and reporting of the national strategy and reporting to COAG on progress.

6. A sustainable and climate-resilient health sector

International research suggests emissions from the health sector in Australia are between 4 and 8% of total national emissions. A low-carbon and environmentally sustainable health sector would reportedly deliver demonstrable economic, social and environmental benefits for Australia. This would help ensure Australia's health sector can continue to deliver high-quality care while reducing exposure to climate risks.

7. Research and data

This policy area calls for the establishment of a substantive investment in climate and health research capacity to support effective responses to Australia's specific climate-health threats, as well as supporting climate-health research in high-emitting, less-developed nations. This would ensure decision-making is informed by robust research and provide insight into specific climate change health threats, while supporting the identification of vulnerable communities, and effective strategies to respond.

The framework is already informing the development of policies in state and local government, and with the federal Opposition committing to the support the implementation of a National Strategy on Climate, Health and Well-being, the framework's proponents are hoping for bipartisan support to see this comprehensive and world-leading national policy framework become a reality.



*Fiona Armstrong is Executive Director, Climate and Health Alliance.



©Western Health



Case Study 1

Anaesthetic gases — greenhouse gas reductions Western Health, Melbourne, Australia

About Western Health

Western Health, Melbourne, has approximately 700 beds and 18 operating rooms. It is a general hospital (no cardiac surgery, minimal neurosurgery) with a large maternity section.

Hospital goal

To reduce hospital greenhouse gas emissions by changing the type of anaesthetic gases used.

The issue

Like most hospitals, Western Health uses a variety of general anaesthetic gases, primarily sevoflurane, desflurane with some nitrous oxide (N₂O). Desflurane and N₂O have high global warming potentials compared with sevoflurane (or propofol). Moving away from desflurane and N₂O can considerably reduce environmental footprint.

Sustainability strategy implemented

The majority of the Anaesthetic Department voluntarily reduced their desflurane and nitrous oxide use and attempted to use lower flows of gases in general. There was little appetite within the department to cease using desflurane and N₂O completely.

Progress achieved

- Financial benefits: approximately \$28,900 per year.
- Environmental benefit: 140 tonnes of CO₂e emissions per year (equivalent to 36 return



Sustainable effort

Many Australian healthcare organisations are determined to improve their environmental footprint, implementing projects to reduce their greenhouse gas emissions, energy usage and waste. The benefits aren't just environmental — significant cost savings have been found, too. We look at five successful local case studies.

long-haul flights from Melbourne, Australia to London, UK).

- Human health benefit: waste anaesthetic gases can be harmful to staff if not properly exhausted.

Case Study 2

Reducing waste from operating theatres

Royal Melbourne Hospital

About Royal Melbourne Hospital

Royal Melbourne Hospital is part of Melbourne Health, Victoria's second-largest public health service, which also includes North Western Mental Health, North West Dialysis Service and Victorian Infectious Diseases Reference Laboratory. Employing over 8900 staff across our services, Melbourne Health manages over 1400 beds.

Hospital goal

- Reduce waste to landfill.
- Reduce carbon footprint.

The issue

Much of the equipment used in operating theatres is disposable for reasons of sterility, leading to a great deal of waste. Much of the waste was put into clinical waste bins costing 5.3 times more to dispose of.

Sustainability strategy implemented

Starting small, Kinguard (sterile wrap) bins were placed around the department. This was followed by introducing cardboard and paper recycling bins, co-mingled glass and plastic bins, aluminium bins, battery bins, PVC bins and bins for recycling sterile hand towels.

Other measures:

- Clinical waste bags were not opened until the end of each operation to discourage people from putting general waste in clinical waste bins.
- Staff re-educated on which items go into sharps disposal bins.
- Polystyrene cups in the tearoom were replaced with paper cups.
- Companies delivering items in polystyrene packaging asked to remove the packaging after delivery.
- Contents of custom packs were changed to remove items regularly discarded.
- Staff encouraged to shut down computers and turn off lights at the end of the day.

Progress achieved

- Financial benefits: reduced clinical waste resulted in \$230,000+ cost savings since 2013.
- Environmental benefit: 187 tonnes of clinical waste eliminated.

Human health benefit: clinical waste is shredded, disinfected and then disposed of in prescribed landfill. By reducing clinical

waste and increasing recycling a reduction in chemical use and landfill is achieved, reducing greenhouse gas emissions and pollution.

Case Study 3

Community energy efficiency program

UnitingCare Community and Blue Care

About UnitingCare

Uniting Care Community is the community services arm of Uniting Care Queensland, with 2400+ staff, 6000+ volunteers and over 280 services state-wide.

The issue

Energy is the most significant sustainability challenge for UnitingCare Community (UCC) and Blue Care (BC), with stationary energy comprising over 50% of the organisation's carbon footprint. It is also the most significant financial consideration, with money spent on operating costs reducing the funding available for important community services.

The federal government's Community Energy Efficiency Program (CEEP) provided a funding catalyst to enable UCC and BC to allocate highly prized capital funding towards energy efficiency, and to retrofit works that would not have otherwise been afforded.

Sustainability strategy implemented

- Energy audits conducted, identifying energy saving opportunities. Energy efficiency activities were subsequently completed in 27 sites, including:
 - general electrical (lighting upgrades, lighting controls, de-lamping);
 - HVAC (split system air-conditioning upgrades, ceiling fans, ceiling insulation);
 - management controls (remote metering, chilled water timers, general appliance timers, time delay switches, zip boiler timers);
 - water systems (heat pump hot water system upgrades, efficient shower heads, pool pump timer).
- Energy efficiency workshops for staff and volunteers.
- Marketing and communications were distributed across UCC and BC's state-wide network. Sparky the energy-saving icon was created as an identifying mascot to theme all communication resources.

Progress achieved

- Total energy saving across all sites: 37%.
- Cost savings: \$99,000 in 2015 for UCC and BC. Average cost saving per site retrofitted is \$3700 per year, with 13 sites producing savings greater than this.
- Energy consumption savings: 124,069 kWh or 100 tonnes CO₂. Average energy efficiency improvement (MJ/m²) of 39% per site.



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Case Study 2: Some members of the Theatre Sustainability Committee. Below: Recycling bins in theatre.



©Lana Horgan



Case Study 3: Environmentally friendly cups. Below: Members of the team learning about the new program.



©Uniting Care Queensland



Case Study 4:
New energy-efficient lighting rolled out across the centre.

©Mark Garden

Case Study 4

SCC Marsfield energy efficiency works

Southern Cross Care (NSW & ACT)

About Southern Cross Care

Southern Cross Care NSW & ACT (SCC) is a not-for-profit quality aged-care service provider in 41 locations across New South Wales and the Australian Capital Territory, comprising home care services, retirement living and residential aged-care homes. SCC has over 1500 residential aged-care beds and 900 retirement living units.

Aged-care service goal

- Reduce energy costs.
- Reduce carbon dioxide emissions.

The issue

Following 12 months of monitoring electricity usage at its Southern Cross Marsfield Apartments, SCC commissioned an energy audit on the apartments, finding they used much more electricity than other aged-care facilities of a similar bed range in NSW and ACT (although gas usage was reasonable).

Sustainability strategy implemented

The audit found that SCC was being charged for double-metering, where the aged-care facility was being billed for both the electricity used by the facility and the independent living units. This earned SCC a significant refund of around \$50,000 from its electricity service provider, Ausgrid.

Electricity saving measures were also implemented, including:

- replacing fluorescent tubes and compact fluorescent lights with low-wattage LEDs;
- installing movement sensors for the heat lamps in the ensuites, and for lights in store rooms;
- amending the air-conditioners' temperature set points to 22 degrees in winter and 24 degrees in summer;
- staff engagement and education program implemented, including incentives to reward staff for the savings.

Progress achieved

- Financial benefits: \$21,400 per annum saved on electricity costs.
- Environmental benefit: 230,000 kWh saved per annum and greenhouse gas emissions reduced approximately 150,000 kg of CO₂ per annum.

Case Study 5

Mater North Sydney room service

Mater Hospital

About Mater Hospital:

The Mater Hospital is part of St Vincent's Health Australia (SVHA), the nation's largest Catholic not-for-profit health and aged-care provider, and has 233 hospital beds.

Hotel-style room service goals:

- Reduce food wastage.
- Improve the patient experience.
- Provide a market differentiator.
- Provide a sustainable economically viable food delivery model that could drive synergies through standardisation across SVHA private hospitals.

The issue

The existing traditional trayline food service delivery models used across SVHA private hospitals was not sustainable due to high cost and high wastage. With national and international review of food service delivery



Examples of good food layout and quality meals provided by The Mater.

©The Mater Hospital

models, room service was highlighted as aligning closest to the organisation's strategy with regard to patient-centred care and sustainability.

Sustainability strategy implemented:

The hotel-style food delivery model provides flexibility for patients to order to appetite when it suits them. Meals can be ordered around physiotherapy sessions, sleep or visitors, are cooked fresh to order and are delivered within 45 minutes. In hospitals where patients experience a loss of control, this model empowers the patient — placing them in control of what, how much and when they want to eat, improving their intake and reducing waste.

Achievements to date include:

- improved patient experience with Press Ganey meal quality up by 29%;
- reduced food costs — 30% reduction in food purchases;
- plate wastage reduced by 40%, resulting in 44,000 kg less waste in 3-month period;
- waste removal cost savings of \$41,000 per annum.

Four of the organisations represented in these case studies are members of the Global Green and Healthy Hospitals network. The case studies serve to celebrate GGHH members' work and document what they have achieved.

About Global Green and Healthy Hospitals

GGHH is an international network of hospitals, healthcare facilities, health systems and health organisations dedicated to reducing their environmental footprint and promoting public and environmental health.

The GGHHnetwork is a free network more than 900 members in 49 countries on six continents who represent the interests of over 28,000 hospitals and health centres.

GGHH is a project of Health Care Without Harm. The Climate and Health Alliance, as HCWH's strategic partner, coordinates the GGHH network in Australia and New Zealand.

For more information about GGHH, contact info@caha.org.au or visit greenhospitals.net.

About Health Care Without Harm

HCWH works to transform health care worldwide so that it reduces its environmental footprint, becomes a community anchor for sustainability and a leader in the global movement for environmental health and justice.

HCWH's vision is that health care mobilises its ethical, economic and political influence to create an ecologically sustainable, equitable and healthy world.

For more information about HCWH, visit noharm.org.

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

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

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

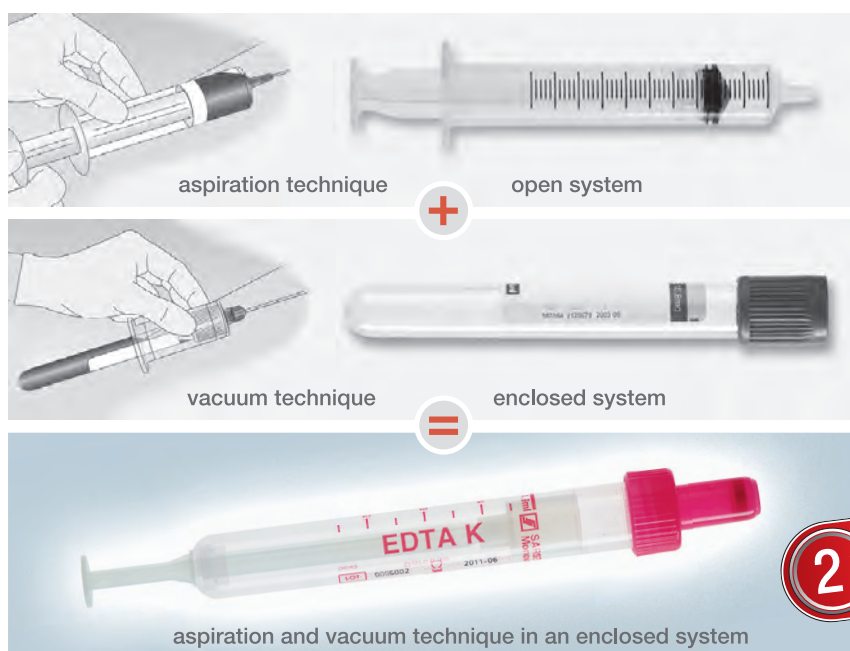
The S-Monovette® needle is ready to use so that there is no need for assembly to a holder. The needle is of a compact, low profile design, which reduces the chance of haematoma by allowing for a reduced angle of puncture and eliminates the possibility of needle stick injury caused by assembly of the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



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Reducing the risk of surface damage: compatibility is crucial



Healthcare equipment and surfaces may pose a transmission risk if not adequately decontaminated [1, 2].

The decontamination method depends on the infection risk, which is influenced by frequency and type of contact with the item and the nature of potentially contaminating microorganisms. Physical cleaning removes most infectious agents and organic matter but does not necessarily destroy residual pathogens. Disinfection further reduces viable organisms to safe levels. A range of disinfectants and combination disinfectants that also possess detergent activity are available, but not all are effective against every form of microbe. Disinfectants targeting *C. difficile* spores, which resist disinfection and remain viable for extended periods [3] need proven sporicidal activity. Poor practice or product performance may result in transference of organisms from

contaminated to clean surfaces [4]. It is critical that products are compatible with the materials they are to be used on.

Material compatibility between wipes and healthcare equipment and surfaces is currently a concern within Australia. The Victoria Managed Insurance Authority (VMIA) received reports of cracking and breakages in a number of medical devices, electrical outlets and plastic fittings used in a hospital environment [5]. The Therapeutic Goods Administration (TGA) subsequently issued a medical device safety update highlighting that certain disinfectant wipes and detergents can damage medical devices if the cleaning agent is incompatible with the device's plastic surface [6]. Similarly in the UK, the Medicines and Healthcare Regulatory Authority (MHRA) alerts highlighted damage to some medical equipment, stating that both detergent and disinfectant wipes can cause damage if incompatible

with the polycarbonates and blends (thermoplastics) used in these medical devices [7,8]. Whilst their subsequent alert focused on a small number of specific items of medical equipment, other electronic items may be prone to similar issues resulting in cracked polymer housings (environmental stress cracking) resulting from exposure to cleaning agents and disinfectants [9].

It is important to choose the correct wipe. The advantages in using combined detergent/disinfectants as a ready-to-use wet wipe are clearly evident [10-13]. Using detergent-only wipes means that some organisms will remain and surfaces should always be dried after cleaning [14]. In contrast, combined detergent/disinfectant products should be allowed to air dry to allow for maximum wet (and therefore active) contact between surface and disinfectant [15]. Disinfectant-only wipes (such as alcohol) have no cleaning action and are therefore prone to misuse if cleaning does not occur before disinfection [16]. There is also evidence that detergent/disinfectant wipes are more effective at reducing bacterial burden than detergent-only products – which have also been demonstrated to transfer organisms to multiple surfaces [14]. Ready-to-use disinfectant wipes have been proven to significantly increase cleaning compliance whilst resulting in more rapid and effective processes – with associated cost savings in terms of staff time [17].

It is important to choose equipment that is both constructed from polymers tolerant of the agents required for safe healthcare and wipes that have maximum compatibility from a company that has worked proactively to gain equipment manufacturer approvals. GAMA Healthcare collaborates with manufacturers of healthcare equipment to test compatibility, produce decontamination procedures, and inform polymer choice for new products; you can find a list of equipment for which GAMA products are approved for use at clinell.com/compatibility.

When buying equipment that will need to be decontaminated between uses, the mantra should be “if you can’t clean it, don’t buy it”.

Clinell's Universal range of surface disinfection products are quaternary ammonium compound (QAC)-based and have a comparatively neutral pH, making them compatible with a broad range of surfaces. Although the QAC benzalkonium chloride was thought to be the cause of a number of incompatibility issues, it is considered by the TGA to be both safe and non-corrosive when used at a concentration of 0.5% or less [6]. Clinell Universal Wipes contain <0.5% benzalkonium chloride, making them compatible with a broad range of materials.



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Sustainable infection prevention: is it possible?

Cathryn Murphy*

When it comes to environmentally friendly alternatives, infection control is coming late to the table. Some options are available, but serious research and investment is required to progress further.



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Every day the Australian healthcare sector provides hospital-based care and services to several thousand Australians. In 2014–15 there were 1322 hospitals in Australia. Of these 698 were public hospitals and 624 private hospitals that employed about 330,000 and 64,400 full-time equivalent staff respectively. In the same year Australian hospitals provided almost 10.2 million hospitalisations.¹

However you choose to look at it, Australia's health care is a large, busy and complex system. To deliver its services this system is a major user of environmental resources and it inevitably makes a lasting and wide-ranging impact on Australia and other parts of our planet. Regardless, there is little written on how Australia's healthcare system can reduce its environmental impact and to the author's knowledge, specific actions that the Australian infection prevention and control community can take are yet to be defined.

In a seminal US-based paper published in 2011 Pyrek suggests that appropriate activities for infection preventionists to consider include:

- environmentally preferred purchasing;
- reducing chemical use;
- actively seeking alternative sustainable products;
- engaging in green building;
- reducing consumption of energy, water and raw materials;
- minimising waste;
- engaging in recycling programs;
- transitioning to renewable energy sources;
- eliminating incineration; and
- improving transportation strategies.²

The purpose of this article is to showcase opportunities to reduce the use of potentially dangerous chemicals in hand hygiene products by converting to those containing more natural alternatives with equivalent efficacy.

Since the mid-1880s, hand hygiene has been recognised as the most effective method of preventing and controlling healthcare associated infections (HAIs).³ More recently, it has become a key indicator of an organisation's commitment to patient and staff safety with multiple formulations of alcohol-based hand rub (ABHR) solution promoted as the "products of choice".³ A very recent prospective study conducted in a European haematology transplant ward suggests that clinicians perform on average 53 hand-rub activities (HRAs) per day using 160 mL of ABHR. They also note that the frequency of HRA is likely to vary depending on location, HCW-type and time.⁴

Experts recognise that an ABHR must contain between 60% and 95% alcohol to be effective against a wide range of potential

pathogens carried on healthcare workers' (HCWs') hands.⁵ Typically, the types of alcohol used in ABHRs are commonly either isopropanol, ethanol or n-propanol, or a combination of two of these.⁶ The efficacy of these agents can be affected by the type of alcohol, its concentration, how it is used, how much is used and for how long.⁶ ABHRs may also contain additional antiseptics, sporicides, emollients, gelling agents, foams, colourants, fragrances and water. For reasons of commercial in confidence, some of these ingredients may be undeclared on ABHR labels yet the product may still be compliant with local regulatory and labelling requirements.⁶ Given both the high frequency and volume routinely used, for HCWs these "hidden" ingredients or the ways in which they are metabolised may be potentially harmful for either or both the HCW and the environment.

In the US the Food and Drug Administration has recently shown their concern for the safety of community use of ABHRs by requesting additional scientific data from ABHR manufacturers to support the safety and efficacy of their ABHR formulations. The FDA is seeking safety assurances regarding manufacturers' use of alcohol (ethanol or ethyl alcohol), isopropyl alcohol and benzalkonium chloride, all of which are commonly used in ABHR formulations used frequently and for extended periods by HCWs around the world.⁷

As more HCWs question the long-term personal and environmental safety of frequent use of chemicals in health care, it would seem reasonable that more natural options present greater personal, patient and environmental safety. A good example of this is a new natural product for hand hygiene which contains alcohol derived from sugar cane and corn, not isopropyl alcohol. By using formulas based on Australian botany, including eucalyptus oil, the Australian-based team manufactured a range of antimicrobial skin antiseptics and hard surface disinfectants that have broad-spectrum antimicrobial, antibacterial, antifungal and viricidal efficacy and are compliant with the National Industrial Chemicals Notification and Assessment Scheme and the Therapeutic Goods Administration (TGA) requirements.

Inevitably, future generations of HCWs will face increasingly complex infection prevention and control challenges. Hopefully progress in the development of safer, environmentally friendly, effective chemicals and non-chemical alternatives will be prolific. If not, like many other areas of Australian health care, the infection control community must accept its contribution to an unsustainable environment future.

Disclaimer:

Assoc. Prof Cath Murphy RN, B. Photog, MPH, PhD, CIC is a consultant to multiple medical manufacturers globally including elyptol Australia. Views expressed in this article are

the author's own. No company or client had any input into this manuscript and no remuneration was received for it.

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When something 'sterile' is not

Professor Ramon Shaban*

Contaminated sterile ultrasound gel causes an outbreak of blood stream and other infections.

Central to good surgical practice and health care more broadly are the principles of asepsis: ensuring the absence of bacteria, viruses and other microorganisms, and of cleaning, disinfecting and sterilising to achieve asepsis for high-quality and safe care.

To deliver such health care, professionals undertake a range of practices that typically involve the use of infection control products, the quality of which is fundamental to patient outcomes in clinical care.

A recent event here in Australia highlighted how and why, when colleagues at the Gold Coast University Hospital and the Canberra Hospital experienced the consequences of a product failing to meet sterility requirements.

Contaminated sterile gel

Published in the *American Journal of Infection Control*, a paper I co-authored reported on the outbreak of bacteraemia and infection in 11 patients, predominately in intensive care units, caused by contaminated sterile ultrasound gel used in central line insertion and sterile procedures within four hospitals across Australia.

We first identified the organism *Burkholderia cenocepacia* in the blood culture of a patient from the intensive care unit (ICU) at the Gold Coast University Hospital in late March 2017.

In a matter of weeks other cases were identified. In early May, after comprehensive investigative work, the outbreak investigation team identified the point source as contaminated sterile gel packaged in sachets for use within the sterile ultrasound probe cover, precipitating a global safety advisory alert and recall.

In total, 11 patient isolates of *Burkholderia cenocepacia* with identical MLST sequence typing were identified within four hospitals

across Australia. The contaminated gel sachets had been sourced internationally and distributed nationally.

Fortunately, in this instance, my colleagues and I across Australia were able to arrest this national, potentially international, point-source outbreak quickly. This required a rapid, integrated and coordinated response across Australia working with key agencies such as the TGA.

An uncommon occurrence

While outbreaks of *Burkholderia cenocepacia* are not uncommon, those that do occur are typically associated with contamination of non-sterile solutions and products, often from deep environmental contamination. To discover that the point source was sterile, or what should have been sterile, ultrasound gel was something of a surprise. There was clearly a breakdown in the manufacturer's process. And yet it serves as a salient reminder of the importance of asepsis, and of cleaning, disinfection and sterilisation for high-quality and safe care.

In this instance, the contamination was associated with bacteraemia, which is a serious and life-threatening condition. While it is difficult to determine the full extent of the result of this outbreak, the patients that were identified in this study recovered.

Healthcare professionals rely heavily on the quality of products they use to achieve good patient clinical outcomes. Put simply, clean products enable good, clean outcomes. Unclean or dirty products lead to bad, sometimes catastrophic outcomes.

Moreover, it demonstrates how important quality therapeutic goods are to achieving safe outcomes, and how on occasions all that is sterile is in fact not.

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Miele's PG85 Washer-Disinfectors:

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The washer-disinfectors from Miele Professional convince with a high cleaning performance and load capacity. The newly developed spray arms with a revised nozzle design and arrangement of jets ensure full spray coverage. Furthermore, an optimised water circuit and a significant increase in pump pressure at the injector nozzles guarantee the thorough and safe reprocessing. The washer disinfectors impress with a high load capacity of for example up to 6x DIN mesh trays per cycle.

An innovative heater pump enables both time savings and high standards of efficiency. All machines are equipped with EcoDry allowing the load to dry and cool down faster (with AutoOpen): The door of the machines automatically open at the end of a programme. Hot, moisture-laden air is released when the temperature has dropped below 70°C. It is the optimal safe and convenient solution for wards or even lumened instruments.

Application-specific programmes, a variable-speed pump for the perfect spray pressure in all programme phases and a multi-stage filtration system which is highly efficient in removing particulate soil from water in circulation, are further benefits of Miele's washer-disinfectors. A large-surface central filter in upper basket or load carrier guarantees optimum protection against the blockage of the ward utensils and reprocessing excellence is afforded by closely monitoring the spray pressure and the rotation of the spray arms in order to prevent any loss in circulation pressure or to

immediately identify obstacles in the path of the spray arms.

On all models, the door is automatically drawn closed by the new AutoClose function: slight contact between the door and the machine is all that is required. The new, high-end control panel also doubles up as a door handle. Touch-on-steel technology makes for exceedingly simple operation and ease of cleaning. A quick tap on the screen is sufficient to select and launch programmes. The three most frequently used programmes can be saved as favourites.

Miele's PG85 washer-disinfectors stand not only for great performance, efficiency and safety, but also for the perfect solution for reprocessing ward utensils in hospitals and surgeries.

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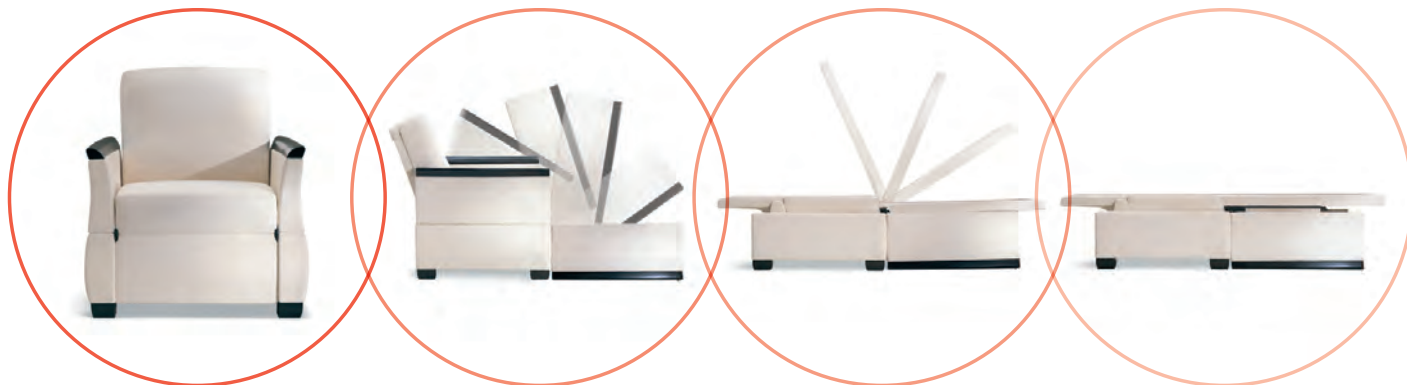
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Including friends and family in the healing process



Not so long ago, the friends and family of hospital patients had to abide by strict visiting hours. Today, many healthcare organisations are taking a different approach, welcoming guests to stay as a key part of the patient care team. This about-face is being driven by mounting evidence that shows the support of guests can help healthcare organisations meet their goals. From improving patient outcomes to reducing costs, the most valuable thing a healthcare organisation can add to a patient room may be a “welcome mat” for family and friends.

For starters, having a familiar face and hand to hold night and day is simply what many patients want. Susan Frampton, president of the nonprofit patient-centred organisation Planetree, says: “Across regions, cultures, generations and other demographics, certain hallmark patient-centred practices consistently surface as the way patients want their healthcare delivered. They don’t want to be needlessly (and somewhat arbitrarily) separated from their loved ones. They want their loved ones to be supported to take on aspects of their care and care management.”⁽¹⁾ Numerous studies demonstrate the value of family to patients’ engagement in medical decision-making,⁽²⁾ treatment adherence,⁽³⁾ quality of healthcare processes^{(4), (5)}, physical and mental health,⁽⁶⁾ and mortality.⁽⁷⁾

Evidence shows that welcoming families into the patient room is good for patients, family members, caregivers and healthcare organisations;

- Having a support person in the room appears to improve patient safety — reducing overall costs.
- The patient’s guests can improve communication and understanding between the patient and caregivers.
- Family support during treatment is linked to higher patient satisfaction scores.

- Creating family zones in patient rooms encourages guests to be part of the healing process.

What exactly does a “welcoming space” look like, and how can an organisation make use of evidence-based design to create a space that encourages families to stay nearby?

One study suggests that a designated family area with recliners, sofa beds and sofa bed drawers may increase the perception that family members are welcome and encouraged to remain close to their loved one and to stay longer.

The importance of families in the healing process is becoming more widely recognised around the world, with research showing their presence can be an effective tool for improving patient outcomes, communication, and satisfaction, and reducing costs. As more organisations open the door to family involvement, expect a continuing evolution of solutions that make them feel welcome in the patient room and encourage them to stay.

Sleepover 1.2.3 Chair

Designed for healthcare environments where space is limited, the SleepOver 1•2•3 quickly transforms from a traditional looking chair to a single sleep surface — with no mechanisms

needed. A durable wood frame and spring seat construction keep guests comfortable whether sitting or lying down. The sleeping surface hides neatly within the chair when not in use.

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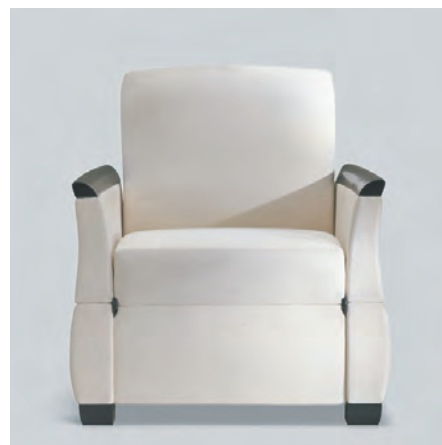
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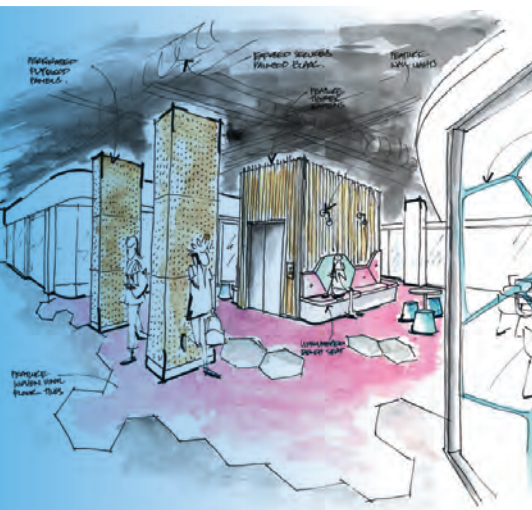
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Cutting-edge healthcare training centre opening at Bendigo TAFE

Launching in time for the 2018 academic year, state-of-the-art pedagogy and architecture combine to form the new Bendigo TAFE Health and Community Centre of Excellence.



Images credit: eCHC



CHC partner
Justin Littlefield.



With Bendigo's population forecast to expand by a third by 2031, the \$17.7 million project — funded by the Victorian Government — has been designed to help students build the skills required to address the high demand for qualified hospital, aged-care, home care and community services personnel in the Greater Bendigo region.

Created by architectural firm ClarkeHopkinsClarke (CHC), the design vision focused on opening the existing building up to the community and celebrating the learning within, as well as providing advanced educational facilities including simulation labs that allow students to experience what it's like to work in a hospital ward.

"This has been an exceptional project because it brings together new and innovative approaches to pedagogy, health care and technology," said CHC partner Justin Littlefield.

"The project utilises ClarkeHopkinsClarke's expertise in both health care and education to create a vibrant, community-focused sense of place for Bendigo TAFE. It's a 21st-century educational facility that integrates cutting-edge technology, connectivity and flexibility to prepare the students of tomorrow to work in the healthcare industry, a sector where medical advances mean service delivery is always changing."

ClarkeHopkinsClarke's design for the new facility was inspired by three conceptual pillars: being transparent, healthy and connected.

The first pillar is literal as well as metaphorical. The centre is located in an existing L-shaped, three-storey brick building at the city campus which has had its life extended through this transformative project. The heavy masonry appearance has been reimaged, with much of the existing brickwork replaced by a high-performance, double-glazed glass facade to enhance natural light, which will in turn aid productivity and wellbeing for students, lecturers, staff and visitors.

"Our vision was to transform the campus into an active, vibrant place that prioritises the learner and creates an open and welcoming

street interface for the Bendigo community. Located on a prominent corner, the building will become a beacon of change for the campus, with all the creative ideas and learning occurring within the building being visible from the outside," Littlefield said.

Littlefield reflects on the importance of sustainable design in supporting all three pillars, especially health and connectedness.

"A critical component of achieving a healthy building is providing an engaging, inspiring and environmentally sustainable place to learn and to work, one with abundant natural light, ventilation and connections to the outdoors," he said.

"Environmentally sustainable design is always an important consideration within our design process, but was especially key in the development of a healthcare-focused centre of excellence. The project has allowed us to transform the existing building, reconfiguring the internal environment to really maximise the usability of spaces. The building has literally been recycled!"

Other environmentally conscious initiatives include reinsulation for improved thermal performance; the use of sustainably sourced timber and steel; the specification of motion- and daylight-sensing LED lighting; low-emission paints, joinery and adhesives; and water-saving, low-flow toilets and tapware.

The design also focuses on activating the lower level with opportunities for outdoor presentation spaces and collaboration zones that can be used for student activities.

"Celebrating that theme of connectivity, we wanted to create a place that promotes the use of a central courtyard as a student and community space where people want to congregate and share ideas," Littlefield said.

An appropriately cellular theme is reflected in the internal planning, landscape, interior design and wayfinding, one inspired by the essence of the courses to be offered in the centre and reflecting the adaptable, future-focused and connected characteristics of the centre.



**Bendigo
TAFE CEO
Trevor
Schwenke.**



"The cellular theme shapes a unique identity for the centre, instilling pride of place for teachers, learners and the community alike, and providing free-flowing pathways and visual cues that define the users' journey," said Littlefield.

The new centre will also boast adaptable learning spaces including mobile AV terminals and learning environments with operable walls, enabling spaces to be adjusted depending on class sizes and changing course needs over time. The design provides for these dynamic and interactive collaborative spaces alongside more secluded personal study zones.

Bendigo TAFE CEO Trevor Schwenke said the new facilities will transform the delivery of healthcare education in the region.

"The current building and learning environment at the Bendigo TAFE city campus was outdated and difficult to navigate. ClarkeHopkinsClarke's expertise and health industry knowledge has been invaluable in designing a centre that will enrich our vocational training delivery and greatly improve the student experience at Bendigo TAFE," Schwenke said.

In line with the TAFE's approach to education and training, the centre has been designed to bring students and employers together to address the employment and training needs of local industry.

"Close collaboration and consultation with industry will be the key to the success of

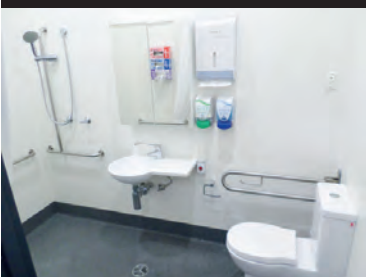
Bendigo TAFE's new Health and Community Centre of Excellence. Our graduates will be work ready because their training is aligned to industry needs," Schwenke said.

The Health and Community Centre of Excellence will deliver courses to those studying community services and health care, such as nursing, dental assistance, community services, and early childhood education and care. Four new health and community courses are also being introduced by Bendigo TAFE as part of the centre's opening, with more courses to be later introduced based on industry feedback.

For more information, visit: www.chc.com.au

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An alternative approach to a sustainable outcome

Having delivered more than 45 major health facilities globally, we know that the maintenance and operation of hospitals represents a bigger cost to clients than the initial capital outlay.

Therefore design solutions that take a long-term view and find ways to reduce costs over a hospital's operational life stand to have a huge impact on the financial bottom line, as well as staff and patient wellbeing.

At the recently completed \$147 million University of Canberra Public Hospital (UCPH), Multiplex implemented an alternative delivery model to do just this.

The Territory required a delivery method that encouraged "innovation in the design, construction and long-term maintenance of the facility". It also sought a flexible, interactive tender process that would establish a long-term partnership of delivery for both design and construction, and hard and soft FM services.

Multiplex proposed a bespoke Design, Construct and Maintain (DCM) solution whereby we designed and constructed the new hospital in partnership with facilities manager BGIS, who was colocated within our office and embedded in the decision making. This arrangement enabled the design solution to address both the client and facilities management requirements of the facility for 25 years.

Importantly for ACT Health, our delivery method transferred 'whole of project' risk away from the client to the joint contractor and facilities management provider for the contracted 25 years.

The UCPH is a dedicated facility for sub-acute services including rehabilitation and mental health services with 140 overnight inpatient beds and 75 day places, as well as additional outpatient and teaching spaces.

In proposing a design solution, Multiplex consulted with ACT Health and determined how best to meet the needs and operational efficiencies of the various stakeholders for the hospital's operational life.

We considered things like site orientation, access, user demographics, security and wellbeing, patient welfare and longevity of stay and proposed a number of design modifications. For example the facade was simplified to enable easier cleaning and maintenance, reducing whole-of-life costs for the facility whilst addressing climatic issues, maintenance, storm and fire as well as fresh air and security.

This delivery approach enabled nimble, long-term design decisions to be made to reduce overall costs, while maintaining flexibility and control for ACT Health throughout the delivery and into the operation of the facility.

This model of project and services delivery is a true partnership without the constraints commonly found in similar PPP approaches. Modifications can be made quickly and effectively to represent the best interests of all stakeholders, and achieve the best outcome for patients in a 'Best for Project' ethos.



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For more information please visit Multiplex Website: www.multiplex.global

While Group Homes look, smell and feel like a home, they're actually an aged-care residence, specialising in residents suffering from dementia. Group Homes Australia founder and CEO Tamar Krebs talks about her unique model of aged care.



As a child, Tamar Krebs was by her great-grandfather's side as he completed his life journey, surrounded by family and friends; his final words to her, "I love you, doll", imprinted on her memory, and stirring a passion to become a nurse.

Krebs grew up believing that when people die, they pass away at home with their loved ones by their side. It wasn't until completing her nursing studies that she realised that this wasn't the case, kindling a dream to create a residence for people with dementia that looks, feels and smells like a normal home.

Bringing a dream to life

Krebs worked in aged care for over 18 years, managing nursing homes and dementia units.

"I started to ask myself why we as a society feel the need to warehouse our elderly," she said. "If we live our entire life in a community surrounded by friends and family then why, at a person's most vulnerable point in their life, do we lock them away from society and their familiar suburb. Why do we focus on their disability?"

Feels like home

This inspired her search for a solution that would allow people to age in a home that looks, feels and smells like a home in a person's familiar suburb.

In 2012, Krebs's dream became a reality when she established the first of a series of group homes in St Ives, NSW. The homes have no logos or signs and they are set up to be just that — homes. They blur into the leafy suburb and street, a haven where residents can live with dignity and respect, and where families feel they are simply visiting their loved one at home.

Unique design

Krebs ensures that all Group Homes Australia residences are nestled within local communities that are familiar to residents and their families.

The homes are designed with an open internal layout with multiple breakaway spots to allow residents to enjoy respite while in full view of staff and other residents, encouraging socialisation.

The home looks like a traditional home but has discreet modifications such as recessed rugs into the floor to reduce trip hazards, no raised racks for sliding doors, dark tiles in the bathrooms with a bright white toilet. Indoor design and decor feature period-sensitive times. Designs include large clocks, vases, sturdy wooden furniture, encyclopedias and so forth.

Residents can bring their pets, grandchildren can visit, and the residents' bedrooms are filled with photographs and sentimental memorabilia to make them feel at home. One resident even brought his greenhouse with him.

Experiencing life

Residents can choose to eat together at one of the homely dining areas or alone in their rooms if they choose to do so. They can continue to experience normal life, enjoying

tasks like cooking or baking, visiting the local shops to purchase ingredients for a favourite recipe, assisting with hanging washing on the line, gardening and even hosting a BBQ with assistance. Tasks are broken down into manageable steps.

However, in addition to normal home life there are organised outings and activities, such as to local beaches, parks, concerts and to local preschools, where both the residents and the children benefit from the interaction. There is yoga on offer, they can listen to meaningful music on iPods, play card games, do puzzles and do crafts. Children from local schools visit to sing and read with the residents.

A prospective resident's perspective

Dementia advocate and sufferer of early onset dementia Kate Swaffer recently visited three GHA homes. She was overwhelmed and grateful to Krebs for bringing such a compassionate and nurturing 'residential care home' to Australia.

"I definitely had no sense I was visiting a 'facility providing residential care'," Swaffer said. "There were people in rooms folding up the washing, staff and residents in the kitchen preparing meals, smells of cooking and not a hint of urine.

"Doors that opened out onto gardens and recreational areas, with washing lines, and one even with a swimming pool. Laundries in working order, various areas to sit and relax or play cards or watch television.

"This is the first time, and only time, I have felt I would or could move into 'residential care'. As a person living with a diagnosis of dementia, I cannot tell you how much of a relief it felt to see someone who 'gets' it... following their intuition, their heart, and actually 'doing it' so well."

For more information about Group Homes Australia, visit: www.grouphomes.com.au.



Group homes look like a normal home, with no signage. Below: Grandchildren can visit residents in a home-like environment. Right: Tamar Krebs baking with residents. Bottom left: Residents can choose to eat together in the group dining room.



"This is the first time, and only time, I have felt I would or could move into 'residential care'."
— Dementia sufferer and advocate Kate Swaffer



Improving healthcare environments with sustainable rubber flooring

Managers and owners of healthcare facilities are tasked with ensuring an environment that is conducive to the health and safety of staff and patients. This means selecting materials and maintaining them in ways that promote a healthy, comfortable and productive environment in which to work and heal.

As the market leader, nora systems provides a complete flooring system that is quiet, safe and comfortable underfoot, while being permanently resilient and helping reduce fatigue and strain on backs and joints. The floorings have extremely low VOCs, aiding indoor air quality, supporting the healing process and enhancing comfort for patients, staff, and visitors.

Comfort Underfoot Reduces Strain

While appropriate footwear can help reduce the harmful effects of prolonged standing and walking, nora rubber floor coverings offer an important weapon in the battle against muscle fatigue and aching backs, legs, and feet. Its high-quality content and structure make nora rubber flooring especially resilient, easing the stress of walking and standing, ensuring comfort underfoot and allowing staff to concentrate on their work rather than the

pain in their feet. This same resiliency makes it easier for staff to move carts, wheelchairs and other equipment across rooms and down hallways. At the same time, it offers important slip-resistant properties and can provide a softer landing than other floor coverings, minimizing the impact of falls or missteps.

Easy Maintenance Saves Time and Money

Rubber flooring's dense, non-porous surface resists chemicals and disinfectants, such as betadine. Most spills can be wiped up easily without any staining, and the floor can be cleaned simply with a mop and little more than water. Harsh cleaning chemicals, waxes, specialty coatings or strippers are not required. This eliminates the need for labor-intensive stripping and re-coating, which saves money on cleaning products and labor.

The floor's simple cleaning regimen also means that large areas of a facility do not need to be out of service while wax is applied and allowed to dry. This is especially important in busy healthcare facilities that operate 24 hours a day, seven days a week, and translates to fewer, less intrusive interruptions for patients and the medical personnel treating them.

No Fumes Means Better Indoor Air Quality

Additionally, the absence of fumes associated with harsh cleaning products, waxes and sealants contributes to improved indoor air quality, as does the absence of PVCs, plasticizers, and halogens in the flooring.

This, in turn, helps create an environment that safeguards health and promotes healing, especially for patients with respiratory conditions and allergies. nora rubber floor coverings have third-party low VOC emissions and content certification from numerous organizations throughout the world, including Blue Angel and GREENGUARD Gold.

The floor also offers healthcare facilities a durable solution, even where heavy equipment and furnishings are moved regularly and foot traffic is heavy. In fact, the lifespan of rubber flooring can be as long as 30 years, reducing the need for frequent removal and disposal and delivering long-term savings.

In addition, rubber flooring provides electrostatic dissipative properties that protect the hospital's investment in sensitive instruments and electronic equipment, eliminating malfunctions or damage caused by electrostatic charges.

Quiet Supports Concentration and Healing

All of this equipment, as well as the hustle and bustle of a busy healthcare facility, can create a noisy environment — one with the potential to distract staff members and prevent patients from getting the rest they need. The noise abatement properties of rubber flooring can address issues related to noise. In fact, rubber floor coverings have been shown to attenuate 70 percent of unwanted noise and reduce sound by as much as 17 decibels.

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Imagine a hospital where patients love the food and rave about their seamless experience. Sound like a pipe dream? Not at Cleveland Clinic in Abu Dhabi, which has used empathy and innovation to create a five-star experience for patients, carers and visitors. We spoke to Stefan Tornau, Executive Director Hospitality Services, who came to Australia for the 36th Institute of Hospitality in Healthcare (IHHC) conference in Adelaide.

Empathy + innovation = outstanding patient experience

Laini Bennett

When a patient walks into hospital for an operation, they could easily feel overwhelmed, especially in a large facility. Which is why, scattered throughout Cleveland Clinic Abu Dhabi, there are welcoming faces to greet you; staff in distinctive red jackets whose specific job it is to help you find your way.

Throughout the foyers, elegant wooden trolleys serve complimentary Arabic coffee and dates, in keeping with Middle Eastern traditional hospitality. And if you're on the way to an outpatient appointment, or to visit a seriously ill patient, you can drop your children off at the childcare facility.

It's all part of Stefan Tornau and Cleveland Clinic Abu Dhabi's 360-degree approach to excellence.

Tornau has worked in the hospitality and healthcare industries for 30 years; he leads the planning and delivery of hospitality services and





Cleveland Clinic
Abu Dhabi.

integration of non-medical and clinical services at Cleveland Clinic Abu Dhabi. Tornau is a driving force at creating an outstanding patient experience at the clinic, and is responsible for implementing a hospitality culture at every touchpoint of the patient journey.

Room service

There are two different types of patient rooms at the clinic: a standard hospital room or a suite, which has a guest room attached to it where a spouse or caregiver can stay.

The suites provide a level of service not commonly seen in Australian hospitals. The guest room, much like a hotel room, has a coffee machine, mini fridge and main meals included. A butler acts as the patient and carer's personal assistant, coordinating medical appointments and helping with all elements of their stay, from ordering food to having clothing laundered.

Meals are served by the butler, who will lay a tablecloth and serve each course separately, much like in business or first class on an aeroplane, rather than all courses on the one tray as per the standard room. Regardless of which room type you stay in, there are no disposable plates or utensils. Patient meals are served on good-quality china wear with stainless steel cutlery and glass cups.

For visiting dignitaries such as the royal family or heads of state, there is a royal suite, more akin to an apartment, with a lounge room where the patient can receive visitors, if they are well enough. Aside from additional space, the dinner settings are high end, with gold-leaf-edged plates and crystal glasses.

But when it comes to the food, everyone receives the same, five-star standard.

Just what the doctor ordered

When most people think about hospital food, they think economy-class airline food; tasteless, unattractive and barely filling you up. "That perception was something we definitely wanted to change," said Tornau.

"Our aim was to create something good looking and good tasting, that was part of the healing process." After all, when you don't feel well, having someone cook your favourite dishes can make you feel better. "Our patients are the same. Good food is part of the healing process."

There are 32 dietary menus for a doctor to select from, and patient meals are chosen by the doctor's recommendation based on what is best for each patient. The meals have been designed to cater to the multiple patient circumstances — from a post-operative liquid diet to meals for diabetics. "Each menu has >



Cleveland Clinic Abu Dhabi key facts

- Opened December 2015
- Semigovernment facility
- 30+ medical and surgical specialties
- 50+ subspecialties
- 26 operating theatres
- 364–496 beds
- 409,000 m2 of floor
- 410,000 outpatient visits annually
- 90,000+ helpdesk calls per month
- 1.3 million meals per annum
- 80 nationalities represented
- 35 languages spoken

specific criteria such as calorie intake, and the nutritionals are analysed and specific for that diet," said Tornau. "It's like a prescription; we cannot deviate from it."

The patient can order items from their allocated menu 24/7, using an iPad in their room, via their TV screen or by calling the 24-hour foodservice helpdesk. The system monitors the quantities ordered, so patients cannot go over the required calorie intake. Meals arrive in their rooms within 45 minutes.

Soon, patients and carers will also be able to learn how to prepare and cook meals suitable for the patient's circumstances in a purpose-built demonstration kitchen. "If a patient has a requirement to change their lifestyle in terms of food, we will train and teach them, their carers and families. We don't want them to just eat healthy food in the hospital then return home to old habits. We want a sustainable outcome for the patient," Tornau said. It's in keeping with the clinic's holistic approach to the patient experience.

Catering to the Cleveland Clinic Abu Dhabi team

With over 4000 people working at the hospital, on-site training occurs daily among

Above left: Throughout the foyers, trolleys serve complimentary Arabic coffee and dates. **Above:** The royal tea service includes crystal glasses and gold-leaf china wear. **Right:** Serving dinner to a patient. **Below:** Hospital suite with attached guest room.



both clinical and non-clinical staff. As a result the clinic provides catering and banqueting services, in separate kitchens designed specifically for this purpose. It also services meetings and conferences held at the hospital with external parties, such as with other hospitals, doctors, pharmaceutical companies and healthcare-related corporates.

In addition, there are two staff cafeterias: one with ready meals, the other more like a cafe where people pay for their own food. Staff can also choose to eat at the clinic's retail facilities, where there are two restaurants, a sandwich counter and a convenience store that serves food and snacks.

Achieving quality standards

Quality hospitality is integral to the clinic's culture; it is part of the accreditation process and is built into the key performance indicators of the entire management hierarchy, from the CEO down.

The clinic's hospitality services are audited annually by external UK-based organisation Hospitality Assured, which measures the

clinic against its 'Hospitality Assured 9 Service Standards' and provides benchmarking against other healthcare organisations globally.

To ensure all bases are covered, Tornau also seeks internal observations through an annual staff engagement survey, gaining feedback from people at the coalface, and a biannual internal operational survey, conducted by a third party.

So what is Tornau's advice to other hospitals seeking to offer outstanding hospitality?

- Provide a seamless approach; a seamless handover and experience for the patient.
- Listen to the patient first. Spend quality time talking with them and prompt them to provide detailed feedback on the service standards.

"We take a holistic approach, to provide quality not just from a medical perspective, but in every corner of the hospital," said Tornau. It's all part of the 360-degree approach to excellence.

Bringing Design to Healthcare

Zenith extends their reach to the health sector with a carefully curated range of products.

In branching into healthcare, there were a number of important factors for Zenith to address. As a company, they wanted to be able to provide solution-based furniture that would not only increase comfort and enhance patient recovery but also reduce the stress and physical fatigue of caregivers.

The Zenith CARE Collection is a carefully curated range of products designed to cater to the specific needs of those within the healthcare sector. The aim is to offer products that effortlessly enhance the lives of patients and caregivers. The entire collection has an emphasis on safety and support without compromising on style and design.

However, there is nothing 'institutional' about the designs. The furniture conveys to users and patients a sense of comfort and relaxation. The range places the focus back on people without losing sight of stringent functional requirements thus meeting all ergonomic and hygienic demands of the healthcare sector.

Just off the announcement of a newly formed partnership with Brunner, German design powerhouse of exemplary quality, understated formal language and outstanding functionality, Zenith CARE showcases the Buena Nova collection by Roland Schmidt Design.

The collection features stackable chairs with an easy-to-grip handlebar along the back frame, armchairs, high-back armchairs and tables, which boasts exceedingly sturdy construction, conveying longevity and an overall sense of security.

Not without customisable features, Buena Nova is available with or without armrests, upholstered seat and backs and different back heights to ensure an ideal level of comfort and individualism. The traverse under-frame offers a detachable seat liner making it easy to clean and meet a particularly high level of hygiene standards across the collection.

Accompanying the collection of chairs are the Buena Nova wooden tables, a series of straight-lined, functional and elegant frames. In keeping with the criterions of the healthcare sector, Buena Nova offers varying profiles and embedded support which are wheelchair accessible.

A comfortable and highly versatile collection, Buena Nova wholly encompasses all of the key characteristics of a staple healthcare range.

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Buena Nova

NSQHS Standards

New edition drives better, safer care for patients

Margaret Banks*

The second edition of the NSQHS Standards takes into account new evidence and feedback from the health sector on the first edition, resulting in a set of standards that is simplified, reduces duplication, has an increased clinical focus and addresses important clinical gaps.

The primary aims of the National Safety and Quality Health Service Standards (NSQHS Standards) are to protect the public from harm and to improve the quality of health service provision.

The NSQHS Standards were developed by the Australian Commission on Safety and Quality in Health Care in partnership with the Australian, state and territory governments, the private sector, clinicians, patients and carers.

In 2011, Australian health ministers mandated that the NSQHS Standards would be implemented in all Australian hospitals and day procedure centres. As of 30 June 2017, 1319 hospitals and day procedure centres have been assessed to the NSQHS Standards.

To ensure that the NSQHS Standards remain current and consistent with best practice and continue to address areas of priority for safety and quality in health care, the commission has updated them, releasing the second edition in November 2017.

The second edition of the NSQHS Standards builds on the substantial achievements of the first edition and will drive better, safer care for patients and consumers in Australia.

The second edition has taken into account new evidence and feedback from across the health sector on how to improve on the first edition. This has resulted in a set of standards that is simplified, reduces duplication, has an increased clinical focus and addresses important clinical gaps.

The first edition

The first edition of the NSQHS Standards provides clinical and organisational risk

mitigation strategies designed to reduce the occurrence of high-prevalence adverse events. The areas covered are:

- Governance for safety and quality in health service organisations.
- Partnering with consumers.
- Preventing and controlling healthcare-associated infections.
- Medication safety.
- Patient identification and procedure-matching.
- Clinical handover.
- Blood and blood products.
- Preventing and managing pressure injuries.
- Recognising and responding to clinical deterioration in acute health care.
- Preventing falls and harm from falls.

To meet the NSQHS Standards, health service organisations must put in place safety and quality systems that improve the safety and quality of care provided to patients and consumers. In fact, ensuring these systems exist is the purpose of the NSQHS Standards. The NSQHS Standards direct safety and quality outcomes that must be achieved, but allow flexibility for health service organisations to implement actions in a way that suits their specific requirements, including their patients' risks and the complexity of the services that they provide.

Impact of the first edition

Key improvements associated with implementation of the NSQHS Standards (first edition) include:





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- A decrease in the rates of healthcare-associated infections.
- Better documentation of adverse drug reactions and medication histories.
- A decrease in rates of intensive care admissions after cardiac arrest and the rates of in-hospital cardiac arrest.
- A reduction in antibiotics prescribed due to improvements in antibiotic stewardship.

The NSQHS Standards have driven improved governance in health service organisations by helping to expand the roles of governments, executives, boards, clinicians and consumers. The NSQHS Standards include an emphasis on empowering consumers and patients in contributing to decision-making around the governance, design and delivery of health services, and this has had an impact throughout the health system.

What's new in the second edition

The second edition aims to improve care for patients at risk of poor health outcomes and fills some of the important safety and quality gaps that were identified by the health sector in the first edition. The second edition includes new content on mental health and cognitive impairment, health literacy, end-of-life care and Aboriginal and Torres Strait Islander health.

There are eight standards in the second edition replacing the 10 NSQHS Standards in the first edition. As with the first edition, the eight standards cover areas of health care that have been identified as involving high risk

for patients, and which could be addressed by preventative actions and in which improvement is warranted. These are:

1. Clinical governance.
2. Partnering with consumers.
3. Preventing and controlling healthcare-associated infection.
4. Medication safety.
5. Comprehensive care.
6. Communicating for safety.
7. Blood management.
8. Recognising and responding to acute deterioration.

Transitioning to the second edition

The NSQHS Standards have been approved by the COAG Health Council and were released on 28 November 2017. Accreditation to the second edition begins from January 2019.

The commission will provide support to health service organisations as they prepare for the implementation of the second edition of the NSQHS Standards. Much of the content in the second edition will be familiar and detailed resources will support the transition to the second edition and implementation of the new content areas. The NSQHS Standards Advice Centre is available for any questions.

NSQHS Standards Advice Centre:
1800 304 056

accreditation@safetyandquality.gov.au



*Margaret Banks has worked as the National Standards Program Director with the Australian Commission on Safety and Quality in Health Care since July 2006. In this time she has worked with stakeholders, consumers and jurisdictions to develop and implement the National Safety and Quality Health Service Standards and a program of systematic accreditation reform across the Australian health system.

Prior to this appointment she worked with the Department of Health and Ageing, the Australian Health Workforce Advisory Committee and the NSW Health Department on matters relating to workforce. She has also worked as a physiotherapist for nine years in both Australia and Papua New Guinea, and held an Adjunct Professorship with the University of Technology Sydney.

A framework for success

Dr Andrew P Howard*

The *Digital Hospitals Handbook* is the first of its kind in the world to be developed by any standards organisation. It is designed to provide a solid framework to maximise the chances of success of a digital hospital program.

At the turn of the century, information technology, or digital initiatives in health, was attracting bad press. Some criticisms were justified, others not.

Early adopters in the industry were learning and adapting rapidly and although there were sometimes challenges with timelines and budgets programs¹, they were usually delivering quality objectives.

There was, however, a lack of confidence amongst senior stakeholders that digital hospital programs could be consistently delivered on time, on budget and achieve the target outcomes.

Injecting confidence into digital programs

An agreement was signed with Standards Australia to support the development of a handbook that would contain principles and recommendations to inform the design and implementation of digital hospitals. Members included experts from medicine, nursing, information technology, building projects, industry bodies (clinical and technical), and both public and private health sectors.

The handbook was recognised as the first of its type in the world to be developed by any standards organisation.

As an inaugural project with a diverse group of experts and stakeholders, the handbook itself was a challenging initiative. The goal was to provide principles and recommendations for the users, not technical advice. Balancing utility and shelf-life of the handbook was a core issue in the rapidly evolving worlds of health and IT; too general and the handbook would be of little use, too specific and its life would be short.

Fortunately there was no lack of enthusiasm or interest from committee members and other parties. After nearly two years of discussion, whiteboarding, reference site visits, drafting and extended peer review, the *Digital Hospitals Handbook* was published (SA HB 163:2017, *Digital Hospitals Handbook*).



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Defining a digital hospital

Digital hospital initiatives are arguably the most complex, but also amongst the most rewarding, programs undertaken in the health system. The handbook defines a digital hospital, contains nearly 50 recommendations structured under six core principles and describes the application of these under phases of implementation from business case development through to benefits realisation. It includes a digital hospital vision and framework with referenced case examples.

In a digital hospital, practical knowledge about information management and information communications technology (IM&ICT) continually informs the design and adoption of new innovative models of care, with transformation extending out into the care continuum.

The target audience of the handbook is broad and so it was written in plain English with a comprehensive glossary. CEOs in particular are encouraged to consult the handbook prior to embarking on a digital hospital program.

A framework for success

The most important message the handbook conveys is that the development of a digital hospital is foremost about people (health consumers, health providers, and support staff), good governance, engagement and process. One of the six principles is devoted to leadership, staffing, risk management and governance. Other key issues include

the consideration of organisational strategy in the planning phase and that program outcomes must be tightly aligned with organisational objectives.

Conversation in the committee meetings exemplified some challenges of language and perception of roles and activities in the space. "Architect? Which architect?" The builders were referring to the building architect and the IT experts meant the enterprise (information management and technology) architect. A common understanding of roles is critical to success since collaboration between design roles, in particular, is crucial to deliver on the objectives.

As the first of its type and with a defined budget and time frame, the handbook was also written to leave room for future versions. Nevertheless, the handbook in its current form provides a solid framework to maximise the chances of success of a digital hospital program.

*Dr Andrew P Howard chaired the technical committee for the *Digital Hospitals Handbook* (IT-039, *Digital Hospitals*). Dr Howard's original professional background was as a medical practitioner.

1. The word program, rather than project, is used deliberately when referring to a digital hospital initiative. There was agreement that these initiatives are never a single project but rather a complex program of interdependent projects.



Integrated valve regulator simplifies oxygen therapy

Coregas Integrated Valve Regulator (IVR) conveniently combines cylinder, regulator, flow meter and valve in a robust, lightweight and ready-to-use package. Coregas IVR, accessing medical oxygen quicker, easier and removes the operating costs of external regulators and flow meters. Simply attach your tubing or equipment to the unit and continue caring for your patient.

Features and benefits

Regulator and flow meter are integrated into the valve

- No regulators or flow meters required
- Saves time with no equipment changeovers
- All standard flow settings are provided (1-15 lpm)
- No maintenance costs, as product is maintained by Coregas

Dual oxygen outlets

- Users can attach tubing to the firtree outlet and/or equipment to the D.I.O.
- Simple, versatile functionality makes it convenient to use.

Contents gauge

- Clearly displays gas contents in real time with no need to touch the open/close valve
- High capacity cylinder
- Increased gas capacity of 0.639 m³ (639 litres) saves time with less cylinder changeovers
- Potentially lower stock holdings
- User-friendly design
- Two ergonomic carry handles
- Tamper proof seal provides quality assurance
- Lightweight cylinder package makes handling easier
- Plastic coating makes it easy to clean
- Staff training in 6 easy steps
- Sleek, professional appearance ensures patient confidence

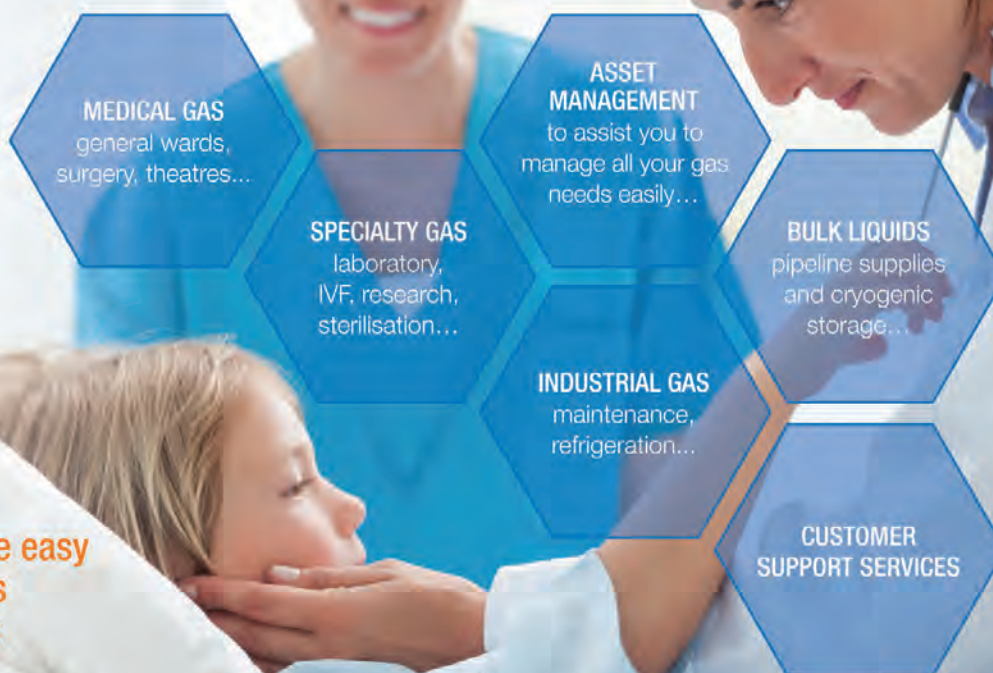
Specifications

Product code	202178 Gas Medical oxygen
Gas content	0.639 m ³ (-639 litres) at 15°C and 101kPa
Cylinder fill pressure	20 000 kPa at 15°C
Diameter	115 mm
Height	524 mm
Weight (empty)	3.5 kg
Weight (full)	4.4 kg
Outlets - Firtree	Tubing diameter: 6-8 mm
(Therapy tubing connection)	Flow rates: 1, 2, 3, 4, 5, 6, 7, 8, 10, 12, 15 lpm
- Diameter index outlet (D.I.O.)	Maximum outlet pressure (g): 400 kPa
Also referred to as sleeve index system (S.I.S)	Flow rates: up to 300 lpm as per AS 2902:2005



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The health benefits of contact with nature

There is strong evidence that supports the idea that contact with nature, through viewing or being in landscapes with vegetation, water and other natural features, relieves stress and provides human health benefits. It makes sense that providing patients and clients with easy access to gardens and natural open space within (or very close to) the grounds of hospitals and community health centres can assist in rehabilitation and contribute to the overall wellbeing of clients and staff alike.

In keeping with this evidence, an early parenting service in Melbourne developed a new children's sensory garden for use by families, staff and visitors at one of their locations. Dr Claire Henderson-Wilson and Dr Amy Shaw of the Health Nature and Sustainability Research Group at Deakin University collaborated with the centre on a study evaluating the use and benefits of this new therapeutic garden, gathering evidence which will be both useful and applicable to other healthcare settings.

Nineteen staff and thirty-six parents completed surveys relating to their experiences in the new garden, and some were interviewed. The

results suggest that the new sensory garden is highly valued by families and staff alike. Staff and parents reported that on a personal level, spending time in the new garden makes them feel happier and less stressed. The majority of staff indicated that they believed the new gardens afforded families numerous benefits such as improving their learning opportunities, and improving their demeanour (e.g. appearing less agitated, calmer, and more relaxed). These results were mirrored by parents, who also felt that the garden provided these benefits to a similar extent. This synergy between the responses of staff and parents indicate that staff members have been able to adequately assess the perceived benefits of the new garden.

The benefits to both staff and families reflected in this report provides support for the further development of new gardens at this centre as well as the development of similar sensory gardens in other healthcare settings.

The Health Nature and Sustainability Group, within the School of Health and Social Development at Deakin University, works closely with a number of environment and

sustainability organisations to undertake research, engage in partnerships, share expertise and conduct projects. This research and engagement helps inform our postgraduate coursework programs in health sciences, health promotion, health economics and public health.

The positive health effects of engaging with nature go hand in hand with how we manage that engagement in a sustainable way. Through exposure to learning in systems thinking, environmental and urban planning, environmental justice and policy and planning for the future, Deakin's students are given the opportunity to assist in the development of resilient and sustainable communities of the future — communities where engagement with the natural environment is seen as a vital element in health and wellbeing.

To find out more about postgraduate courses in health and sustainability, go to <http://www.deakin.edu.au/courses/find-a-course/health-sciences-and-allied-health/health-and-sustainability>.



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Faster, Safer, Easier.

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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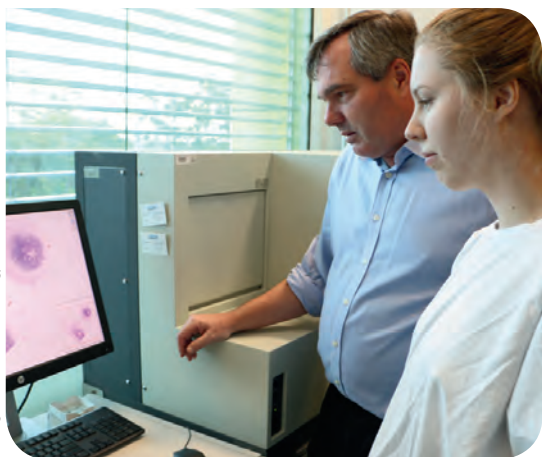
A Day in the Life

...of Dr Mark Formby, Acting Director at NSW Health Pathology's Anatomical Pathology Laboratory at John Hunter Hospital.

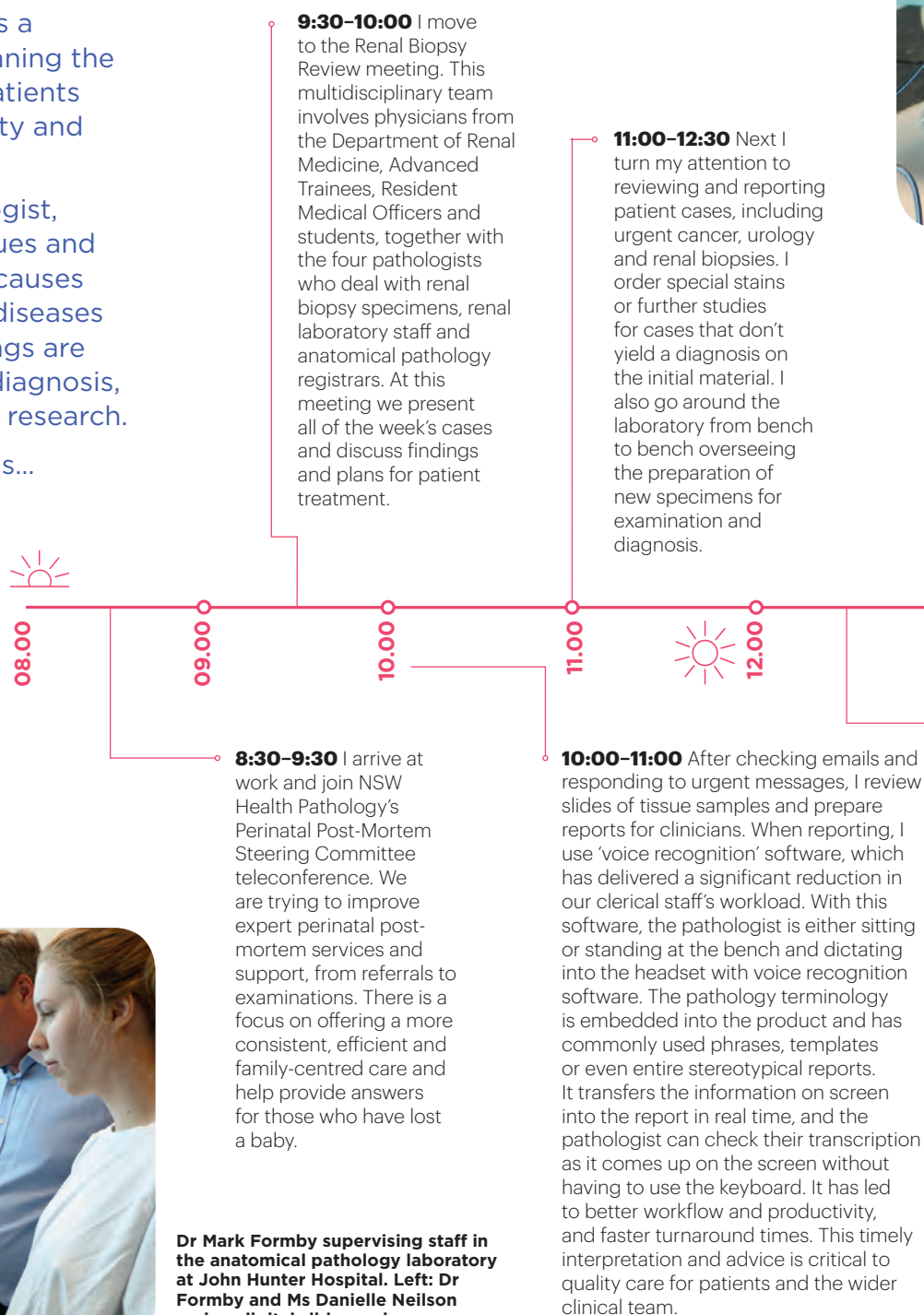
Around 70% of people who enter hospital will need pathology to assist with their treatment. Behind the scenes, there's a dedicated workforce manning the microscopes to ensure patients have access to high-quality and timely results.

As an anatomical pathologist, Dr Formby examines tissues and organs to determine the causes and effects of particular diseases such as cancer. The findings are fundamental to medical diagnosis, patient management and research.

His day looks a bit like this...



Dr Mark Formby supervising staff in the anatomical pathology laboratory at John Hunter Hospital. Left: Dr Formby and Ms Danielle Neilson review digital slides on large screens instead of microscopes.





Dr Mark Formby reporting on slides using voice recognition software.

14:30–16:00 I prepare cases for tomorrow's Urology multidisciplinary team (MDT) meeting. I enjoy being part of a multidisciplinary team, where I contribute to discussions about individual patients with a team of surgeons, radiologists, oncologists, nurses and other colleagues. Between us we discuss all aspects of each patient's care and review all the available evidence to make decisions about the best treatment or if any further investigations can be offered to the patient. Typically, the surgeon provides the background to the case, the radiologist shows the scan and I'll describe the pathology findings, including the presence of any markers that will help decide the best course of treatment.

12:30–14:30 I work with our lab technicians reviewing new cases on large screens instead of microscopes. These digital slides allow pathologists to zoom in to measure and pinpoint features in tissue samples in ways we haven't been able to before. Digital images are stored centrally and can be accessed remotely from any digital pathology workstation. This makes it easier to call for us to obtain important second opinions from other pathology experts, no matter where they're located.

16:00–18:00 I return to my examination and reporting and also assist with audiovisual set-up for a regular meeting that brings together pathologists and local gastroenterologists. We review cases and discuss other aspects of the speciality, including research activities. I check emails again and find there is an urgent response needed to approve the selection criteria for a recruitment advertisement.

Digital innovation delivering smarter services

Here's a snapshot of some of the NSW Health Pathology projects underway.

A new view with digital anatomical pathology

The anatomical pathology (AP) workplace is being revolutionised by going digital. Digital AP means slides are viewed on screens instead of microscopes. This allows pathologists to zoom in to measure and pinpoint issues with tissue samples in ways they haven't been able to before. Slides are stored centrally and accessed remotely from any digital pathology workstation.

Structured reporting improves accuracy

Structured reporting is backed by software that provides a series of predefined fields where pathologists can record data for patients' cancer reports. It provides clearer, complete and more precise clinical information than the current free-text method of recording results. Report fields align with templates developed by the Royal College of Pathologists of Australasia (RCPA).

Taking genomics data to the cloud

NSW Health Pathology Genomics is pursuing cloud-based technology to manage the collection, analysis, storage and sharing of genomics data. While cloud technology has recently been used for the handling of genomics research data, they're leading the way in adopting this technology for clinical diagnostics within the public healthcare system in Australia. This will enable better, faster access to genomic data which can be more easily shared with experts across our statewide genomics service.

Pathology results in digital health records

Pathology test results from its South Eastern, Western and Rural laboratories are now part of HealtheNet — the statewide electronic medical record system accessed by NSW Health clinicians. HealtheNet provides a summary of a patient's recent medical history from all Local Health Districts instantly. This is the first time pathology results from NSW have been included. With more than 70% of patient treatment decisions based on pathology, providing easier access to results will help reduce time to treatment and improve care.

Global collaborations

NSW Health Pathology has formed a collaborative partnership with Microsoft, Siemens, Intel, MuleSoft and Dius, to drive innovation in diagnostics. These cutting-edge partnerships combine Microsoft's industry-leading Azure Internet of Things (IoT) platform with Siemens' Open Point of Care management solution (POCellerator). This IoT approach positions NSW Health Pathology to take advantage of new and emerging technologies, and the goal is to create the world's first scalable accredited point of care testing solution that will provide reliable, accessible service to patients and clinicians across the state, including in rural and remote locations.

There's an app for that

NSW Health Pathology is developing an app that will give clinicians secure access to NSW Health Pathology results and allow them to place orders from mobile devices.

To find out more, visit www.pathology.health.nsw.gov.au.



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

One machine for all people

From chaotic emergency rooms to quiet waiting rooms, the healthcare industry relies on technology to perform its tasks reliably so carers can focus on the health of patients rather than the health of their IT equipment. The day-to-day operations of most healthcare facilities produces a great number of printed documents so having printers that can be relied on to handle rigorous use is paramount. When your equipment works well, it is almost invisible, faithfully plugging away and producing prints day in, day out with ease. As a result, it is easy to dismiss the impact a quality machine can have in a healthcare environment.

For care professionals, they need tools that help them do their job quickly, efficiently and reliably. Just as you wouldn't consider an MRI or X-Ray machine that didn't perform flawlessly, the same level of quality must also be demanded from your administrative equipment as well. This is the primary design goal of the latest series of scalable, modular monochrome laser printers. The range is built from the ground up with flexibility in mind allowing you to create the type of system you want. In essence, it is one machine to all people.

Flexible to your needs

Whether it is a smaller two tray printer in a GP office or a high volume floor standing-model in a hospital, the latest range can be modularly adapted to fit your workflow. Brother understands that every healthcare professional is different and that the needs of an environment can change over time. There are seven base models in the range starting at the HL-L5100DN three tray system running at 40 pages per minute through to the larger Multi-Function MFC-L6900DW which sports five trays, a slew of productivity features and a blistering 50 pages per minute speed. Depending on budget and feature set, a base model can be selected then expanded in the future with extra paper trays and various optional accessories. Even the trays themselves come in multiple sizes so you can choose between 250 page or 520 page capacity.

Adding a new paper tray isn't only so you can increase the capacity of paper on the printer but is rather a way to provide extra functionality to the printer as well. By specifying which print jobs use which tray, you can have all your scripts in one tray, pathology slips in another, have one tray for radiology slips and fourth tray for administration/letterheads etc. In a larger environment and combined with networking and workgroup features, a single machine can service an entire ward or medical centre.



Helping you help others

By taking advantage of the modular design and having dedicated trays for different types of jobs, there is never a need to switch paper types, therefore saving administration time. With the latest range of Brother Printers you are also able to share critical patient information while maintaining HIPAA compliance, facilitate electronic health records interoperability, and improve record keeping while enhancing the quality of care and streamlining your workflow.



This great printing solution should work for you to help raise efficiency and free up staff to concentrate on their important work with patients. The healthcare industry is of particular importance to Brother as it is unlike any other business. In a regular office, a half hour saved is only extra minutes for more work but in healthcare that time translates directly to helping people. That is the goal, to help you so you can better help others leaving you to do the important work you are trained for and leaving the worry or frustration of administration to us.

Helping to find the perfect solution

Brother has a dedicated Corporate Solutions Team whose sole purpose is to work with companies to discuss complete technology packages tailored to the specific needs of a workspace. Headed by Luke Howard, Brother International Australia's Commercial Market Development Channel Manager, the team is dedicated to delivering top of the range products and solutions to assist customers in meeting their evolving business needs. The team will endeavour to better understand your print environment and come up with a suite of products to improve your workflow. Our products are compatible/integrated with multiple software packages used in the healthcare industry including Cerner, EPIC and Meditech.

Understanding the Range

Brother's Professional Monochrome Laser range is available at different price points and feature sets. The range is comprised of Multi-Function printers as part of the MFC series and dedicated printers in the HL series. The MFC series has three models namely the MFC-L5755DW, MFC-L6700DW and the MFC-L6900DW in ascending order of price. The Printer series has four models being the HL-L5100DN, HL-L5200DW, HL-L6200DW and the HL-L6400DW, again, in ascending order of price. Starting from a base machine, each new model has additional features, faster speeds and different connectivity options. The top tier machines for the Multi-Function and the Printer Monochrome Laser ranges contain the highest level of innovation on offer with unique technologies perfectly suited to the healthcare industry.

The flagship Multi-Function printer is the MFC-L6900DW which clocks in at a blistering 50ppm. It can be built as a floor standing model with 6 optional trays, a 12.3cm touchscreen and 80 page document feeder. It has 1GB of memory and comes with the added connectivity of Near Field Communication which allows for extra security features and copy tracking. It uses an ultra-high yield toner at up to 20,000 pages and has optional extras available like a mailbox stacker/sorter. This unit would be ideal for a workgroup environment or printing room but will also work brilliantly in a smaller practice or nursing home office.

The HL-L6400DW can also be built as a floor standing workhorse which can pump out prints at a rate of 50 pages per minute and has USB host functionality to be used in conjunction with card readers. It has a user-friendly 4.6cm touchscreen and fast processing thanks to its 512MB of memory. When it comes to connectivity, it has both wired and wireless Ethernet and Near Field Communication compatibility. Like its Multi-Function cousin, it takes advantage of an ultra-high yield toner, can use up to five paper trays (520 input/ 250 output) and is compatible with mailbox stacker/sorter attachments.

Finally, all units, across all ranges, have enterprise level security features such as Secure Function Lock (SFL) 3.0, NFC card reader, Internet Protocol Security (IPSec), Print Archive, Secure Reset, Active Directory and Certificate Management.

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A cyber-induced health scare waiting to happen

Jason Edelstein*

The benefits of internet-connected medical devices have seen many hospitals and healthcare facilities rapidly introduce them, without understanding the security implications of connecting them to the network. We outline how to avoid a potential cyber disaster.

The potential risk of hackers accessing medical devices is huge and the Abbott pacemaker vulnerability is a stark warning to the industry. Not only would hackers be able to get hold of the information held on these devices, such as personal information or medical history, but because these devices are network-connected, hackers can essentially use them as an open door into a hospital's wider network. That's access to all patient files, billing systems and other sensitive information.

Even worse, if hackers wanted to target an individual with one of the intelligent implants, once they gain access to the device, they can tamper with the controls. This could cause anything from a bad night's rest to death, particularly for patients with pacemakers and respirators.

In fact, former US Vice President Dick Cheney was even warned about the risks when he came into office, and had to turn off his pacemaker's wireless capabilities to thwart any potential attacks.

It's imperative these new connected devices are secured properly and updated with the

appropriate patches regularly. Not doing so leaves hospitals and healthcare institutions at risk to a major hack or a cyber-induced health scare.

To avoid a potential cyber disaster, there are a number of precautions hospitals and healthcare institutions can take to ensure these new devices are kept secure.

Security awareness campaign

Perhaps the most important action to take is to educate everyone about cybersecurity issues. This can be as simple as putting posters up as reminders or holding meetings to educate staff on security measures. Our people may be our greatest asset, but they can also be our greatest downfall. That one insecure connected device on the network, clicked link in an email or inadequate password could lead to a major security threat.

Research the manufacturer and the product

Before purchasing any connected medical device, research the manufacturer. This could be as straightforward as a bit of desktop

research, looking at the company's history or seeing if any cybersecurity flaws have been reported. Alternatively, cybersecurity companies can provide threat analysis reports on potential providers to ensure products meet cybersecurity requirements.

Include security requirements in the contract

This will be critical moving forward. Within any contract with a third party, outline all the security requirements the manufacturer needs to adhere to, whether it be within its products or the way in which it connects to your network.

Implement secure configuration

This can be as simple as ensuring the default passwords on devices are changed. It is surprising how many hackers get into networks by trying 'admin' and 'admin' as the username and password. To further protect your data, ensure all data is encrypted, even within those connected medical devices.

Pen test everything

Penetration testing, or pen testing, essentially involves testing the security of a product hands-on, trying to bypass its defences to find vulnerabilities. It's always best to use an independent party, as they will often think laterally about the problem and find ways that the IT team or vendor may never have thought about.

Keep IT in the know

Ensure your IT team is made aware of all new devices and products connecting to the network, so they can implement appropriate security measures and upgrades. Ensure they are connected with your partners, so they can receive the latest patch information as well.

Whilst health care and hospitals are no more vulnerable than other sectors, the consequences are much more dangerous. Our information, sensitive data and wellbeing are all vulnerable if security is not made a priority. The best thing a healthcare facility can do is educate its employees about security awareness. After all, they are in the business of saving lives, and getting them cyber-trained can help them do just that.



*Jason Edelstein is the CTO and co-founder of cybersecurity firm Sense of Security. For more information, visit www.senseofsecurity.com.au.

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Hear your way

Colleen Psarros*

Today, most people take for granted their ability to easily make calls or listen to music on their mobile phones. But for the hearing impaired, this has never been simple — until now.

Cochlear, known for its famous implants, has created a new Made for iPhone cochlear implant sound processor that allows wearers to stream calls and music directly from their iPhone to their implant.

Experiencing hearing loss

Hearing loss is often not thought of as a debilitating health issue. However, unaddressed it can impact all aspects of life, from the development of speech and language to education, career and social interaction.¹ For children, early intervention is crucial so that they can develop oral communication and sound detection skills at the same rate as hearing children. In adulthood, hearing loss is associated with depression, dementia and increased risk of poor health, as well as greater unemployment.²

Unlike hearing aids, cochlear implants don't just make sounds louder, they stimulate the hearing nerves directly, providing access to higher quality, more detailed sound at close to normal levels. The benefits of cochlear implantation include greater speech recognition, less reliance on lip reading, greater ability to carry out a conversation through background noise, better clarity of speech, improved communication, increased quality of life and relationships, greater independence and a fulfilling social life.

Technology making a difference

Thanks to a collaboration between Cochlear engineers and Apple, people living with

severe to profound hearing loss can now stream sound directly from a compatible iPhone, iPad and iPod touch to the new Cochlear sound processor,³⁻⁶ which connects to their implant using low-power Bluetooth technology. They can make phone calls, listen to music in high-quality stereo sound, watch videos and make FaceTime calls. Alternatively, they can stream phone calls and music from an Android smartphone or tablet with the Cochlear Wireless Phone Clip.

Julia Sattout, age 45, has been living with profound hearing loss since her early 20s. Her journey with severe hearing loss peaked in the prime of her career, significantly reducing her ability to foster her client and business relationships. Instead, it saw her confidence severely impacted, withdrawing from busy environments, avoiding using the phone, avoiding client meetings and being reliant on controlling her hearing through a combination of hearing aids and strategies.

Since having the Cochlear Nucleus 7 sound processor implanted, Julia's life has been transformed.

"I have spent many years searching for a solution which would allow me to use the phone. This is the first technology that has provided the ease of use and clarity required to confidently make and receive calls. Being able to stream has reconnected me to the world in ways I didn't expect — I have been able to listen to music again, I have started listening to podcasts for the first time, I stream the radio to and from work in the car



Julia Sattout

and I have even resumed language studies via Skype," Julia said.

After more than five years of not using the phone at work, she is now able to confidently make calls with ease. "It's had a tremendous impact on my ability to be productive and on my enjoyment of work," she said.

Making a difference

Cochlear collaborates with expert hearing care partners such as the SCIC Cochlear Implant Program to help more than 450,000 people around the world of all ages reconnect. With the availability of the Nucleus 7 sound processor, the SCIC Cochlear Implant Program and Cochlear can address important needs for people with hearing loss and make a real difference to how Australians with a cochlear implant manage their hearing.

The connectivity, monitoring and accessibility not only helps people with the day-to-day management of their hearing, it also enables them to interact with friends, family and technology to live their life to the full.

*Colleen Psarros is Clinical Strategy and Professional Development Manager for the SCIC Cochlear Implant Program.

TAKEO₂TM The Innovative Solution for enhanced Patient Safety and Cost Savings in Healthcare Facilities

Air Liquide *Healthcare* is proud to introduce TAKEO₂TM, one of the world's first digital integrated cylinders. Australia is one of the first countries outside of Europe to implement this new technology.



TAKEO₂TM is a major innovation in the Medical Oxygen field. This new generation cylinder combines a built-in pressure regulator, an ergonomic cap and a patented digital gauge, to provide healthcare professionals with the industry's safest and most cost-effective medical oxygen delivery system.

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

What does TAKEO₂TM mean for me?

This solution provides major benefits to healthcare providers:

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

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

Improved ease of use and faster oxygen set ups:

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

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

- With direct and exact information on remaining time, staff members are more confident to use most of the cylinder contents as they have a better control of the autonomy of the cylinder.

- Featuring an integrated valve, **TAKEO₂TM** does not require a separate regulator to be attached. This eliminates the need to purchase regulators for medical oxygen cylinders, or to manage their maintenance and repair.

The use of the integrated **TAKEO₂TM** cylinders reduces redundant and inefficient activities, enables caregivers to reallocate their time on the patients and delivers significant cost savings for the healthcare facilities.

How does it work?

When the cylinder is in use, the patented digital pressure gauge calculates and displays the time remaining in hours and minutes. No more estimations or calculations of the remaining content are required as **TAKEO₂TM** cylinder provides direct intelligible information to medical staff with the remaining treatment time at the selected flow.

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



Safety messages are triggered:

- When oxygen pressure is under 50 bars (1/4 content)
- When the remaining contents fall below 15 minutes

+ About Air Liquide Healthcare

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



Essential expertise: pharmacists stepping up

Kristin Michaels*

Hospital pharmacists, pharmacy assistants and technicians cast a wide net in the Australian healthcare system, partnering with and empowering patients to make informed decisions about their medicine use on hospital wards, in primary care clinics and during home-based reviews.

As evidence-based healthcare professionals, hospital pharmacists are committed to regular review and self-reflection, empowering and expanding what works and disrupting the areas that need improvement.

When it comes to sustainability, a focus on supporting the tools, skills and partnerships of hospital pharmacists offers a three-tiered pathway to boosting the longer term efficacy and efficiency of this pivotal healthcare workforce.

Smart people behind the smart tools

There has been much recent discussion of the economic benefits of automation, following the release of the Australian Government Productivity Commission's Shifting the Dial: 5 Year Productivity Review report in October 2017. When diligently trialled and consistently reviewed, technology can play an important role in supporting the timely, accurate and complete transfer of medicines information when patients are at their most vulnerable: moving from hospital to the home, or vice versa.

A health initiative in New Zealand — introducing smartphone apps to improve care by allowing patients to access to their medical records, schedule appointments, view lab results and request repeat prescriptions — is being watched closely to ensure improvements do not exacerbate disparities of care between digital 'haves' and 'have nots'.

In Australia, hospital pharmacists are playing a key role in the design of the My Health Record system, ensuring medicines information is accessible, understandable and effective in the digital world.

While technological advancement will continue to be a key driver of improvements in health outcomes, it is essential that any move to adopt digital innovations in pharmacy is cognisant of pharmacists' unique expertise and experience, potential risks associated with medicines use and the patient's experience of their own health care.

Flexible skills and Advancing Practice

There are two components to building a more flexible and adaptable pharmacy workforce: supporting Australian pharmacists to realise their full potential through subjective but structured professional development, and entrenching an objective, autonomous mechanism through which pharmacists can gauge their comparative professional strengths and weaknesses.

For hospital pharmacists, pharmacy assistants and technicians, these key components are already up and running.

In November, SHPA launched the pilot year of its Mentoring Program, which will enable mid-career pharmacists to draw on the skills and experience of senior pharmacist mentors to build confidence, sharpen focus, dismantle barriers and grow job satisfaction. It is Australia's only mentoring program for pharmacists based on one-on-one interactions, crucial to fostering personal and professional growth.

Expertise on site

- Hospital pharmacists are equipped and ready to manage greater uptake of digital tools, expand their complex skill sets, and enhance and entrench partnerships that break down professional barriers, all of which improve patient outcomes.
- Harnessing the expertise and experience of hospital pharmacists by supporting the profession to step up is a shot in the arm of sustainability and a win for Australian patients.

That same month saw the timely establishment of Advancing Practice — an independent authority to collate and evaluate pharmacists' evidence and testimonials against five domains. A contemporary, cloud-based program, Advancing Practice endorses the career progression of pharmacists through third-party review, measuring the influence of individual practice on the broader profession and improvements to patient care.

It is both a catalyst for, and a milestone of, career advancement as part of broader efforts to build a more highly skilled, flexible and adaptable pharmacy workforce that will sustainably serve the Australian public for decades to come.

Breaking down barriers

Studies consistently show that optimising quality use of medicines — through prudent deployment of hospital pharmacists wherever there is patient need — strongly benefits the health budget bottom line, aiding the sustainability of the sector.

One such approach involves entrenching hospital pharmacists in multidisciplinary medical teams. A major Australian hospital-based study found that for every dollar spent on a clinical pharmacist to initiate changes in medicines therapy or management, approximately \$23 was saved on length of stay, readmission probability, medicines, medical procedures and laboratory monitoring.

At the same time, designing healthcare models that enable synergies between health professionals that boost health outcomes is a goal we are all invested in. A recent one-month trial at a Sydney teaching hospital saw pre-admission clinic pharmacists complete 72 medication charts as part of an intervention to find out the impact they would have on chart accuracy and completeness; pharmacist involvement charting lowered inaccuracies from 41.1% to just 1.4%.

***Kristin Michaels is the Chief Executive Officer of The Society of Hospital Pharmacists of Australia, with a keen interest and experience in health system design. She is a seasoned board director in the primary, acute and aged-care sectors. Kristin holds qualifications in arts, organisational leadership, governance and health service management. She is a Fellow of the Australian Institute of Company Directors and is accredited as an international partnership broker.**

Coming to grips with **food waste**

Kathy Faulkner*

Waste is highly prevalent throughout the health system, and hospital foodservices represent one of the greatest sources of hospital waste. One study estimates it contributes 50% of all waste produced¹.

Waste is financially burdensome and also represents wasted utilities and labour. A recent Portuguese study estimated 0.5% of their National Healthcare Budget gets thrown away in food waste².

Food waste also has grave implications for the planet — decomposing food in landfill generates methane gas, which is 25 times more potent than carbon dioxide at trapping heat³. Hospital foodservices will produce some food waste due to the demographic they service: patients, whose poor health status can impact their intake and ultimately results in unavoidable waste. But there is also avoidable food waste from overproduction, poor purchasing and poor storage practices. Another obvious, but often neglected source of avoidable waste is unserved plate waste. This occurs when food is plated for a patient but the tray doesn't actually make it into the patient's room. The changing dietary requirements of patients, transfers and early discharges can all contribute to this waste.

Recycle Food Project

Student projects on food waste at The Royal Children's Hospital (RCH) Melbourne estimate the hospital is throwing away in excess of \$127,000/year or \$1.74 per person per day on food. This includes 318 portion controlled (PC) food items per day (30% of all PC food items served) that are returned to the kitchen completely untouched and then thrown out. Half of these packaged foods are shelf stable (do not require refrigeration).

The concept of re-use in a hospital setting remains elusive, for reasons of food safety (both microbial and allergen management), quality control, nutritional consistency and infection control. Anything that has gone into a patient room is considered 'contaminated', and in some cases, with good reason.

With all of this in mind, the RCH undertook work to reduce food waste and cost by introducing the Recycle Food Project. With measures in place to minimise contamination, unserved shelf-stable foods and cutlery are recycled back into the kitchen and used first at subsequent meal times. This saves labour and food costs, and importantly, opens new avenues for waste prevention discussions.

A foodservice supervisor with good leadership qualities and a good understanding of kitchen operations instigated this project. While this is great for



Want to contribute?

Faulkner has put together a scoping survey to better understand how much foodservice waste we are generating (in Australia) and how we are managing it. Its purpose is to seek out what others are doing to reduce – reuse – repurpose – recycle waste. If you're keen to contribute to a better understanding of foodservice waste quantities and management, complete this short survey www.surveymonkey.com/r/Z3QZYF5.

staff engagement, there were still a number of challenges, including staff concerns around food safety and infection control, as well as extra workload. To overcome these concerns, focus was placed on the environmental and moral benefits. Extensive negotiation with staff ensured a fair distribution of the work and assignment of responsibilities.

This project shows how a comprehensive picture of hospital food waste can be used to target areas of high volume, high cost and avoidable food waste.

Accredited Practising Dietitians (APDs) are university-qualified in foodservice management and can lead projects in

foodservice waste. Contact your dietetics department or locate foodservice consultant APDs via 'Find an Accredited Practising Dietitian' at www.daa.asn.au.

*Kathy Faulkner has worked as an Accredited Practising Dietitian (APD) for over 10 years, including eight years as a dedicated Food Service Dietitian. She works at the Royal Children's Hospital (Melbourne) where Food Service and Nutrition operate as a single combined department. Kathy is a member of the DAA Food and Environment Interest Group, which has encouraged this research into the 'cost of food waste'.

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A woman of stature

Laini Bennett

When Maria Palazzolo started at not-for-profit organisation GS1 Australia, she never expected it to become a life-long passion — or career. Nor did she expect, as their CEO, to find she is often the only woman in the room. AHHB talks to her about her career, her advice for women seeking leadership roles and her proudest moments.

After five years as a stay-at-home mum caring for her young sons, Maria Palazzolo found a part-time job that fitted in with her family commitments. But she was dubious about the role. “There was a part-time CEO, another part-timer and me in an office so small that we had to move the desk to let the postman in. I had a makeshift desk made of cardboard,” Palazzolo recalled. She couldn’t understand what the business was about. “The CEO kept talking about these things called symbols.”

It was 1983 and the world was on the cusp of the digital revolution. Barcodes and scanners were being introduced into shops and people were suspicious of them, convinced that the red beam from the scanner was a health hazard for operators and that barcodes hoodwinked customers because products no longer had price stickers on them.

Now, barcodes are used to protect patients, manage procurement and track pharmaceuticals, but then: “The

word ‘barcode’ could not be used due to the perception that they represented a conspiracy,” Palazzolo said. “It was technology nobody understood. I’d never seen a barcode before, it was something totally foreign to me.”

She found the first two weeks on the job very difficult and swore each day that she’d walk out at lunchtime and never return. But as her knowledge grew, her passion grew, and as GS1 Australia grew, Palazzolo’s career grew with it. Some 34 years later, Palazzolo has been CEO of GS1 Australia for 16 years, and the organisation now has over 150 staff, offices in Sydney and Melbourne, and a membership in excess of 17,500 Australian companies. Its impact on the healthcare industry in Australia over the past decade has been significant (see ‘Protecting Lives’, on page 65).

Exceeding expectations

Palazzolo is the daughter of Italian immigrants. Her parents expected her

to marry and have children. Having an education, going to university or having a career was not encouraged. Over time, as she worked her way through various roles in GS1 Australia, it wasn’t career aspirations that motivated her, but a deepening understanding of how the organisation could not only benefit Australian companies but, more importantly, benefit people’s lives.

A hard worker, Palazzolo strove to do her best in every position she took on, and opportunities to progress arose as a result. As second in charge for many years and acting CEO for 18 months, she was often told that she would be the natural successor for the CEO role. However, when the role did become vacant she was told that “she did not have the right stature” for the top job. On seeking an explanation, it became clear that the issue was that she was a woman.

Palazzolo didn’t fight the decision. She told herself she wasn’t there for the title; she was there because she loved what she did, and





“Believe that everything and anything is possible.”

so was prepared to let the CEO role go to someone else.

Recognition

Fortunately, the all-male board at the time had a different opinion and appointed Palazzolo as the new CEO. They knew her, understood her capabilities and trusted her. “I will be forever grateful for their support and belief in me,” she said.

Looking back, Palazzolo regrets that she didn’t stand up for herself more and fight for fairness and equality. “But of course, those were very different times. I feel this is a lesson for other women. It’s okay to be ambitious and to drive for the top job.”

Asked what advice she would have given herself back then, Palazzolo didn’t hesitate:

- “Don’t let what anyone tells you about yourself affect how you feel about your own capability. I let other people make me feel inadequate because I was a female, because I was a mum, because I had >

Protecting lives

People still look at Maria Palazzolo blankly when she says she works for GS1 Australia. Then she says “barcodes” and the lights come on. Most people associate barcodes with retail, but over the past 12 years they have become integral to the healthcare industry.

Palazzolo instigated GS1 Australia’s work in health care, absolutely certain that barcodes could help save lives. Today, barcodes are used in Australia to track pharmaceuticals and expiry dates, prevent counterfeit medication, provide visibility on who and where a patient is and protect them against incorrect medications, dosages and even incorrect procedures.

“If I can do something that goes towards saving one single life, it’s more than worth it,” she said. “Imagine if the whole

healthcare industry used GS1 standards for tracing, tracking, administering and authenticating... How many lives could we help save?”

While barcodes are well known in Australia, the organisation that administers them and oversees global standards for their use is not. “We’re the world’s best kept secret,” Palazzolo quipped. GS1 is a neutral, not-for-profit organisation that develops and maintains global standards for barcodes, facilitating efficient business communication.

Organisations use GS1 standards to improve the efficiency, safety and visibility of supply chains across physical and digital channels in 25 sectors. GS1 now has member organisations in 112 countries, with 1.5 million user companies and 6 billion transactions every day.

www.gs1au.org

Don't let what anyone tells you about yourself affect how you feel about your own capability.



Left: Maria Palazzolo (second from right) with senior executives from Johnson & Johnson at the 2017 GS1 Australia health industry conference. Above: Maria soon after she started at GS1 Australia.

family commitments. Don't let this happen. Trust your own intuition and have a can-do attitude.

- "Don't give up on what you believe in. Continue to push through barriers and roadblocks and always try to find a way to make it work.
- "Believe that *everything* and *anything* is possible."

Working women

Since becoming CEO in 2002, Palazzolo has seen more women in senior roles in organisations, especially in the healthcare industry, but still not enough. However, at meetings she is often the only woman in the room, both globally and locally. While Palazzolo firmly believes the best person for a job should get the job, regardless of whether they're a man or woman, she sees it as her role to ensure women are given equal opportunity to be appointed to a position.

Today there are many women in management roles at GS1 Australia, but it still disappoints her when women turn down roles due to family commitments. "Family is the priority. I understand how hard it is, and it's important to have a supportive partner. I just want to encourage women to try a role first before turning it down," she said.

Proudest achievements

Palazzolo used to feel very guilty about

leaving her two young sons and going to work, which is why, today, she says her proudest personal achievement is that she is the mother of two amazing adult sons who are now wonderful fathers to their own children and who both have very strong work ethics.

She is also very proud of having achieved career success in spite of her background. "I don't have a degree, I come from a migrant family and English was not my first language. So like all good Italian girls of that era, I was expected to be a good daughter, marry and have children.

So I guess the fact that I did that, but also was able to build a successful career in a very male-orientated world, can be considered an achievement," she said.

But when it comes to GS1 Australia's success, she gives full credit to her team. "It's all because of them," she insists. "They love what they do; they feel that they are constantly making a difference. It's a humbling experience watching their passion and commitment. It's important that we have a culture and environment where people are appreciated and can feel happy and be successful."

Which is typical of Palazzolo. Humble, hard-working and, contrary to what she was told all those years ago, a true woman of stature.

Lessons learnt

Advice to up-and-coming female leaders:

- Don't feel that you need to act, dress or behave like a man in order to be successful. "We have all the right skills within us and should not feel that we need to copy the so-called 'corporate' ways of others," Palazzolo said. "What used to be called 'soft skills', and seen as a weakness rather than a strength, have been proven to be the skills needed to achieve and maintain a successful business: empathy, flexibility, understanding, caring and so forth."
- Risk-taking, being bold and brave enough to take chances and being prepared to stand by those decisions — even if they turn out to be the wrong ones — is also something that Palazzolo has lived by, and believes that up-and-coming young executives should practice.
- Find something you love to do and call it *work*.



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Aged Care Review actions

should build on existing reform agenda

Sean Rooney*

In his address to the National Press Club on 25 October, Minister for Aged Care Ken Wyatt announced the release of the Review of National Aged Care Quality and Regulatory Processes (Carnell Paterson Review) by Kate Carnell AO and Professor Ron Paterson ONZM.

The review was commissioned by the federal government in response to revelations of serious issues regarding the care of residents at South Australia's Oakden Older Persons Mental Health Service, a state government-run facility.

Failures of care like those that occurred at Oakden must not happen again and the Carnell Paterson Review is an important opportunity to reflect on what works well in the aged-care system and where there are areas for improvement.

The Review Report contains 10 recommendations for the government to consider. Upon release of the review report, LASA, along with the other peak bodies representing the nation's aged-care providers, has advocated that any proposed reforms are targeted and effective in their focus on achieving quality outcomes for older Australians in aged care.

LASA will work with our industry leaders, consumer groups and the government on proposed reforms to the National Aged Care Quality Regulatory Processes in mutual support for continuous improvement of the quality systems and processes in aged care in Australia.

We share a desire for a strong aged-care sector, supported by an accreditation system that protects older Australians' safety, promotes quality and upholds the standards the community rightfully expects when it comes to care, support and services for older Australians.

Collectively, we need to translate the report's findings and recommendations into appropriate actions and outcomes that will address identified shortcomings and contribute to continuous improvement and community confidence.

LASA observes that any recommendations or changes must be:

- considered in the context of the ongoing reform agenda;
- consistent with the underpinning principles of the reform agenda and acknowledging both the Aged Care Sector Committee's 'roadmap' and the NACA 'blueprint';
- considered alongside existing work underway with regards to the single quality framework, quality indicators, consumer reporting initiatives; and,
- be rigorously assessed with regards to intent, cost, logistics and regulatory impact for providers/consumers/governments.

Minister Wyatt highlighted one specific recommendation that the government is actioning. That is, all future accreditation visits to residential aged-care facilities will be unannounced (with the exception of the initial accreditation visit).

No provider of age services should be alarmed with the practice of unannounced quality audit visits, as unannounced visits are already part of the existing quality accreditation system. Similarly, the aged-care industry is committed to high-quality care 24

hours a day, seven days a week, 365 days a year. This is not negotiable in our industry.

Aged-care providers are advocating for a regulatory system that acknowledges and seeks to remedy quality issues where and when they occur. As an industry we all have a role to play in seeking to continuously maintain and improve high standards in quality care and service. In this spirit, we are cooperating with all key stakeholders to understand where any systemic problems lie and work to address them.

What is comforting to know is Australia's current aged-care quality framework is resulting in the overwhelming majority of Australians in aged care and their families receiving high-quality care, support and services that meet the most stringent national standards. As Minister Wyatt stated at the National Press Club, "Australia is fortunate to have a first-class healthcare system that overall serves us well. It made me think that despite the challenges and the changes required, we have a 'bloody good' aged-care system to build on and we should celebrate this in so many ways."

*Sean Rooney is the national CEO of LASA. He has held several Chief Executive/Senior roles in public, private and not-for-profit sector organisations including the CSIRO, Medicare Local Alliance and in the ACT Government.



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- ✓ Introducing Category Management in Aged Care
- ✓ Procurement Capability in Aged Care Procurement
- ✓ Stakeholder Engagement in Clinical Procurement
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- ✓ Senior Executives, Business Development, Sales/Marketing Managers from suppliers of products and services to the Aged Care sector
- ✓ Advisors, Consultants, Lawyers, business development/sales managers from suppliers of support services to the Aged Care sectors
- ✓ Three tiers of Government involved in Aged Care policy, reform and service delivery

FEATURED SPEAKERS INCLUDE



RICHARD SCHUSTER
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Procurement, Fleet
and Sustainability
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NICK LOUDON
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(FSIP), Food Service
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Sustainability begins with procurement

Rob Cook, Marketing Manager, TenderLink

As organisations become increasingly aware of the benefits of sustainable business practices, they are looking for ways to implement — and demonstrate — sensitivity to environmental, social and ethical considerations.

With a focus on buying appropriate goods and services from reputable and reliable suppliers at the right price, procurement provides a key link, balancing organisational needs with sustainability requirements. After all, what better way to operate sustainably than to buy sustainably?

Tenders provide an excellent opportunity to demonstrate a framework for sustainability. Before anything is bought, organisations can consider their environmental, social and economic policies, then ensure these requirements are clearly defined and specified within their documentation.

In the wake of some very public corporate embarrassments involving well-known brands, increasingly we're seeing tenders include specific questions designed to elicit information around environmental impacts and ethical supply chains. Others go further, by outlining expected standards while also requiring proof.

With well-designed e-tendering tools, it is easy to ensure that suppliers meet your sustainability standards. Tender instruments can be designed to elicit specific information, in a quantifiable form. By

building sustainability requirements into your specifications, you can immediately disqualify bids from vendors who don't "tick the boxes".

Where several "qualified" bidders meet appropriate sustainability standards, good evaluation toolsets can be used to rank them, using pre-determined weightings on key criteria. While there may be some element of subjectivity in the eventual scoring, this process ensures maximum transparency because all weighting, scoring, comments and score change history occurs online.

This transparency is especially important given the heightened scrutiny of public and listed entities. These days, successful procurement involves not only meeting organisational needs, but doing so in a way that complies with broader community expectations — while also demonstrating probity and equity.

Sustainable procurement is here to stay. It's an organisational imperative to do the right thing — and be able to show that you're doing it. That's where good procurement technology comes into its own, achieving the best outcomes and demonstrating your sustainability credentials.

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In Conversation



Doctors from Sydney Children's Hospital in Randwick, Dr Keith Ooi, Clinical Academic and Consultant in Paediatric Gastroenterology and Michael Coffey, Paediatric Registrar, are the founders of PlayMed, an online gaming platform which helps junior Australian doctors become better practitioners through a fully immersive gaming experience.

Following their own experiences in both academia at the University of NSW as lecturers and in practice, both Ooi and Coffey created PlayMed, in their words, "a 'virtual hospital' to help medical students learn through experience, helping them to be better equipped for their first foray into the medical world". We sat down with Dr Ooi to better understand the thinking and development behind PlayMed.

What inspired you both to pursue this?

We've always had a passion for education and identified a gap in the application of serious games in medical education. I (Dr Ooi) was the former pediatric course convener (Phase 3) for the School of Women's and Children's Health, Faculty of Medicine, University of New South Wales (UNSW) and observed that students were still being taught the same way when I was a medical student (and that is way too long ago!).

Bedside teaching is a vital component of medical education but can be challenging. There is now a need to teach very large numbers of students and bedside teaching can be daunting to the infant or young child. A learning tool that allows experiential and immersive learning in a safe and virtual environment was lacking.

Can you tell me about the gaming platform you use for PlayMed?

Essentially, we developed a virtual children's hospital that allows students



to utilise experiential learning in a highly immersive environment, online. Our platform, PlayMed, has been noted by many to be similar to the Sims computer game. Sims is a highly popular computer game where the user controls a range of characters in a 'game of life' style experience. PlayMed is very different to Sims in that it's a highly immersive learning experience for students. However, both Michael and I actively play computer games to keep our inner children happy and felt this was a highly engaging way to get students involved in their learning.

How did you develop the program?

We developed the program in conjunction with Lionsheart Studios. This was only possible with funding support from the Learning and Teaching Grant, UNSW and School of Women's and Children's Health, Faculty of Medicine, UNSW. After many hours of collaboration with Lionsheart, they were able to build the hospital environment online and provide us with a platform to develop the paediatric cases for medical students to manage.

How have you been testing PlayMed and what's the response been by students so far?

We conducted a case-control study (of PlayMed game vs standard teaching)



“We feel the results were so dramatic because we were able to engage students in a new and interesting way.”



among final-year medical students at UNSW and found a significant increase of 25% in knowledge. Overall, the group of students who played PlayMed had a positive shift in their knowledge compared to those not exposed to PlayMed. We also conducted a survey on the students who underwent this study. The vast majority felt the game helped improve their understanding of the topic and will help them prepare and deal with real-life clinical scenarios.

Why do you think it resulted in such an increase in learning?

We feel the results were so dramatic because we were able to engage students in a new and interesting way. Furthermore, PlayMed allows students to explore experiential learning, this allowing them to make management decisions and get feedback on their correct and incorrect decisions.

What's next for PlayMed?

We intend on integrating PlayMed into the curriculum at UNSW over the next one to two years and we have also had interest from other Australian universities to incorporate this technology into their schooling.

We also have several future plans and directions. This includes developing more extensive content to cover the most common paediatric conditions relevant for medical students. We have been grateful to receive



support from the Pro Vice Chancellor, Education (PVCE) Portfolio at UNSW to enable this. Beyond this we will explore the development of content relevant to nursing staff, junior doctors and allied health staff.

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Out & About



Victorian Premier's Sustainability Awards

Western Health won the Health category in the 2017 Victorian Premier's Sustainability Awards for a program that recycles single-use metal objects (SUMIs).

Melbourne company eWater Systems won the night's top honour — the Premier's Recognition Award — for developing water splitting technology that is used to clean and sanitise facilities such as hospitals, schools, manufacturing businesses and restaurants chemical-free.

The Premier's Regional Recognition Award was presented by the Minister for Energy, Environment and Climate Lily D'Ambrosio to Exemplar Health, which developed Bendigo's new hospital, regional Victoria's largest.



1. The eWater Systems team — CEO Adam Trevaskus, Director Dawn O'Neill, Minister D'Ambrosio and eWater's Founder and Chairman, Phil Gregory, with MC Charlie Pickering. **2.** The Exemplar Health team — Sarah McAdie (Director Communications and Marketing, Bendigo Hospital), Michele Morrison (CEO Exemplar Health), the Minister and David O'Shaughnessy from Lend Lease accepting the Premier's Regional Recognition Award. **3.** Catherine O'Shea and Andrew McGavin from Western Health

MedTech Industry Awards Dinner

The MedTech 2017 Industry Awards Dinner brought together industry leaders, suppliers and clients to celebrate and pay tribute to a year of innovation and leadership in the medical technology industry.

1. Welcome Address. Ian Burgess, CEO, Medical Technology Association of Australia. **2.** Private Health Insurance Reform — Daniel Toohey, Executive Director, Morgan Stanley; Dr Rachel David, CEO, Private Healthcare Australia; Michael Roff, CEO, Australian Private Hospitals Association; Penny Shakespeare, Acting Deputy Secretary Health Benefits, Department of Health; and Ian Burgess, CEO, Medical Technology Association of Australia. **3.** Patient engagement in clinical trials — Melanie Gentgall, CEO, PRAXIS Australia; Roslyn Ristuccia, Clinical Research Unit Manager, Cancer Care Centre, St George Hospital, NSW; Tina Soulis, CEO, Neuroscience Trials Australia; Lillian Leigh, Patient Advocate; Tanya Hall, CEO and Founder, Hearts4Heart; and Janelle Bowden CEO, Research4ME. **4.** Gordon Stenning receiving MTAH Honorary Life Membership at the Industry Awards Dinner held at Doltone House on Wednesday, 1 November 2017. Ian Burgess, Gordon Stenning and Gavin Fox-Smith. **5.** Will Obamacare trump President Trump? Dr Dora Hughes, Former Health Advisor to President Barack Obama.



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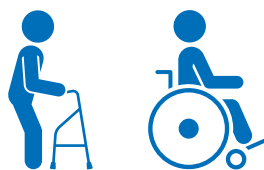
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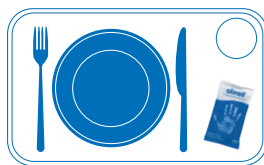
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