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KEEPING NURSES INFORMED, CONNECTED AND INSPIRED

The potential and pitfalls of AI

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Ageing smart

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The nursing profession in a digital age

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ARTIFICAL INTELLIGENCE AND INNOVATION

Australian College of Nursing

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For enquiries or to submit an article, please email **publications@acn.edu.au.**

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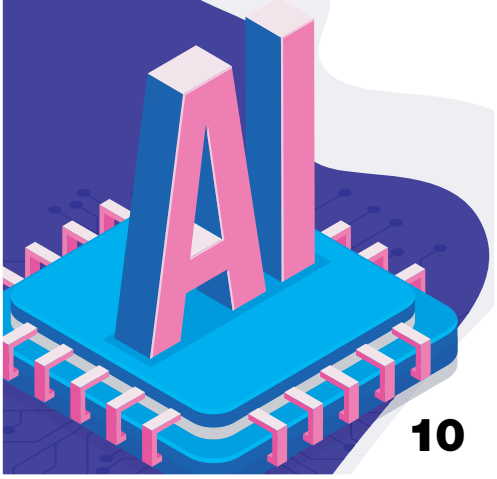

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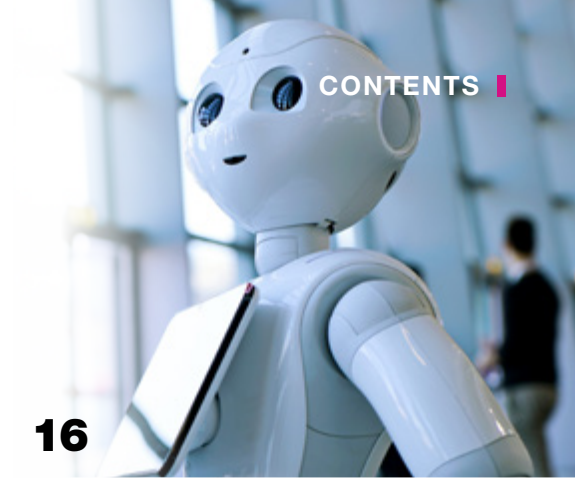

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President's report

PROFESSOR CHRISTINE DUFFIELD FACN
AUSTRALIAN COLLEGE OF NURSING PRESIDENT

As an undergraduate student, I was influenced by nurse theorists such as Virginia Henderson and Jean Watson, and my nursing practice was guided by the nursing process and nursing diagnoses – theories and practices probably in limited use now. Over the past 20-30 years our understanding of illness, treatments, procedures and diagnostics has transformed the delivery of health care services and unsurprisingly, nursing practice and factors that influence our practice have also changed.

Health care is and probably always has been, a data rich environment. The difference now is that much of the data is electronic and readily available, providing huge opportunities for artificial intelligence (AI) (Pepito and Locsin, 2018). Put simply, AI uses computer software algorithms to perform tasks which have usually required human input and intelligence (Fritz and Dermody, 2018). Clinically relevant information can be sourced from large datasets to guide clinicians' practice. The availability of massive amounts of data is likely to increase exponentially with the introduction of the electronic health record.

Individuals in our society currently have a range of wearables and mobile apps available to them which monitor and record various aspects of their health such as heart rate and distance walked. AI technology extends this to increase connections between individuals and hospitals, GPs and other service providers. Using AI, virtual assistants can interact with individuals daily "tracking vital signs using sensors and connected devices" providing information in real time and remotely (Sensmeier, 2017:18). This sort of technology has the potential to change the way nurses do their job, the information they can collect, and their role in data analysis and interpretation.

However, the information we get may not always be accurate. Anyone who has ever tried to type ACN on their smartphone or computer and had the device change this to CAN will know how frustrating technology can be when it thinks it is smarter than we are! The data nurses receive must be meaningful. Fritz and Dermody (2018) argue that there is a gap in the transfer of clinical knowledge between nurses and engineers which results in the development of technologies which are less useful than they could be. There is widespread agreement that nurses must be involved in the development of AI systems for the information to be useful (Fritz and Dermody, 2018; Pepito and Locsin, 2018; Sensmeier, 2017).

Understanding the data, making sense of what it says and acting on it are the nurse's job. Nurses are there to react to the unforeseen and unpredictable circumstances which occur with patients and do so with consideration of the individual and his/her individual characteristics (Pepito and Locsin, 2018). Artificial intelligence may replace some of our mundane tasks allowing more time for patient-centred care (Pepito and Locsin, 2018); it may allow older people to remain in their homes longer (Chapman, Miller and Spetz, 2019); it may augment the knowledge we have about our patients/clients; or change nursing practice in ways we haven't yet thought of. It changes but does not take away the importance of the nursing role.

> **"Anyone who has ever tried to type ACN on their smartphone or computer and had the device change this to CAN will know how frustrating technology can be when it thinks it is smarter than we are!"**

The decision to act on the information received still rests with the nurse and at times this information will not come from technology. The frightened 90-year-old woman alone in her hospital bed at the end of the corridor who knows she is nearing death wants a nurse who understands that what she needs is someone to just sit there and hold her hand... without having to be told.

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Hello!

Welcome to the Summer edition of the Australian College of Nursing's quarterly member magazine, *The Hive*.

ADJUNCT PROFESSOR KYLIE WARD FACN
AUSTRALIAN COLLEGE OF NURSING CHIEF EXECUTIVE OFFICER

The landscape of health care technology is ever-evolving. And one of the biggest technological transformations is being brought about by artificial intelligence (AI). The world over, health care systems are increasingly using AI to trial complex surgeries, detect chronic diseases such as cancer and even mimic a therapist.

Being at the frontline of health care, we need to consider the implications of AI in nursing. In ***The potential and pitfalls of AI***, **Dr Ruth De Souza FACN** discusses how machines can systemise tasks and improve care through accuracy in diagnoses and treatment. Whether it's using immersive technologies such as augmented and virtual reality to perform surgeries as **Brad Chesham MACN** explains in ***Future of nurse education*** or the use of the humanoid robot Pepper in **Wendy Smyth MACN**'s ***The power of Pepper***, the future of nursing will be different – and better.

However, as the first step, it's vital to educate nurses to understand the technology, as **Zerina Tomkins MACN** and **Kalpana Raghunathan FACN** write in ***Preparing nurses for a digital future***. Nurses can then become part of this digital evolution and execution, and not be mere bystanders. In ***Ageing smart***, **Dana Dermody MACN** talks about how a 'smart home' – in-home smart sensor technology – has the potential to help nurses predict falls in aged residents or monitor sleeping and eating habits in adults with dementia and create a plan of care accordingly.

By embracing artificial intelligence and innovation, nurses stand to gain rather than lose. A digital health care system can improve patient experience, resulting in better patient care and reduction in burnout experienced by nurses. Predictable and routine tasks can be automated, and nurses can focus on providing better 'person-centered care' and devote more time to nurse-led research and redesign.

As **Dr Jen Bichel-Findlay FACN** observes in ***The nursing profession in a digital age***, if nurses can be empowered to be digitally proficient and innovation-aware, we can combine our experience, compassion and critical thinking with the analytical, computing power of a machine.

With this in mind, we can envision the future to be one in which health care is equally accessible by all and every nurse is able to work to their full scope of practice.

With Catherine McGregor AM at the Let's Talk Leadership event in Canberra

National Nursing Now Roadshow in Gosford

ACN INSTITUTE OF LEADERSHIP

The Australian College of Nursing (ACN) continues to advance nurse leadership by introducing new opportunities for nurses around Australia to realise and fulfill their leadership potential. In October 2019 we set a national standard for the capabilities required for nurse executive positions through the launch of the Nurse Executive Capability Framework. The first of its kind in Australia, the framework supports up-and-coming nurse executives to follow a clear career pathway towards becoming a nurse executive and allows current nurse executives to discover how they can further upskill and succeed in their present roles.

At the 2019 National Nursing Forum we announced the formation of ACN's Institute of Leadership, which supports nurses to continuously develop their leadership capabilities at every stage of their career. The Institute of Leadership encompasses our renowned Emerging Nurse Leader Program, the prestigious Mid-Career Nurse Leadership Program, the new and exclusive Nurse Executive Leadership Program, the Graduate Certificate in Leadership and Management, the Let's Talk Leadership event series as well as a range of short courses.

Launching in April 2020, the Nurse Executive Leadership Program is a career accelerator for ambitious nurses who want to strengthen their influence and command respect and recognition. The program was developed to support those currently in, as well as those aspiring to, nurse executive roles to meet the capabilities of ACN's Nurse Executive Capability Framework and set themselves up for success. Program participants receive unparalleled access to accomplished leaders through masterclasses with global and national thought leaders as well as mentoring with C-Suite Executives. Places for the program are strictly limited and allocated by expression of interest only.

For details, visit **acn.edu.au/leadership**

LAUNCH OF A NEW COMMUNITY OF INTEREST

ACN is pleased to announce our newest Community of Interest (COI) – International Nursing. Demonstrating the power of ***neo*** as an engagement and collaboration platform, the COI started out as discussion threads on ***neo*** then grew to justify becoming a COI in its own right. If you have an interest in international nursing issues we encourage you to join the COI via the Regions & COIs tab on MyACN.

The International Nursing COI will provide discussion, networking and support opportunities for all ACN Fellows and Members with an interest in international nursing affairs. It is particularly aimed at those in our membership who:

- are working in Australia but who trained and worked overseas
- were trained in Australia but are currently working overseas
- are working in Australia but who previously worked overseas
- are involved in educational programs around integration and multicultural issues (bridging programs, student overseas placements etc.)
- are interested in international nursing policy and/or perform research around these themes.

Elizabeth Matters FACN has been instrumental in establishing the COI, and has been appointed as the inaugural Chair of the Leadership Team. ACN is now calling for expressions of interest to fill the three remaining Leadership Team roles – Deputy Chair, Communication Coordinator and Secretariat Support.

If you would like to express your interest any of these roles, please email **engagement@acn.edu.au** for a position description.

2020 CPD CALENDAR

As an ACN Member, you receive exclusive complimentary access to a choice of 11 CPD modules. Your membership entitles you to three of these modules for free each year.

Our 2020 CPD calendar is now available so make sure you take a look and plan out your year of CPD. If you are searching for more CPD options, ACN offers a range of short face-to-face, webinar and online CPD courses to assist you in achieving the hours required by the Nursing and Midwifery Board of Australia for annual renewal and authority to practice.

Head to **acn.edu.au/education** to learn more.

ACN CAREER HUB

ACN is excited to announce the launch of Career Hub, a new job seeker platform where nurses will be able to create job alerts, apply directly for jobs and upload their resumes. Employers will be able to upload their advertisements, have their company logo featured and track applications.

Find it here: **careers.acn.edu.au/**

ACN SNAPS

At ACN, we love getting out and about with our members and the wider nursing community! If you attend an ACN function or event, make sure you share your snaps with us through our social media platforms!

Remember to use our membership hashtag #ACNtribe.

Undergrad nurses at University of Wollongong Nursing Shoalhaven campus celebrate Community and Primary Health Care Nursing Week

Nursing Now Roadshow Townsville

The ACN Team at the Aged Care Royal Commission hearing in Melbourne

Nursing Now Roadshow Melbourne

Catherine McGregor AM at the Let's Talk Leadership event with in Canberra

ACN President, Professor Christine Duffield FACN visits Peking University First Hospital

ACN Tribe on a NurseStrong morning walk at Floriade in Canberra

2020: Celebrating our Champions of Change

For hundreds of years, nurses and midwives have tirelessly worked to improve the health and well-being of others. To celebrate their invaluable contribution to global health care, the World Health Organization has declared 2020 as the Year of the Nurse & Midwife.

It's a once-in-a-generation opportunity, not just for nations to show nurses and midwives that they are fundamental to achieving universal health care and sustainable development goals, but for 20 million nurses around the world to showcase how much they do, and how much more they can achieve with more support.

Acknowledging past champions

Modern nursing wouldn't be what it is had it not been for the contribution of nurses before us who challenged the status-quo and changed the course of nursing history. By celebrating the stories of nursing greats such as Vivian Bullwinkel, Florence Nightingale and other pioneers in nursing, we will honour these leaders through the year.

You can be part of the celebration too – give a shout-out to someone who inspired you to become a nurse, attend a celebration roadshow, learn more about nursing history and donate to the Vivian Bullwinkel Project.

Champions of change

At the Australian College of Nursing (ACN), we strive to raise the profile of nursing and ensure that nurses are a vital part of policy-making decisions in the Australian aged and health care system. Through our membership, leadership development programs, events and higher education services, we encourage and support nurses to realise their leadership potential and create positive and meaningful change in health care.

Throughout 2020, ACN will share with you achievements of many such nurse leaders, ACN's Champions of Change. All year round, we will host the ACN 2020 Year of the Nurse & Midwife Celebration Roadshow, which will incorporate a panel discussion on the past, present and the future of nursing. We will also launch an events calendar that will keep Fellows and Members informed of the various events, so we can all join and celebrate nurses together.

Fellows, Members, Affiliates and other organisations can download our media kit which provides materials that you can use to spread the word.
Find it at **acn.edu.au/2020/media-kit**

Being a champion

ACN is honoured to celebrate present-day visionaries whose outstanding expertise is currently transforming the Australian health care system.

Read about the ACN Men in Nursing initiative that supports men to choose nursing as their choice of profession and celebrates those who already have, and be inspired by the nurse leaders and recipients of the Health Minister's Award for Nursing Trailblazers who are working to dramatically improve the quality of health and aged care.

Participate in a plethora of events throughout the year – the National Nursing Forum, Policy Summit, International Nurses Day Breakfast and Community and Primary Health Care Nursing Week – that celebrate and acknowledge nurses who are working every day to advance our profession and making a difference in health care.

We also encourage you to review recommendations for nursing policy and advocacy changes. Our White Papers, Position Statements and Publications (*The Hive*, *NurseClick* and *Collegian*) are part of an excellent resource library that helps nurse leaders keep abreast of the latest in the profession of nursing and health care.

Join the Australian College of Nursing as we honour, acknowledge and celebrate nurses all over the world during 2020 Year of the Nurse & Midwife

- Give a nurse a shout-out
- Celebrate nurse leaders at our 2020 Celebration Roadshows
- Download our media kit and spread the word
- To engage with 2020 celebrations visit **www.acn.edu.au/2020**

Identifying future champions

Advancing nurse leadership is ACN's foremost mission. ACN recognises that it is vital to nurture those who will shape our profession's future – our future champions. We do this by encouraging nurses to realise their leadership potential by providing them opportunities and tools to empower themselves.

Our Nurse Executive Leaders, Mid-Career Nurse Leaders and Emerging Nurse Leaders are a fundamental part of achieving this mission. In 2020, we will also endeavour to celebrate early career nurses through the first-ever ACN Early Career Nurses Day, as well as our students who successfully complete an ACN Graduate Certificate next year.

Nurses and nursing students can also attend ACN's Nursing & Health Expo, which is a great way to discover and progress your career in the nursing and health professions. We are also incredibly proud to support Policy Fellows through our scholarship program funded by the ACN Foundation.

Empowering inner champions

To be a leader, you have to believe you are one. At ACN, we believe that every nurse is a leader. Through the year of 2020, we will endeavour to – as we always have – support nurses to expand their knowledge and skills and boost their well-being and self-belief.

Through our national campaign NurseStrong, which saw an immensely successful launch in 2018, we encourage nurses to take part in the National Roadshow Step-a-thon and keep an eye out for various other initiatives we will launch in 2020 to inspire and help nurses to take care of themselves. If you're interested in joining this movement, join the NurseStrong Facebook group *NurseStrong Private Group*.

Education is an integral part of empowering one's inner champion. ACN's continuing professional development (CPD) courses, short courses such as Immunisation and Graduate Certificate options are great tools with strong clinical focus and evidence-based practice.

You can also empower yourself by applying for ACN's various scholarship schemes and exploring opportunities to represent ACN at forums such as government department advisory committee meetings, health professional roundtable discussions, government and non-government working groups and workshops and other events that fall into professional areas of expertise.

ARTIFICIAL INTELLIGENCE: HOW CAN IT 'VALUE ADD'?

TOMICA GNJEC MACN
CLINICIAN

My teenage son recently introduced me to a PlayStation game called *Astrobot Rescue Mission* – the surreal world of virtual reality (VR) platform gaming. Not gaming inclined nor tech savvy, I was initially quite engrossed and engaged in the VR game, until motion sickness kicked in and I sadly had to call it quits.

Just imagine, though, utilising an augmented reality headset such as this in clinical practice, to relieve both anxiety and pain. This is one form of artificial intelligence and innovation that has been introduced in a range of health applications from training to treatments (Powell, 2017).

The French company *Healthy Mind* has marketed a purpose-made, 'evidence based' VR and audio headset whereby the health consumer is taken on a 3D virtual experience through a soothing and natural environment of his/her choice (Healthy Mind, 2019). The creators of this therapeutic device describe it as an immersive experience through engagement with the brain's cognitive capacities within a virtual reality.

The device aims to modulate pathways through auditory and visual recreations, engage in rational behaviour therapy (including advance psychological principles like hypnosis) and attention diversion (Healthy Mind, 2019). Further, Healthy Mind (2019) report that the device has been trialled in various clinical areas (surgery, psychiatry, oncology, paediatrics, emergency) and has been found to facilitate recommended treatment regimens (insertion of devices such as intravenous cannulas), decreased use for drugs, reduced hospitalisation and improved overall experience and recovery of consumers.

A device that can be easily applied to a range of consumer ages – before, during or after painful or anxiety-inducing procedures – could be readily adopted and utilised in many clinical settings. Clinically designed and trialled artificial intelligence device options such as the currently existing augmented reality headsets, can allow and expand our engagement options with the consumer and ultimately, provide an improved consumer health journey.

In the years to come – if we are able to optimally utilize the capacity of artificial intelligence – it can only augment the delivery of quality, safe and more efficient health care services.

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OUR FUTURE WORKFORCE

JAMES BONNAMY MACN
ACADEMIC

Artificial intelligence (AI) is rapidly evolving in health and has the opportunity to revolutionise care. Everyone seems to be talking about AI. This is not surprising, given the potential health care savings of this technology could reach $150 billion by 2025 through clinical and operational improvements (McGrow, 2019).

AI is the theory and development of information and communications technology systems that are able to handle tasks that traditionally have required human intelligence and thinking such as decision-making (Jiang et al., 2017).

AI learning has many applications in health and human services. Computers are able to learn and re-learn based on new information. In health care, artificial intelligence has the capacity to help us handle massive amounts of increasingly complex medical data. It can help improve certainty in decision making, for example, with prognosis estimation.

Clinical analytics, aimed at improving treatment outcomes, can be used to provide differential diagnosis following medical imaging. *Operational analytics*, which improves efficiency and effectiveness of health care systems, can be used to anticipate patient equipment requirements prior to admission. *Behavioural analytics*, the newest area of artificial intelligence, can examine patient behaviour and improve the probability of actions by patients to adopt recommended actions to improve their health (McGrow, 2019).

There are challenges integrating health care and artificial intelligence. Health care data is often siloed, and current massive datasets are disorganised and in formats unrecognisable to AI machines. Anyone who works in health care will have experienced the incompatibility of hospital systems which hampers efforts to link these datasets to enable AI-driven decision-making.

Nurses will be pivotal to making AI work in health care. Nurses are already working in new and innovative roles. Dr Kathleen McGrow, Chief Nursing Information Officer at Microsoft, is working on helping organisations use innovative technology to improve population health.

Professor Richard Booth highlights that "if we don't mediate this technology [artificial intelligence], someone will do it for us" (Glauser, 2017).

Nurses and midwives must be involved in planning for changes in our own ways of working, as many of our tasks will eventually be delegated to or enhanced by AI technologies.

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AI IN AUSTRALIAN HEALTH CARE

- Queensland Health is working to transform pathology reports into computable, AI-ready structured data to automatically notify cancer registries
- A rural hospital in NSW is using AI-driven thinking to identify patients who are at-risk of readmission to reduce their high-rates of unexpected readmissions
- Dementia Support Australia is using AI to identify the presence of pain in patients with dementia by scanning patients' faces to detect pain-related facial expressions
- A major Australian health care service is using AI to help it manage the procurement of hospital consumables to reduce waste whilst ensuring emergency supply
- With around 90% accuracy, Queensland Health is using AI to predict how many patients will arrive at the emergency department and when (Prior & McKeown, 2019).

NOT ALL PUBLICITY IS GOOD PUBLICITY

MS LAURIE BICKHOFF MACN
EARLY CAREER NURSE

The right technology and innovation can make health care safer and more efficient. It can help nurses do their jobs more effectively and allow them to focus on their patients and utilise their critical thinking skills. Nurses need to be involved in the development of these technological advances to ensure they remain a help and not a hindrance to the vital work we do.

We also need to be active in the reporting of new innovations and speak up when discrepancies creep in. Take for example, Pepper, the robot developed by the James Cook University (JCU) research team. JCU describes Pepper as a "human-shaped, social robot" and took great care to emphasise that it "can't provide the level of caring and therapeutic engagement that nurses and other health professionals provide" (James Cook University Australia, 2018). The team describes how Pepper can alleviate some stress for nurses by answering common, non-clinical questions, such as "information on things like parking, where to get food or drink in the hospital, whether smoking is permitted". By answering these basic questions for patients, it allows the nurse to concentrate their time and energy on more critical tasks.

Compare this to how the general media described Pepper. News channel 7News Brisbane described it as a "robotic nurse" and a "Robotic RN" (7NewsBrisbane, 2018). They stated in their news report that "Pepper the nurse answers patients' questions" but "can't give sponge baths".

Reports of this nature demean the valuable work we do and have the potential to generate a negative backlash from our profession against an innovation that could, in fact, make our jobs easier. In these instances, we must speak out, not against the technology, but against inaccurate reporting and description of what it is designed to do.

EDITOR'S NOTE: Read more about how Pepper is helping nurses in health care on page 16, The power of Pepper.

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THE POTENTIAL AND PITFALLS OF AI

The biggest opportunity that Artificial Intelligence (AI) presents is not the elimination of errors or the streamlining of workload, but paradoxically the return to caring in health (Topol, 2019). In removing the need for health professionals to be brilliant, as machines will be better at diagnosis and other aspects of care, the need for emotional intelligence will become more pressing.

In his book *Deep Medicine*, Eric Topol recounts how he grew up with a chronic condition, osteochondritis dissecans (OCD), which was disabling. At 62, a knee replacement surgery went badly wrong, followed by an intense physical protocol which led to devastating pain and distress leaving him screaming in agony. Topol tried everything to get relief and his orthopaedic surgeon advised him to take antidepressants. Luckily, his wife Susan found a book called *Arthrofibrosis*, which explained why he was suffering a rare complication of inflammation affecting 2–3% of people after a knee replacement. His surgeon could only offer him future surgery, but a physiotherapist who had experience with people with OCD offered a gentler approach that helped him recover. AI could have helped him by creating a bespoke protocol that took his history into account, which the doctor did not. The paradox is that AI could help animate care, in the case of the robotic health professionals he had to deal with in the quest of recovery.

The three D's

Nursing practice is being radically transformed by new ways of knowing including AI, algorithms, big data, genomics and more, bringing moral and clinical implications (Peirce et al., 2019). On one hand, these developments have massive benefits for people, but they also raise ethical questions for nurses (Peirce et al., 2019). In order for nurses to align themselves to their values and remain patient-centred, they need to understand the implications of what Topol calls the three D's: the ***digitisation*** of human beings through technological developments such as sensors and sequencing is digitally transforming health care; the ***democratising*** of medicine as patient's knowledge of themselves becomes their possession rather than that of the health system and lastly, ***deep learning***, which involves pattern recognition and machine learning.

Data is fundamental to AI

The massive amounts of health data being collected – from apps, wearable devices, electronic health records, etc. – allows for increased capability in computing to enable the effective analysis and interpretation of such data, and therefore, making predictions.

AI includes a range of technologies that can work on data to make predictions out of patterns. Alan Turing, who is thought to be the founding father of AI, defined it as the science of making computers intelligent; in health AI uses algorithms and software to help computers analyse data (Loh, 2018).

Applications of AI

Data is transforming health in two key ways:

- Assisting with enhancing patient care – from improving decision making and making diagnosis more effective and accurate to recommending treatment
- Systemizing onerous tasks to make systems more effective for health care professionals and administrators.

Applications are emerging including automated diagnosis from medical imaging (Liu et al., 2019), surgical robots (Hodson, 2019), trying to predict intensive care unit (ICU) mortality and 30-day psychiatric readmission from unstructured clinical and psychiatric notes (Chen, Szolovits, & Ghassemi, 2019), skin cancer diagnosis; heart rhythm abnormalities, interpreting medical scans and pathology slides and predicting suicide using pattern recognition, having been trained on millions of examples.

These systems overcome disadvantages of being a human, like being tired or distracted. And from a knowledge translation point of view, rather than waiting for knowledge to trickle down from research into practice over decades, steps could be automated and more personalised (Chen et al., 2019).

AI can also be used to better serve populations who are marginalised. For example, we know that not everyone is included in the gold standard of evidence: randomised trials. This means that they are not representative of entire populations, so therapies and treatments may not be tailored to marginalised populations (Chen et al., 2019; Perez, 2019).

Potential for algorithmic bias in health

However, large annotated data sets on which machine learning tasks are trained aren't necessarily inclusive. For example, image classification through deep neural networks may be trained on ImageNet, which has 14 million labelled images. Natural language processing requires that algorithms are

> **“AI can also be used to better serve populations that are marginalised.”**

trained on data sets scraped from websites that are usually annotated by graduate students or via crowdsourcing which then unintentionally produce data that embeds gender, ethnic and cultural biases. (Zou & Schiebinger, 2018).

This is because the workforce that designs, codes, engineers and programs AI may not be from diverse backgrounds and the future workforce are a concern also as gender and ethnic minorities are poorly represented in schools or universities (Dillon & Collett, 2019).

Zou & Schiebinger (2018) cite three examples of where AI applications systematically discriminate against specific populations – the gender biases in the ways Google Translate converts Spanish words into English; software in Nikon cameras that alerts people when their subject is blinking, identifies Asians as “always blinking”; and word embedding, an algorithm for processing and analysing natural-language data that identifies European American names as “pleasant” and African American ones as “unpleasant”.

Other similar contexts include crime and policing technologies and financial sector technologies (Eubanks, 2018; Noble, 2018; O’Neill, 2016). But how does one counter these biases? As Kate Crawford (2016) points out, “Regardless, algorithmic flaws aren’t easily discoverable: How would a woman know to apply for a job she never saw advertised? How might a black community learn that it was being overpoliced by software?”

Biased decision-making in a systematic way might happen with individual clinicians but they also rely on clinical judgement, reflection, past experience and evidence.

Digital literacy for an ageing workforce

We have a crisis in health care, and in nursing. Our technocratic business models with changes from above are contributing to “callous indifference” (Francis, 2013). Calls to reinstate empathy and compassion in health care, and ensure care is patient-centred, reflect that these features are absent from care.

In the meantime, we have had Royal Commissions into aged care, disability and mental health. For AI to be useful, it’s important that nurses understand how technology is going to change practice. Nurses already experience high demands and complexity in their work, so technological innovations that are driven from the top down risk alienating them and further burning them out (Jedwab, et al. 2019). We are also going to have to develop new models of care that are patient-centred and codesigning these innovations with diverse populations is going to become increasingly important.

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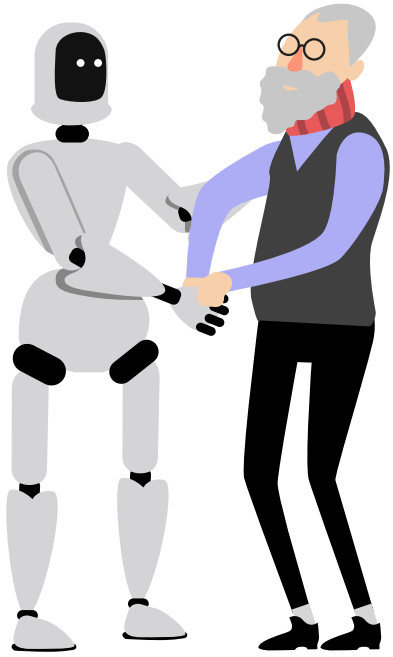

AGEING SMART

AI has the potential to substantially improve quality of life for the elderly, but not without nurses' intervention

> **"Nurses need to expand their skills to include using smart home technology dashboards to triage potential alerts and decision-making."**

The use of technology in aged care is increasing for many reasons. The most significant factor relates to giving older adults a choice on where and how they want to age, but also includes a combination of factors including a shift in the ageing demographic, changes in consumer expectations, residential aged care concerns including staffing shortages, cost concerns and improving quality health outcomes.

Further, the current deliberations with the Royal Commission into the quality and safety of residents in aged care facilities has left providers and their families wondering if smart sensors and cameras could be solutions to facilitate the provision of quality nursing care to residents. In the newly emerging field referred to as Gerontechnology, researchers and developers focus on the design of an environment using technology to facilitate independent living and social participation of older persons in comfort and safety.

Ageing-in-place and technology

Many older people prefer to age where they are living to maintain social connectivity, but evidence points to potential risks associated with ageing-in-place such as accidents, slips and falls, and unnoticed exacerbations of chronic illnesses like congestive heart failure (Thoma-Lurkin et al., 2018). In addition, they may have limited access to a daily caregiver, family member or nurse to provide the health-support they need.

For older people who live in remote areas, clinical support through remote health monitoring may be a cost-effective alternative to residential aged care and supportive of their wish to age where they live.

Currently there are many ageing-in-place technologies which are readily available, such as wearables. However, to support ageing-in-place, smart homes – that cater to the health and safety of older adults – could be the real gamechanger.

Smart homes

'Smart Home' is a general term used to refer to in-home smart sensor technology, and a wide range of devices envisioned by research teams focusing on developing smart environments to assist with in-home delivery of health care. Products like Amazon's Echo and Alexa®, Google Home® and Geeni® support both consumer comfort and a level of security with interconnected devices that can do a variety of things such as motion-activated lights, sounds and security cameras.

However, the emerging science to create smart home sensor technology to specifically support the health and safety of older adults, or persons with disabilities, has the potential to take ageing-in-place to new levels.

Nurse-monitored health-assistive smart homes

The idea of smart homes – which have been deployed across a variety of care settings such as private homes, assisted living and residential memory care – centers on the idea of a person's daily routines being able to tell a story about their health. For example, if a person is not feeling well they may spend more time in bed or lying on the sofa or use the toilet more frequently or have less interest in food.

This type of health-assistive smart home can monitor a person's health-related activities that are potential clues to changes in health. It uses unobtrusive sensor technology embedded in the home-environment (ceilings, walls).

Artificially intelligent (AI) algorithms are used to monitor daily behaviours and if it notes an abnormal behavior pattern that may signal a change in health state, it is capable of alerting nurse-clinicians. For the AI agent to know how to make the right or expected decision, first AI has to be 'trained.' Machine learning achieves this training. To train the intelligent machine clinical nursing knowledge is critical, and why nurses play an important role in both the development and implementation of health-assistive smart homes (Dermody & Fritz, 2018).

Wearables in aged care

- Companies like Apple and Samsung are developing wearables that can send an emergency response through a smartphone to first responders, as well as connect to their smart home to adjust the living environment as needed.
- Coupled with the Garmin® wearables that can monitor heart rate to detect cardiac arrhythmias, is the Cardiogram Heart Health App that interprets the cardiac data.
- Companies like Bose and Hartman are developing hearing technology coupled with AI termed 'hearables'. For example, Otican Opn™ that can connect to a person's smart home and adjust itself based on the noisiness of the home.
- Verily is developing specialised contact lenses that can assist older adults suffering from age-related vision changes such as far-sightedness.
- Bluetooth enabled blood pressure cuffs, weight scales, glucose monitors, and pulse oximeters, etc., are part of telehealth technology that collect data, which when uploaded to the cloud can be readily accessed by a health care team remotely.

Remote Recognition of Changes in Health using Smart Home Sensor Data

The type of data a health-assistive smart home collects depends on the product and the needs of the resident. In general, it may monitor a person's:

- activity level based on the total number of activated sensors
- time spent in each activity (cooking, personal hygiene, relaxing, etc.)
- the number of toileting episodes per 24 hours and bed-to-toilet transitions
- number of hours of sleep per day, including location of sleep and day and night sleep; walking speed, gait and balance.

This real-time data in easy-to-read graphs can uniquely tell the nurse whether or not a person is doing what they usually do, on a daily basis, and if deviations exist. It can provide clues to acute or gradual changes or declines over time that could go unnoticed.

For example, in adults with dementia, sleeping and eating can often become erratic resulting in altered mental well-being and nutritional deficiencies that can further compound the features of dementia. Direct area sensors coupled with wearables can collect sleep data and fridge and kitchen heat sensors can monitor eating habits.

Nurses can then follow established clinical practice guidelines and develop a plan of care. If the burner on a stove is accidently left on, and sensor movement in the stove area for a certain length of time is absent, actuators which are small devices can receive remote digital instructions and de-activate the stove that has been left on accidentally.

Similarly, motion sensors or infrared cameras can indicate a change in a person's gait and balance, which impact function and the ability to be independent. Followed by an automatic alert sent to the health care team, it could help nurses to forecast a fall days or even weeks before it happens, allowing for early intervention.

Nurses play a key role in the management of a person's health using the sensor collected data, as they need to recognise potential changes in health, and liaise with the interdisciplinary team to implement timely interventions.

Nurse-involvement in health-related technology applications

Although nurses have laid a historical claim to the space between technology and their patients, nurse representation in the development, research and translation of technologies in health care has been limited.

The expansion of technology use – such information management solutions, robotics, web-based apps, smart homes and AI – will impact patients and families, and ultimately how nursing care is delivered. Nurses are frequently the "end-user" of patient-related technology (think of the IV pump, or the fall alarm). Therefore, nurses should be involved in the development and integration of technologies into patient care, which requires increased nurse representation.

However, nursing representation and involvement in this field, and in particular working with AI, remains low. Reasons include limited exposure to technology beyond health care informatics, and myths such as technology might replace nurses, and subsequently the human touch. Unfortunately, this may leave nurses unprepared to consider their involvement, and may inhibit their involvement in development and implementation of these technologies (Fritz & Dermody, 2018).

It's upon nurses to expand their skills to include using smart home technology dashboards to triage potential alerts and decision-making. They need to know that rather than replacing the human touch, technologies could enhance their patients' health and well-being. Nurses have a unique holistic nursing knowledge base to understand the potential changes in health that could be taking place. To advocate for older adults, they must be at the design table of ageing in-place technologies, including AI and health assistive smart homes, and other wearables.

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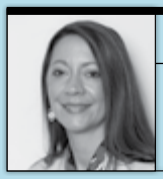

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THE NURSING PROFESSION IN A DIGITAL AGE

Nurses stand to gain a lot from health digitisation, if trained the right way

After having worked in the health care sector for nearly 45 years, I can honestly say that the best time for nurses is now – as health finally becomes digitised. Digital initiatives in health have the potential to affect every aspect of care delivery, delivering significant results in assisting patients to make smarter choices, improving the utilisation of time and resources, assisting in the coordination of services across the care continuum, enhancing real-time communication, supporting continuous patient monitoring, expanding access to evidence-based resources, and increasing the time available for patient interaction at the point of care.

Early indications also point to the potential to improve safety in some areas of care delivery such as medication and documentation errors, if nurses are equipped with smartphones, tablets and mobile devices that have remote access to electronic patient records.

Challenges of digitising health

Unlike other industries, the customer (patient) journey in health is continuing, rather than a discrete purchase or experience, and can also literally result in life or death.

Another issue facing health is the changing expectation of patients, with people who want immediate access to clinicians and results and are also reasonably intolerant of traditional processes and paperwork. The growing number of people living with co-morbidities, non-communicable diseases, and complex care pathways means that providing a person-centred approach that is both tailored to the patient and clinician needs is difficult.

Finally, the focus on value-based care delivery within an environment experiencing nursing workforce retention challenges, generational shift, and limited administrative support and resources requires major transformational change.

To ensure that the nursing profession receives the maximum potential of these technologies, nurses need to be digitally proficient, data-enabled, and innovation aware.

Digital proficiency

Digital proficiency, according to Lepofsky (2014), comprises two vectors – skill level and comfort level with technology.

A further challenge in creating a digitally proficient nursing workforce is that we currently have a mixture of digital immigrants and digital natives. Digital immigrants were born before the advent of digital technology (before 1980s), whereas digital natives were born after the 1980s and grew up using technology from childhood (Cut, 2017). Digital immigrants need to be reminded that they cannot break the systems, and that nurses need to be at the table when decisions are being made about digital options. Digital natives, meanwhile, need to understand that health is not entirely digitised, and that paper and faxes are still in use. It will be interesting to look forward a decade or two, when all employees will be digital natives.

Becoming digitally proficient also means that nurses need to appreciate that digital formats make it easier to process, transmit, store and display data. Unfortunately, digitisation is often mistaken for automation – it is not just about improving what is already being offered but creating and delivering new value to the recipients of care. Replacing a clipboard or notepad with a tablet is not digitisation, however, extending that tablet to connect to the Internet of Things, so that it monitors and records data directly into an electronic medical record, is digitisation.

This assists nurses to work better and faster, focusing attention on patients instead of administrative tasks – avoiding paperwork and systems data entry. It is vital, however, that nurses are given time to learn how they can benefit from a different approach – doing things differently – rather than deploying the technologies and expecting staff to learn as they perform the activities.

Data-enabled

Nurses also need to be data enabled, or in other words, be able to appreciate the criticality of data quality. Collecting dirty or incomplete data is a complete waste of time and often results in more time being devoted to cleaning the data, rather than

> “Innovation aware nurses can identify patient data important to their nursing practice and tap into that data to improve processes.”

quality data producing reliable results. There are multiple touchpoints and sources of data in health care, and nurses need to see its inherent value and how relying on data is much more precise than relying on anecdotal reasoning.

Data gathered from traditional sources can now be combined with data from new sources (structured and unstructured data) to help manage complex care projects. Data, once analysed, can reveal so much. Aggregated data, in particular, which provides us with more information about population health, can enhance preventive care, improve clinical decision making, and can result in collaborative reporting.

Nurses need to be exposed to a variety of data tools that allows them to concentrate on specific cohorts of care recipients – such as those frequently readmitted to acute care facilities. Knowing certain attributes about these people can lead nurses to intervene early, thereby negating the need for hospital readmission. Not only does this benefit the recipient of care, but also the health care organisation in reducing costs and bed demand.

Innovation aware

Lastly, it is imperative that health creates an innovation culture, achievable by automating business processes, enhancing collaboration and decision making, and having real-time insights. Innovation can be categorised as non-disruptive (evolutionary, incremental, linear) or disruptive (radical, revolutionary, transformational) in relation to its impact on stakeholders (Haughom, 2017). The current difficulties facing health care and the wave of impending technologies generally lead us to perceive innovation as being disruptive, and it is hoped that this disruption will improve preventative and personalised care.

Innovation aware nurses can identify patient data important to their nursing practice and tap into that data to improve processes. By fostering innovation in nursing, organisations can constantly develop new services and new capabilities. Nurses often lack confidence in their ability to innovate, yet they are in a perfect position to understand the blockages and inefficiencies in care delivery.

Management must support innovative nurses and link them with technologists to develop smartphone applications, medical devices and other digital initiatives that will not only benefit patients, but also the nursing workforce and the organisation. The Australian College of Nursing (ACN) in collaboration with the Health Informatics Society Australia (HISA) and Nursing Informatics Australia (NIA) have developed a Nursing Informatics Position Statement to give nurses in all settings the priorities to have the confidence to lead in their workplace. Having a clear and consistent set of nursing informatics guiding principles, nurse leaders can display these consistently in their behaviour and colleagues come to value what is important to them and why.

One must also remember that technology can never substitute the emotional intelligence of humans. Moreover, digitisation is nonlinear, with most health care organisations advancing several projects simultaneously. It is anticipated that digital disruption will be good for health, however, living in the disruption can be challenging. Nurses must not lose sight of their important contribution in this area and must ensure that they contribute to decisions about digitisation at the local, state, national and international level.

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L-R: Anne Elvin, Professor Cate Nagle, Dr Wendy Smyth MACN and Christine McIntosh MACN. Team member absent from photo: Professor Melanie Birks FACN

THE POWER OF PEPPER

How one humanoid robot busted patients' 'clinical boredom' and boosted health literacy

The use of robots in health care is a rapidly emerging and innovative field that holds many opportunities and challenges. Towards the end of 2017, two nurses from Townsville Hospital's Short Stay Unit, Christine McIntosh MACN, the nurse unit manager, and Anne Elvin, an enrolled nurse, approached the Nursing and Midwifery Research Unit at Townsville Hospital and Health Service to help them undertake research into the use of a social humanoid robot.

A team from Townsville Hospital and Health Service and James Cook University has completed two studies as a part of a program of research. The team members are Dr Wendy Smyth MACN, Anne Elvin, Christine McIntosh MACN, Professor Melanie Birks FACN and Professor Cate Nagle. Staff from Queensland University of Technology provided technical support. We believe our research was the first time in Australia that a social humanoid robot was introduced to an acute health care setting and provided health information.

The team leased 'Pepper' from Softbank Australia. Pepper stands 1.2 metres tall, weighs 28 kilograms and has moving parts. It has artificial intelligence, can hear, speak, move, detect motion and facial expressions, and can feel touch. In the first study, Pepper was programmed to provide basic information about the hospital, patient's rights and health information and with voice recognition, it was able to respond to specific questions.

The aim of this study was to evaluate the acceptability, and the actual and potential usability of a robot in the clinical setting. The study involved observing the reactions and responses of patients, visitors and hospital staff and, using a survey, asking them about their attitudes to robots in health care. The setting for the study was the busy Emergency Short Stay Unit. People interacted with Pepper by asking any of the questions from the list displayed or by using the prompts on the touch screen.

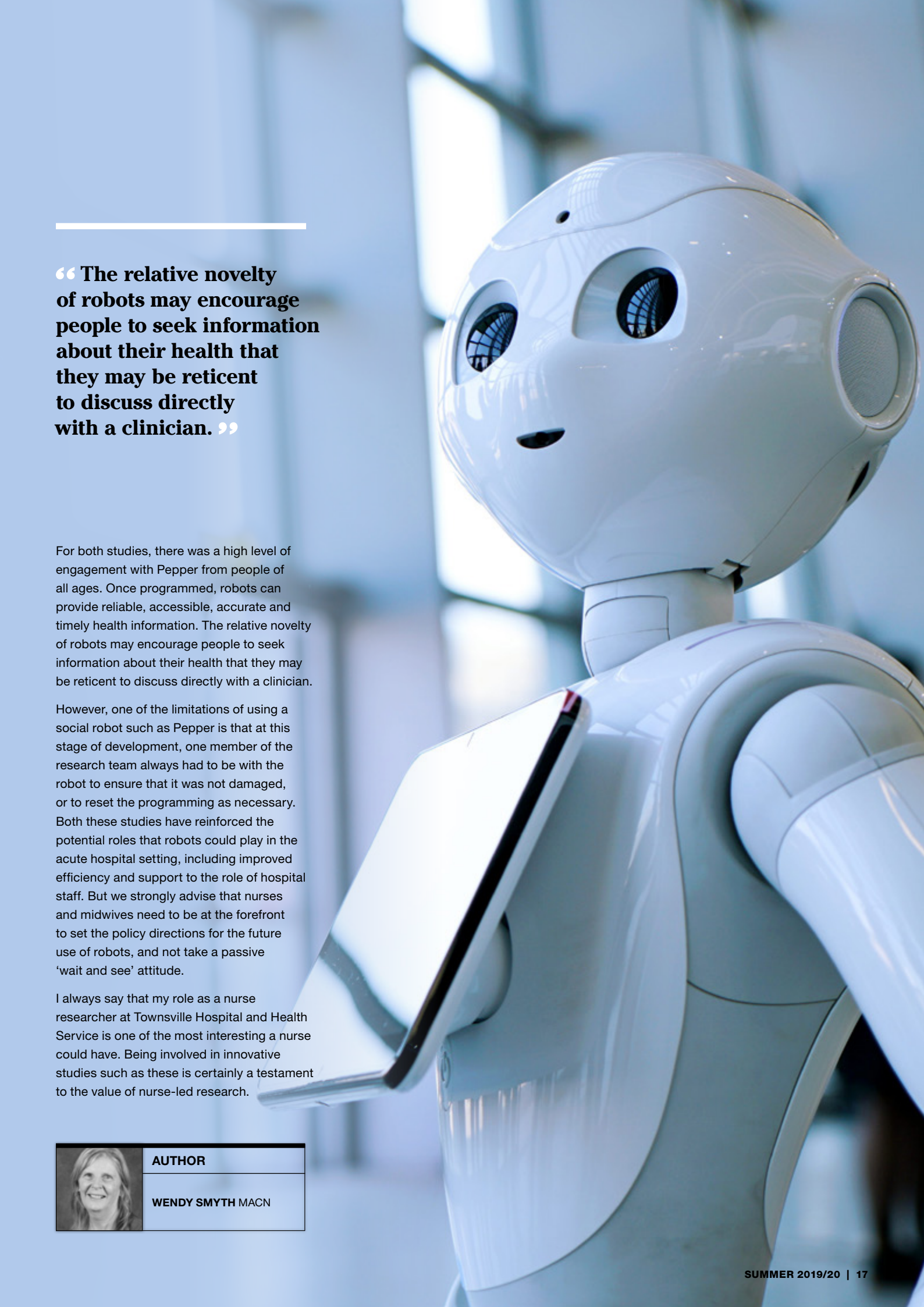
Pepper drew lots of interest from everyone, with observations of 86 patients, 78 visitors, and 350 staff noted. Almost everyone smiled when they walked past Pepper, and many people made positive comments such as "awesome", "unreal", "amazing", "it's a great idea". Non-verbal behaviours were generally positive and diverse.

Participants often thanked Pepper or, if they were walking by and didn't stop some would say, "I'm not ignoring you Pepper". Other patients, after hearing that smoking is not permitted in the hospital grounds and that smoking was bad for their health, immediately followed up with the staff about how they could be assisted to quit smoking. The responses to the Social Attributes Scale component of the questionnaire completed by 96 participants were all positive, with the words 'interactive', 'happy', 'responsive' and 'knowledgeable' associated with a robot. In this setting, Pepper certainly helped to bust the boredom for some of the patients.

This initial study made it easy for the team to embark on a second research study, this time to investigate the role a social humanoid robot may have on health literacy, specifically to explore the impact of a robot on individuals' knowledge and attitudes towards influenza vaccination. Pepper was relocated to the hospital's busy main public corridor.

In this setting, the option to ask questions directly of Pepper was not feasible – it became distracted due to the ambient noises and people moving past. Pepper provided information and posed questions on preventing influenza using a pre/post-test approach, participants interacted via the touch-screen. Over half of the 995 individuals who completed the pre/post-test were visitors to the hospital.

Two-thirds of the participants were vaccinated against influenza; only 6% disagreed that vaccination was important (reduced to 3.9% post-test). The most common reason for not being vaccinated was 'feeling fit and healthy' (46%). There was a statistically significant (all $p<0.05$) increase in correct responses (pre/post): the best way to avoid influenza (45.3%, 90%), survival time of the virus outside the body (23.9%, 85.5%), and recommended time of hand washing (45.7%, 91.1%). Almost all participants (99.2%) enjoyed interacting with Pepper. More research would be needed to investigate if this knowledge gain is sustained and whether behaviour change results from interactions with a robot.



> **“The relative novelty of robots may encourage people to seek information about their health that they may be reticent to discuss directly with a clinician.”**

For both studies, there was a high level of engagement with Pepper from people of all ages. Once programmed, robots can provide reliable, accessible, accurate and timely health information. The relative novelty of robots may encourage people to seek information about their health that they may be reticent to discuss directly with a clinician.

However, one of the limitations of using a social robot such as Pepper is that at this stage of development, one member of the research team always had to be with the robot to ensure that it was not damaged, or to reset the programming as necessary. Both these studies have reinforced the potential roles that robots could play in the acute hospital setting, including improved efficiency and support to the role of hospital staff. But we strongly advise that nurses and midwives need to be at the forefront to set the policy directions for the future use of robots, and not take a passive ‘wait and see’ attitude.

I always say that my role as a nurse researcher at Townsville Hospital and Health Service is one of the most interesting a nurse could have. Being involved in innovative studies such as these is certainly a testament to the value of nurse-led research.

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PREPARING NURSES FOR A DIGITAL FUTURE

Integrating information and communication technology in the curricula is the first step to increasing digital competency of future nurses

As the fourth industrial revolution unfolds, smart and connected technologies are changing the way we live, work and interact in our communities. Health care is experiencing these developments first-hand as e-health, a term used to describe the use of information and communication technology (ICT) for health (WHO, 2019), dramatically impacts service delivery and the development of the health care workforce. The rapid pace of technological innovations and emergence of artificial intelligence makes it imperative that, as the largest group of health professionals, nurses can operate optimally in this environment. Digital health information systems, such as electronic health records (EHR) and telehealth already impacts routine nursing activities (Locsin, 2015). The critical question, is how prepared are our students for the ubiquitous digital environment of health care?

The role education providers play

Integrating ICT competencies into nursing education at all levels is vital if graduates are to be work-ready for the technology-enabled clinical environment. In Australia, we have three types of nursing qualification programs: the graduate entry-to-practice program (for example, Master of Nursing Science), Bachelors and the Diploma of Nursing. What is not known at this stage is the degree to which ICT competencies are integrated into the curricula in these programs.

To ensure that nursing graduates are equipped, education providers must prepare students to efficiently navigate the point of care ICT. The question is, where to start? With respect to nursing, right now EHRs and telehealth are dominating in the clinical environment. The academic equivalent of EHR, academic EHRs, are simulation learning tools with capabilities and functionality required of EHRs used in the clinical setting. They simulate navigation of technology and health data, patient assessment, clinical decision-making and documentation proficiency (Johnson & Bushey, 2011). Telehealth refers to use of variety of telecommunication tools, for example smartphones, to overcome the barrier of distance to deliver health care (Victorian Government, 2019).

Recent development in this space is that some universities have begun to invest into academic EHR as part of simulated clinical practice in the safe university environment aimed at developing good practice in new graduates capable of working in ICT-driven environments. Others are investing in virtual clinics to simulate telehealth activities. Combined, these activities will have a direct impact on digital competency of the future nursing workforce.

Why is informatics and technology competence essential in nursing curricula?

The imperative for ICT integration in the curricula is highlighted by the fact that at present, in Australia, there is limited ICT exposure in entry to practice nursing education. Up to now, acquisition of proficiency in ICT systems such as EHRs and telehealth was delegated to the clinical environment as part of work integrated learning.

The problem with this approach is that it amplifies the existing issue, which is forming a nursing workforce with inadequate competencies, knowledge and a skills gap to effectively navigate these technologies. To remain at this trajectory means that the risk of inadequate preparation translates to compromised health care delivery, safety and patient care outcomes and perpetuates a chronically under-skilled nursing workforce (Cummings et al., 2016).

Overcoming challenges to implementing ICT into curriculum

When academics design teaching lessons/courses there are a number of factors to consider when implementing new technologies. The factors range from external, such as availability of appropriate teaching tools, to internal, such as staff skill, student engagement to marking rubrics design to mark assessments. From an implementation viewpoint, the main impediments to ICT inclusion in nursing education are linked to:

- faculty related barriers, such as outdated attitudes towards ICT and shortage of knowledgeable faculty
- difficulties in obtaining funding to allow implementation
- selecting suitable academic equivalent of EHR and telehealth with respect to interoperability, student assessment, academic needs
- shortage of nursing informatics specialists to assist implementation and teaching
- adaptation of USA-centric products to Australian education

> **“Delegating acquisition of proficiency in ICT systems to the clinical environment perpetuates the risk of inadequate preparation and compromises patient care and safety.”**

- insufficient technical support with training staff or when managing hardware and software issues
- managing product licence and costs
- absence of realism, whereby the academic Health Information Technology software does not reflect systems used in clinical settings which may lead to student dissatisfaction with efforts made
- lack of support from health care industry in terms of sharing educational resources with universities to reduce costs of implementation.

The key enablers for successful integration of digital applications include securing funds to acquire the academic software, having a project champion within the education team driving change, and faculty and student training and support during implementation.

Perhaps the most critical factor is support of faculty’s leadership. The integration of sustainable models based on sound pedagogy accompanied by the meaningful use of digital learning tools are also pillars for successful outcomes.

In conclusion…

The transition to e-health and smart and connected technologies are changing the way nursing is done. The education sector needs to respond by equipping future nurses with ICT competencies and associated skills. This means prioritising integrating recommended ICT competencies as a critical graduate attribute. Without investing into this priority now, universities risk preparing graduates unable to meet the demands of the future health care and struggling to function in the technology-enabled clinical environment.

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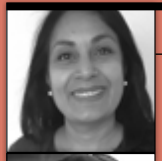


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Starting points to integrate ICT competencies into nursing education program

- *National Informatics Standards for Nurses and Midwives* in Australia, which define three domains of competence for practicing nurses and graduates. These are: computer literacy, information literacy and information management (ANMF 2015).
- ANMAC Standards, which provide some guidance on what nursing curricula must incorporate with respect to nursing informatics and health technology as part of the accreditation standards in all entry level qualifications (ANMAC 2014).
- Familiarity with evolving technology, which drives ICT competencies central to the practice of nursing in the pervasive digital health care environment.
- Needs of the health care industry, which expects work-ready graduates.

AI: READY OR NOT

The potential impact of AI in nursing is massive, but what about the prerequisites and the ethical conundrum it presents?

Hollywood blockbusters of the 1980s brought machines and robots with the ability to mimic human behaviour into our cinemas and lounge rooms. Scenes of human versus robot forced viewers to grapple with the possibility of a world in which humans and machines co-exist. What seemed like a distant future has crept into reality.

Artificial intelligence (AI) has been defined as technologies with the ability to perform tasks that would otherwise require human intelligence. This includes visual awareness, speech recognition, and language translation. Today, AI systems have the capacity to learn or adapt to new experiences or stimuli (House Of Lords Select Committee, 2018).

AI is already around us

We already use AI in our daily lives – pop-up help chatbots on websites, talking to devices that control lights in our homes, useful but oft-frustrating interactive voice response when we ring our favourite utility provider.

I, on many occasions, have found myself screaming into the phone "three", "THREE", "REPRESENTATIVE", "HELP", "PERSON", "HUMAN"! On the flip side, AI through speech recognition has enabled my mother, who has advanced multiple sclerosis, to send me voice generated text messages. So is AI an annoyance and a hindrance, or life changing and brilliant? Regardless of personal belief, AI is disrupting the way in which we do business and interact with each other.

AI in health care

Through visual awareness and learning, some AI systems are able to detect abnormalities at a rate equivalent or better than radiologists (Rajpurkar et al., 2018). The same type of AI technology has been used to correctly, and more accurately, identify skin lesion abnormalities than a dermatologist (Esteva et al., 2017). AI benefits the patient but at the cost of disrupting the practice of medical diagnosis. A few potential nursing use cases within our grasp include:

- a camera held over a patient grades a wound, and prescribes a best practice wound care dressing based on available stock in the hospital
- robots communicating and interacting with patient and nurses
- synthesis of lab results, medical history, observations and vital signs are used to predict and thus prevent patient deterioration
- nurses dictating clinical care rather than typing or filling in electronic forms.

Are we ready?

There is a clear medical-legal question that requires reconciling. If AI technology makes a mistake and a patient is inadvertently harmed, which human party is liable? The software developer, the health service or the nurse that relied upon the AI technology? To what extent, if at all, does the introduction of AI disrupt or change a nurse's duty of care?

AI is reliant on high quality data that is complete, accurate and timely, to function. Health care organisations that continue to handwrite paper-based clinical documentation will struggle to experience any of the widespread safety and efficiency benefits of technology, including AI. Additionally, a significant portion of nurses are now using electronic medical records and generating large amounts of unstructured free-text clinical documentation. Free text progress note documentation is prone to spelling errors, unsupported acronyms, and like some handwritten notes, can lack the breadth and depth of the nursing care actually provided.

It is unknown to what extent, and under what circumstances, the nursing workforce is ready and willing to adopt and use AI technologies in nursing practice. South Western Sydney Local Health District in conjunction with Western Sydney University is leading a national nursing workforce readiness survey exploring nurses' attitudes and beliefs towards AI.

The primary aim of the research is to identify segments of the nursing workforce that are ready to adopt and use AI technologies. Where there is hesitation to adopt AI, the research aims to understand if there are any themes which could be used to inform messaging with frontline staff, policy developers, and health care executives.

Ethics of AI

There are certain scenarios where AI will positively disrupt the way nursing care is provided. Both the patient and nurse will benefit. At the same time, nurses need to consider, discuss and balance any potential, unintended consequences of introducing AI into practice. Nursing as a profession now needs to grapple with the ethical question which Hollywood of the 1980s first introduced – just because we can, should we? If yes, when is it ok? If no, why not?

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FUTURE OF NURSE EDUCATION

Immersive technologies such as augmented reality and virtual reality have the potential to drastically alter the landscape of nurse education

Reality exists in the human mind, and nowhere else.
~George Orwell, 1984

As technology advances, so does health care. Web or cloud-based software has helped us develop medical records and continues to integrate into our daily practice. The question is: Is this innovation or are we just catching up?

The first hospital to develop electronic medical records (EMR) was in the mid-1960s and in the early 1970s, the first full EMR system was implemented (Evans, 2016). This was 40 years ago. So, to discuss an EMR as innovative perhaps seems confusing. What then is innovation and what does it mean for nursing?

Plainly, Wikipedia tells us that innovation is a new method, idea or product (Wikipedia, 2019). Have you or a team member had a new idea at work that could help workflow, or help patients? Think then, how easy is it for that idea to evolve and become real change?

If you haven't yet, you will soon get the opportunity to use immersive technologies – augmented reality (AR) or virtual reality (VR). AR literally places you inside a whole new world. This is where innovation starts to get extremely exciting. Learning traditionally takes place with the teacher at the front of the room speaking to the class whereas these technologies immediately change the landscape of the classroom by placing the learner inside the content.

Currently, no VR therapy-based application is approved by the Food and Drug Administration (FDA). But that doesn't mean there are not hundreds, if not thousands, of start-up companies globally deep in research looking to build applications, to help patients and save organisations significant time and money.

To understand the potential of this emerging field, the European Union's Horizon 2020 programme is allocating nearly $91.5 billion USD of funding towards VR and AR projects over seven years for research and innovation. Complex rehabilitation, pain therapy, building empathy, patient education regarding diagnosis and prognosis and autism behavioural management are just a few examples of where these technologies may stamp their presence.

The area where AR and VR has really hit the ground running is training and education. Surgical skills, anatomy and physiology, simulation-based scenarios are all examples that are being applied and utilised in current clinical settings. Immersion is the key. Imagine learning about diffusion from respiration and being able to stand in the alveoli and watch the air flow in and out right in front of your eyes or learning about sinus rhythm and be able to hold the right atrium in your hand. This is captured in full 360-degree, three-dimensional vision and allows a significant "wow" factor. The key features to immersive learning that are being integrated into industry are an ability to learn faster, learn more and retain knowledge longer all the while engaging learners to get excited about learning.

Through Bundle of Rays, which was established 12 months ago, we have been working hard to try to understand how these technologies can have an integral place within nursing education. We teach clinical skills i.e. ECG and chest X-ray analysis and we utilise the technology, much like a teacher would have utilised an overhead projector back in the 1990s. We use it as a teaching tool, not a magic bullet.

We have been delivering courses across Australia with a strong focus on rural and remote regions. Through us, health care providers such as hospitals and clinics and health-based training organisations i.e. universities and colleges to choose and implement VR for their own internal training purposes.

Murray (2018) clearly outlines that the continued emergence of new interactive and engaging technologies has created an inflection point in nursing education, demanding a change in the usual conducting of the business of nursing education. To grasp and understand these dynamic changes across industry, nurses on the ground will be required to take control of this change with measured engagement of innovation. This is a new wave of process learning but not encapsulated just to VR and AR, also emerging are blockchain, machine learning and AI, robotics, drones and 5G Wi-Fi capabilities for current Information Technology infrastructure.

Integration and adoption are the key determinants for successful uptake of innovation. Inspiration, cultivation and collaboration add to produce the momentum for change but essentially the integration of innovation is a cultural issue, not a technological limitation. To talk about change and to lead it are two entirely different entities. Do you have an idea that can change the world? If you do, chase it.

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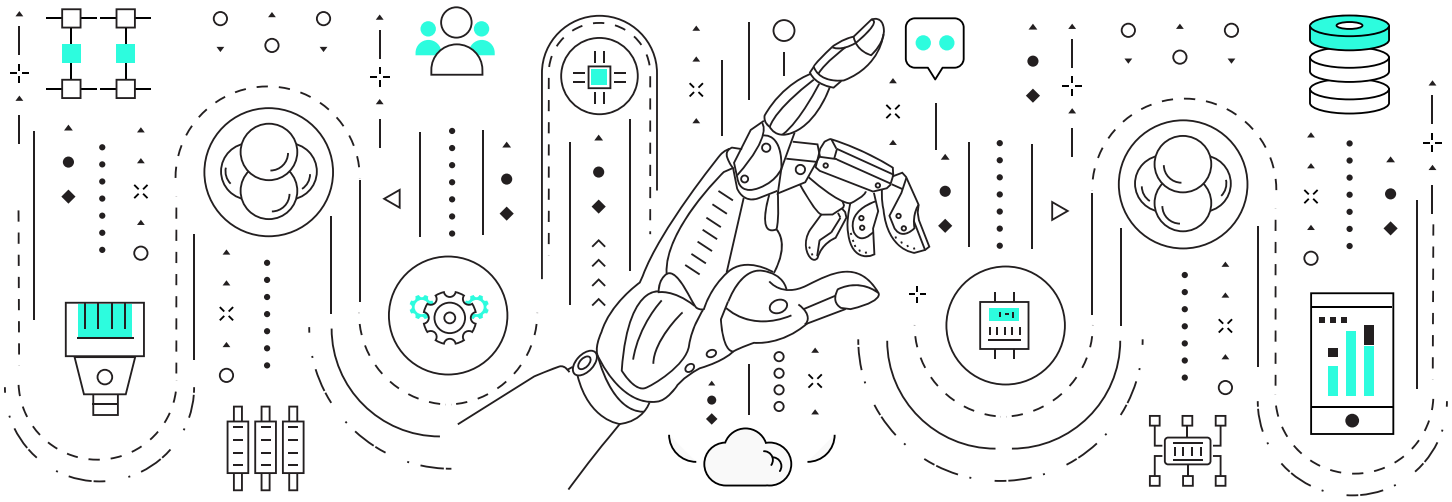
AI WILL RESTORE THE CARE INTO NURSING



Those of us on the frontlines of health care delivery feel the painfully slow integration of effective information technology (IT) and artificial intelligence (AI) into our workplace every day. Why – within the same time that we wait to fax life-critical information between hospitals – can we book the algorithmically determined cheapest flight to Bosnia on our smartphones?

Ironically, where clunky and piecemealed IT solutions are deployed, they disrupt the most critical patient-caregiver space – communication; today's caregivers are typing at screens, responding to alarms instead of people and fending off burdensome data entry requirements inside user un-friendly interfaces (The New Yorker, 2018).

The consequent burnout may be accompanied by meanderings about AI job replacement. Does AI fear trump AI belief? Does the nursing community consider 'Tug the Robot (Wired, 2017)', who roams hospital corridors delivering food and drugs a helpful companion or a functionally evolving foe? Health IT guru Bob Wachter, MD, resolves that now is the time for optimism (Wachter & Howell, 2018); he advocates that advancing further along the health care technology adoption curve will in fact hasten our return to traditional patient care.

As our beloved baby boomers age and accumulate multiple chronic conditions and care needs, our nation simply will not be able to afford the rising costs for the holistic care we wish for those dearest. Moreover, as Health Workforce Australia workforce supply projections fall short (HWA 2014), we will too soon reflect romantically on today's seemingly overwhelming ward demands.

To that end, the purpose of the Australian Digital Health Agency (the Agency) is 'Better health for all Australians enabled by safe, seamless and secure digital health services and technologies that provide a range of innovative, easy to use tools for both patients and providers…(ADHA, 2017).'

Inevitably, AI will become our autopilot – robotising mundane workflows and optimising time (life) sensitive logistics – but we will still be flying that plane at the bedside and empowering better health choices by arming patients with the world's best available evidence (Califf et al., 2016).

One example: IDx ® developed a validated algorithm (Abramoff et al., 2019) in the USA, which triages diabetic patients to an ophthalmologist only if indicated by automated fundus photo analysis; this truly democratises compliant access to eye screening recommendations (Essendon Eye Clinic, 2008), which are not met by 25% of non-indigenous and 50% of indigenous Australians (Foreman, Keel & Dirani, 2018) and will absolutely prevent avoidable blindness. As the first fully autonomous AI tool obtaining FDA approval just last year (FDA, 2018), this translational milestone signalled a crossing of the chasm – AI has already achieved clinical impact in offering sight-saving screening tools the world has never seen before. This non-trivial feat has since seen 30 further FDA approvals through June 2019 (Liu et al., 2019).

However, for most research, the implementation gap (Shaw et al., 2019) looms large – how to transform a great algorithm into a clinically relevant, workflow-integrated product that demonstrates patient outcome improvements. Other AI challenges include establishing regulatory standards, benchmarking accuracy (Liu et al., 2019), liability, reimbursement (Gordon & Stern, 2019), visualisation (Selvaraju et al., 2017) of the 'why' inside the 'black box' and ensuring model generalisability (Weigand et al., 2019) (equitable performance in different settings).

> **“AI quality is only as reliable as the data building it; in other words, our clinical data capture at the point of care feeds the knowledge of the future.”**

Most importantly, in assessing the performance of purposefully adaptive software (those which continually ‘learn’ in the field), we need rigorous and iterative post-deployment validation (Yu & Kohane, 2018); this is where nurses must play a big role. Furthermore, as AI becomes more accessible and algorithms become commoditized (Nature, 2019), it is vital to remember that AI quality is only as reliable as the data building it; in other words, our clinical data capture at the point of care feeds the knowledge of the future – a second area of imperative nursing contribution.

We also have the responsibility of gatekeeping our health care system; first, as guardians of our patients, by evaluating new workplace IT products, especially those at the clinical interface; second, as frontliners who understand downstream consequences, we can anticipate the unintended consequences of proposed improvements to systemic efficiency. Early and active involvement is key, as is iterating alongside technologists throughout the whole development cycle. This 'co-development' approach is a fundamental tenet of ADHA’s ethos, engaging multidisciplinary teams (including practitioners) along the journey.

Education in digital health (DH) literacy is therefore paramount for the nursing workforce. Resources abound and ironically, coding itself and parts of AI are becoming increasingly automated. A recent study educated regular clinicians about automated AI capabilities, who then designed and implemented deep learning models for a health care application they chose. It conclusively demonstrated improved accessibility to this technology for non-AI experts; more importantly, it facilitated engagement with the medical community and empowered clinicians to enhance their understanding of the advantages and potential pitfalls of AI integrations (Faes et al., 2019).

Australia is strengthening its primary health care network, which is known to provide efficiency gains, lower hospitalisation rates, fewer inequalities and better outcomes (Department of Health, 2013). Although we can't avoid the emergence of robots (Tapus et al., 2012), bots, remote virtual nurses and coaches, there will always be demand for traditional nurses (ADHA, 2017). Furthermore, as we decentralise health care services and normalise asynchronous therapeutic communication (e.g. mobile and web apps), new opportunities will arise for specialised nurses (Auerbach et al., 2018) in tomorrow's tech-enabled team approach to primary care (Topol, 2019).

Eric Topol, MD, concludes best: ‘Tug’ The Robot...is certainly not a threat,” because “deep learning or Robots will (never) be capable of reproducing the essence of human-to-human support". Ultimately, AI is there to free nurses from tasks interfering with human connection so that they can get back to caring for patients and “make health care human again (Topol, 2019)”.

Dr Ashley Kras is the Clinical Reference Lead at the Agency.

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NURSES CAN BE INNOVATORS

A unique opportunity reveals how nurses can play a vital role in innovative health care solutions

I have always wanted to learn more about health care outside the ward environment and the business aspect of health care. So when I came across an ad for Biodesign Australia, I was intrigued at the idea of a six-month program during which participants must identify unmet clinical needs and work towards providing a solution, but also have an opportunity to learn about the process of patenting, business and funding strategies.

In the application, one had to provide an example of how they have been innovative. I wrote about taping a kidney dish to the shower wall for a patient to put his razor, toothbrush, etc. It may not appear ground-breaking, but I've learnt that innovation doesn't have to be.

I am part of a team of five. The team members come from diverse professional fields – in my team, we have Daniel Armani (biomedical engineer), Olivia Bettane (health economics Masters student), Jacob Petersen (mechanical engineer) and Sandeep Poorun (general practitioner). We also have two mentors. The course encourages you to begin with an entrepreneurial mindset and guides you to develop a good team foundation and project management strategies from the get-go, with assistance from a leadership consultant. I found this process valuable and enjoyable as it ties into leadership skills I have learnt from the Australian College of Nursing (ACN) Emerging Nurse Leadership program.

Our team was assigned the specialty of Geriatrics, which led us to do some clinical immersion (attending ward rounds and multi-disciplinary team meetings) in a geriatric department of a public hospital. As a nurse, it was interesting to see how things are done in another hospital and to get a better insight into interprofessional practices.

It was also fascinating seeing my teammates trying to make sense of this (sometimes) strange and fast paced system. After filtering our observations, we identified where we saw gaps in the system/care delivery to identify our top 'clinical needs.' From this, we have chosen to work on dysphagia (swallowing difficulty) in the elderly population. During our brainstorming for solutions, I made my team members try thickened fluids; their reactions were priceless! They can't believe we actually make patients consume those.

As a clinical representative on the team, I provide insights on disease states, the role of nursing in care delivery, insights into patients and into the health care system (especially from a hospital perspective). This assists us to make decisions and ground our solution in clinical reality.

The use of clinical perspective is encouraged as often, medical development teams primarily consist of engineers and marketing people. For me, the opportunity to have the discussion about gaps in health care with people from outside health care system is invaluable as they provide such a unique perspective and help you question the norm. For example, my teammates commented on the communication used in hospital and were surprised at how health care is lagging behind when it comes to technology.

We are now currently conducting validation interviews with medical specialists, speech pathologists and nurses to gain more insights into dysphagia. Through this process, I reached out to nurses on ACN's ***neo*** and had members volunteer themselves and colleagues provide their expertise, which was great to get the wider nursing/allied health community involved. We are also currently prototyping potential solutions, and I am learning a lot about design considerations. From a nursing perspective, my contribution to discussion mostly revolves around considering workflow integration, patient comfort and how the solution we are developing would impact current treatment/workflow pathways.

One of the biggest lessons I have learnt is that it is easy to get invested in a problem or solution, but because of your bias and/or lack of stakeholder engagement, you may not realise you have identified a problem that's not really a problem (as viewed by those directly involved e.g. clinicians, patients). The importance of validating the problem by understanding the patient journey, stakeholder interests, current health care practices, challenges to change/uptake and the business potential is vital.

In the next three months, we will learn about writing a provisional patent, prototyping strategies and considerations, reimbursement and regulatory pathways and commercialisation strategies. In November, we will pitch to investors and have the chance to potentially develop a product that can be used in health care.

As a nurse, this experience has been invaluable for me. It has opened up to me a world beyond just nursing and has given me a perspective that I was lacking before. It is true that as nurses, our primary responsibility is to care, but we often don't realise that as the first point of contact for our patients, we are in a much more advantageous position to really know what benefits them – or doesn't. And so, we are capable of providing a lot more input in terms of innovative health care solutions and consequently improving the lives of those we look after.

AUTHOR

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COMMUNITY OF INTEREST: NURSE INFORMATICS

Nurses who are #doingITwithcare

The Australian College of Nursing (ACN) Nurse Informatics Community of Interest (COI) has had a wonderful year, growing in numbers on the ***neo*** platform from 101 to 179 members. Four of our members have written blog posts on a variety of topics related to informatics that have been published in ACN's blog, *NurseClick*.

In late 2018, the My Health Record Champions program was launched in collaboration with the Australian Digital Health Agency and was met with fantastic feedback from both participants and organisations. The second round of My Health Record Champions had fabulous interest.

The COI has also been hard at work the past year developing and launching our campaign, *Demystifying Nurse Informatics*. Our aim is to increase awareness, understanding, education and raise the national profile of nurse informatics throughout Australia. We believe that in this day and age, every nurse is (and has the ability to be) an informatician!

We are passionate about educating, encouraging and discussing the use of informatics in your nursing practice – share your stories, experiences and achievements on how you are #doingITwithcare on the Nurse Infomatics COI ***neo*** site and social media! Find the COI at **acn.edu.au/membership/coi**

AUTHORS: COI LEADERSHIP TEAM

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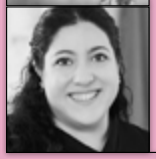

REBECCA JEDWAB MACN

Harnessing the power of big data

A look at nursing documentation in EMRs

Documentation has been a crucial part of a nurse's role since the days of Florence Nightingale. It is a critical mechanism for recording nursing assessments, interventions and outcomes, detailing changes in the patient's health status, evaluating progress against the patient's care plan and communicating key information to other members of the health care team.

The practice, however, has changed with the introduction of electronic medical records (EMRs). The nurse's trusty four-colour pen is becoming obsolete as EMRs gradually replace paper-based progress notes, observations charts, medication charts and other commonly used forms.

Much has been written about whether EMRs have achieved their aims of increased efficiency and improved patient outcomes – suffice to say that most health services are yet to achieve the holy grail of an EMR that is readily accessible in the workplace, intuitive to use, impervious to IT outages, interoperable with other health services, populated with complete and accurate data, provides watertight data security, and offers excellent capacity for data retrieval and analysis by clinicians.

Nursing notes, of course, comprise a critical part of the EMR. But how has the process of nursing documentation changed with the computerisation of patient records? In health care settings where EMRs are in use, the nurse may be provided with a combination of structured data fields and free text fields in which to document relevant information. One of the criticisms of EMRs is that they do not allow nurses to adequately capture the subtleties and complexities of nursing care, and that the narrative of the 'patient story' can too easily be lost. Whilst structured data fields are well-suited to capturing certain parts of the clinical picture, such as vital signs, infusion volumes or doses of medication administered, there are numerous elements that cannot be turned into numbers or summed up in a drop-down menu option. Free text fields are therefore essential to allow nurses to elaborate on other important aspects of care, particularly emotional and psychosocial elements.

The challenge with this, however, is how to utilise this rich source of information to its maximum potential, in terms of big data analysis. This is one of the key advantages that EMRs offer over paper-based records: the ability to utilise large data sets for data mining and analysis helping to identify trends and patterns that clinicians can use to improve patient care. Researchers have pointed to the potential for data mining and analysis of nursing notes to identify patterns in how symptoms are described and how patients react to different interventions. Finnish nurse researcher Salanterä (2015) gives this example of what the future may hold:

"*By developing analysis systems, we could create alerts and predictors of recovery process into electronic health records. For instance, if a nurse writes about a patient's reactions to pain medication, this information is instantly compared with current research on side effects, and the program alerts the nurse that an adverse event might occur and gives a suggestion for relevant care.*"

In order to fully leverage the valuable information contained in nursing documentation within EMRs and reach a time where EMRs can provide individualised clinician support, it is essential that nurses are involved in the design and development of big data research architectures. Nurses must therefore ensure they seize the opportunity to be part of the team when EMR systems are selected, configured or upgraded.

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REGION: AUSTRALIAN CAPTIAL TERRITORY

Boosting nurse leadership

The Australian Capital Territory (ACT) Region leadership team was formed in November 2017. Quite a few local nurses expressed an interest in being involved which enabled us to hit the ground running. The four of us have all lived in Canberra for many years and bring with us a variety of nursing experience working in the ACT Region. Rowena is currently a Clinical Nurse Consultant at Calvary Hospital, managing the Zita Mary Oncology Clinic, the *GRACE* program and *Hospital in the Home*. Tim is a part-time lecturer at the University of Canberra and works as a senior nurse in the Emergency Department at Queanbeyan Hospital. Meg is currently an educator in the medical stream at Calvary. I (Kathryn) work in a non-clinical role, managing a team that assesses the qualifications and work experience of internationally qualified nurses and midwives for migration purposes. My clinical background is emergency nursing.

When I took on the role of Chair of the ACT Region, I was confident about being able to bring nurses together from across the Region. The Leadership Team was engaged and eagerly busied themselves planning experiences for nurses to come together to connect and inspire one another.

We began by surveying Fellows and Members early in 2018 to help us plan events. We received 48 responses from a membership base of just over 300 nurses. Social activities rated highly, so did education relevant to management and leadership. Clinical care and research related topics are also of interest to local nurses. Most respondents reported over 20 years of nursing experience and were over the age of 40. To those that responded to the survey, thank you. The time you took meant we had direction.

Between networking drinks, weekend breakfasts and weekly walks around the lake to coincide with the ACN NurseStrong campaign, we have built a small network of like-minded, engaged nurses who all want to be an active part of their profession. We have hosted two evening education sessions *Focused resilience for nurses* and *The role nurses play in the accreditation of our health services.* Attendance was good and feedback valuable.

In February this year, we hosted our first ever New Graduate Nursing Conference to support those between study and first-time work as a nurse. The idea of this conference came from Meg, the Region's communications co-ordinator, who is passionate about supporting the early-career nurse. This event was a huge success and provided a comprehensive overview of key elements of a nurse's workday in a clinical setting – patient assessment, medication management, wound care, the deteriorating patient, mental health assessment and pain management. There was a Q&A session with a panel of clinical educators and clinicians from both The Canberra Hospital and Calvary. We ended the day with drinks and canapes to welcome these new nurses to the profession.

Fast-forward to the end of 2019, we can look back and reflect on what the Region has achieved, or we can look to the future and plan for more opportunities for nurses in Canberra to come together and celebrate what we do – individually, as a team and as a profession. We encourage you all to reach out to us if you live in or around Canberra. Be a mentor, attend a walk, offer to share your experiences. We hope that the people who volunteer their time to share their stories inspire you and motivate you in your nursing journey.

For information on how to participate in ACT Region activities, visit **acn.edu.au/membership/coi**

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DISTINGUISHED LIFE FELLOW: ROSALIE PRATT AM FACN (DLF)

Championing change

With co-author Professor Lynette Russell AO FACN DLF at the launch of *A Voice to be Heard* The first 50 years of the NSW College of Nursing

The day she donned a nurse's uniform as a five-year-old, Rosalie knew she wanted to be a nurse. "I was nearly five when the Second World War was coming to an end. My mother had organised a little store to sell things to the local neighbourhood in aid of Red Cross. I had dressed up as a Voluntary Aid Detachment (VAD) member – I think that was the trigger for thinking 'this is what I want to do'," says Rosalie.

Born in Sydney, Rosalie spent some of her early life in the Blue Mountains, Katoomba. She went to a selective girls' high school where "the anticipation was that bright students would go to uni", but after the third year ended, Rosalie decided to pursue nursing as a career. "My teachers were shocked but once I make up my mind about something of that magnitude, I stick to it."

At 22, Rosalie received a General Nursing Certificate from Royal North Shore Hospital, Sydney in 1962. She went on to gain her Midwifery Certificate the following year from the Royal Women's Hospital, Melbourne.

Of course, student nurse experiences didn't come without challenges. "The lack of correlation between theory and practice, and of intellectual stimulation was really prominent," she says, "and nurses tended to be seen as handmaidens of doctors, not to mention time pressures and the tedium of oft-repeated routines." To counterbalance that, however, "we were able to develop very rewarding relationships with patients and other hospital staff and lifelong friendships with other nurses". "It was a balance between happiness and heartbreak," she adds poignantly.

"As a student nurse, I became interested in nursing organisations. In Sydney, the industrial organisation was the NSW Nurses' Association and the professional organisation was the Australasian Trained Nurses' Association, the NSW branch of the Australian Nursing Federation. (Later, ATNA (NSW) amalgamated with NSWNA, which "harmonised" with ANF, 1988, and changed to NSW Nurses and Midwives' Association, 2012.) I attended meetings, joined the student nurses' group of ATNA and connected with other student groups. Hence my journey towards service to membership organisations," Rosalie explains.

But the core concept of nursing – to work towards holistic well-being of patients in need – was never far from her mind. In 1963, Rosalie headed to England to study Spinal Injuries Nursing at the Stoke Mandeville Hospital. "My time there was a defining experience. I began seeing the patient as a whole person and understanding that nursing was pivotal to rehabilitation. The concepts of prevention, rehabilitation and seeing a patient as a whole person became the guiding motifs in my professional life."

“I was nearly five when the Second World War was coming to an end. My mother had organised a little store to sell things to the local neighbourhood in aid of Red Cross. I had dressed up as a Voluntary Aid Detachment (VAD) member – I think that was the trigger for thinking ‘this is what I want to do’.”

As a 3rd year student nurse at ICN Congress in Melbourne in 1961

As NSW College of Nursing Deputy Executive Director

Speaking at the 50th anniversary of the NSW College of Nursing (1999)

A true leader, Rosalie was actively involved in the fight for nursing to be included as tertiary education in NSW in 1970 and 80s. She was on a number of assessment committees for development of the curricula for colleges that were taking up nursing. Earlier, Rosalie was seconded to the NSW College of Nursing to run the first Spinal Injuries Nursing Course, from her position as a clinical instructor on the Spinal Unit at the Royal North Shore Hospital.

But the inclusion of nursing in tertiary education – a development that Rosalie counts as one of her major professional achievements – established it as a profession in its own right and also enabled nurses to engage in scholarship, including research and writing.

As a nurse leader who’s often spoken to nursing students through orations and graduation speeches, Rosalie believes that “it’s a huge leap of faith in relation to teaching, speeches and writing as to whether nurses have listened to what you have said or read what you’ve written”. “Have your words changed their way of thinking and practice? That’s what one needs to think about.”

Rosalie recalls a graduation speech in 1980 at her alma mater, where she spoke about nurses being the keystone of the health care team arch. Years later, she ran into one of those students who admitted that she had decided to continue practising nursing after hearing Rosalie’s speech. It was humbling and yet, a moment of pride for Rosalie.

“It’s what I’ve endeavoured to do – to highlight to nurses the importance of what they do – by offering new ideas and perspectives to think about. And the belief that I’ve contributed to the well-being of humankind through nursing and nurses – by clinical practice certainly, but mostly through teaching, writing, speaking and active service with nursing organisations, national and international – has been the most gratifying part of this experience. Much of it has been a matter of faith that I have indeed ‘made a difference’.”

MEMBERSHIP MATTERS

Rosalie has a keen interest in environment, especially through the lens of nursing. Nursing, she says, is all about concern for people’s health and well-being, which ultimately depend on the planet’s health, its resources and biodiversity. “Over the years, they’ve both been significantly affected for the worse. I think nurses need to be informed about this and work towards change.”

Rosalie adds, “Nurses have to think globally but act locally – individually and collectively – and this is where membership organisations come in.”

She refers to the Australian College of Nursing’s Community & Primary Health Care Community of Interest and ACN’s recent position statement on climate change as examples of how nurses can make a powerful contribution to the environment and consequently, the society.

“In 1985, Dr H. Mahler, the then director-general of WHO, said in an address that he thought that nurses could be in the lead for change, they could act as a powerhouse of change by coming together as one force to articulate the same ideas and convictions. It really struck me as tremendous. It highlights the importance of nursing organisations and nurses becoming members of them.”

“My one piece of advice would be: Join, and become active members of, your professional and industrial nursing organisations. That, hopefully, would facilitate conditions of practice which enable nurses to focus on the person at the centre of their care, and provide education courses to enable them to keep their relevant knowledge and skills up to date.”

Better nursing support equates better aged care

ACN presents evidence at Royal Commission into Aged Care Quality and Safety to highlight challenges – and potential solutions – for nurses in aged care

The Royal Commission into Aged Care Quality and Safety held a public hearing in Melbourne from 14–18 October 2019. The focus was on how to enhance the aged care workforce's capacity and capability to provide high quality care, support good quality of life, and make the aged care sector a more attractive and rewarding place to work.

As a nation, Australia has drifted into an ageist mindset that undervalues older people and limits their possibilities. Sadly, this failure to properly value and engage with older people as equal partners in our future has extended to our apparent indifference towards aged care services. Left out of sight and out of mind, these important services are floundering. They are fragmented, unsupported and underfunded. With some admirable exceptions, they are poorly managed. All too often, they are unsafe and seemingly uncaring (Commonwealth of Australia 2019).

The Interim Report: Neglect (Commonwealth of Australia, 2019) released by the Royal Commission on 31 October 2019 states:

> *"We have found that the aged care system fails to meet the needs of our older, often very vulnerable, citizens. It does not deliver uniformly safe and quality care for older people. It is unkind and uncaring towards them. In too many instances, it simply neglects them."*

The Australian College of Nursing (ACN), pursuant to s 2(3C) of the *Royal Commissions Act 1902* (Cth), was required to give a statement to the Royal Commission into Aged Care Quality and Safety. ACN's CEO Adjunct Professor Kylie Ward FACN was called as a witness to present on the stand to the Commissioners on 17 October 2019.

The health and well-being of Australia's ageing population painfully demonstrates what happens when nurses are removed en masse from systems where they provide value. In 2017, the largest proportion of nurses and midwives were employed in clinical practice (90%) with 14% in aged care (ANMF, 2019). The number of registered nurse (RN) and enrolled nurse (EN) full time equivalent positions in residential aged care has dropped by 13% since 2003. Between 2003 and 2015 the number of residential aged care places increased by 30% and dependency levels of residents increased from 64.4% assessed as high care in 2003, to 89% in 2015 (ANMF, 2019).

The proportion of RNs to unregulated health care workers (UHCW) across all health care settings influences 'skill-mix' level, which in turn impacts quality of care and costs to the health care system. Research shows a relationship between effective nurse leadership and lower rates of restraint use, behavioural problems and complications of immobility (Anderson et al., 2003). Reducing the use of restraints was one of the three urgent recommendations in the interim report.

The inclusion of RNs across the health and aged care sectors (Twigg et al., 2013) has demonstrated outcomes such as prevention of key complications particularly in dementia patients (including incontinence, urinary tract infections, pressure ulcers, pneumonia and delirium) (McCloskey & Diers, 2005; Bail et al., 2013), fewer hospitalisations, shorter hospital stays, reduced use of Intensive Care Units and fewer visits to emergency departments (Palliative Care Australia, 2017).

Despite this, an increasing number of UHCWs are being employed in aged care, at the expense of RNs and ENs.

ACN highlighted some of the challenges the nursing profession faces in the aged care setting including but not limited to:

- the need to maintain the scope of practice of RNs in residential aged care facilities (RACFs) whilst highlighting the issue of skills and skill mix
- education, support and role modelling by experienced RNs which is critical for a successful workplace and valued student clinical placements to attract and retain our future aged care workforce
- delegation of duties to an unregulated workforce where there is variation in education preparedness and ongoing professional development
- supporting entry to practice nurses with quality clinical supervision when caring for older Australians
- low remuneration with nurses experiencing increasing workloads, insufficient time to complete necessary requirements for residents (Jennings et al., 2015), competing work priorities (Parliament of Australia, 2017) and excessive administrative tasks.

ACN's position statement on the role of RNs in residential aged care mandates the Government recognise that the role cannot be substituted by any other category of health care worker, and a minimum requirement for an RN to be on site and available in RACFs at all times.

> **“ ACN recommends that UHCWs must be regulated with nationally consistent nomenclature/titles, code of conduct, professional standards and scope of practice must be implemented. ”**

ACN recommends that UHCWs must be regulated with nationally consistent nomenclature/titles, code of conduct, professional standards and scope of practice must be implemented. They must also be regulated to achieve nationally consistent minimum education and ongoing professional development requirements. These issues are outlined in the ACN White Paper on *Regulation of the Unregulated Workforce across the Health Care System* (ACN, 2019).

The ACN Position Statement, *The role of the RN in residential aged care* and White Paper, *Achieving Quality Palliative Care for All: The Essential Role of Nurses*, outlines the complex care needs of aged care residents. With the growing prevalence of co-morbidities associated with physical and cognitive decline, polypharmacy and greater professional accountability, they require more complex care that can only be provided under RN supervision (Bonner et al., 2018).

The nurse practitioner (NP) is a role that uniquely combines practice privileges previously limited to medicine, with the nursing model of practice. Current and ongoing research supports the effectiveness and safety of NP service and the acceptability of this role by patients, clients and other health professionals (Bonner et al., 2018; Gardner & O’Connell, 2013; Jennings et al., 2015). ACN calls for an NP in every RACF and alternative funding models to incentivise them into RACFs.

Effective leadership ensures a positive, supportive and efficient workplace culture in which staff feel appreciated and their professional development is valued, resulting in greater stability, reduced turnover, higher rates of recruitment and quality patient care (Twigg & McCullough, 2014; Duffield et al., 2011). However, managers do not always have the skills necessary for leadership roles as selection is generally based on clinical skills and level of seniority. Therefore, succession planning and mentoring at all levels of an organisation is essential (Titzer et al., 2013; Titzer, 2016).

ACN will continue to advocate for an aged care system that meets the needs of our older and vulnerable citizens. This will require the better engagement of the nursing profession to meet the needs of older Australians.

For regular updates on ACN’s submission to the Royal Commission into Aged Care, follow NurseClick at acn.edu.au/blog

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ETHICS MATTERS:
ARTIFICIAL INTELLIGENCE

AI: A good means to a good end?

> **“To date, the research is not certain that socially assistive robot (SAR) in some health care contexts results in more benefits than harms.”**

In this edition, we discuss some of the moral aspects of artificial intelligence (AI) for our profession: can robots ever replace nurses?

As we all know remarkable advances have been made in the field of technology and health: robotic surgery, for example, resulting in a much improved and positive impact for many patients in terms of their results and recovery times. There are also proposals for 'socially assistive robot' (SAR) technology to be utilised to address various physical and psychological aspects of care of the elderly, for example, those who are lonely or have dementia (Abdi et al., 2018).

On a broader scale, Australia's Department of Industry Innovation and Science recently conducted a public consultation process to determine community views on Artificial Intelligence: Australia's Ethics Framework (2019) (Discussion Paper). The Discussion Paper is wide ranging and includes consideration of how AI technologies can be ethically adapted or employed in a range of situations, including health. It states that although AI has the potential to provide enormous benefits, “when it comes to human behaviour, however, it's a challenging philosophical question with a wide range of viewpoints” (2019, 6). Chapters four and five are perhaps of most interest to nurses since it is here that philosophical questions to do with “delegating responsibility for [moral] decisions to machines” or where machines “make judgements about people” are canvassed (2019, 10-11, 33-47). Although the Discussion Paper does not mention nurses specifically, AI will have an impact on the way nurses care for people and the way they record that care (data capture and analysis, for example).

How then can individual nurses approach these complex and continually evolving circumstances in such a way that they are also able to provide care in a manner that is consistent with the profession's ethical expectations (NMBA, 2018) and with their own values. It is not possible in this short article to address all these issues in a rigorous fashion, so we will simply look at two important ethical maxims that can frame your thinking on this aspect: ‘because we can we should’ and ‘means and ends’.

Some might think that it is too late to concern ourselves as a profession with the maxim ‘because we can we should’, but when it is suggested that robots, through SAR technology (Abdi et al., 2018), provide comfort to older people and ease loneliness, we do need to at least reflect on what that might mean for the patient and the nurse.

Reflection has become significant in nursing, for example, the work of Christopher Johns (2013). It is also important to philosophical analysis of the type that is used in applied ethics. Whether or not nurses as a profession adopt and support SAR (probably inevitable) and how they do that, is fundamentally an applied ethical question. For a nurse, reflecting on one's ethical values with reference to the profession's ethical expectations (NMBA, 2018) is intrinsic to both making ‘good’ decisions and then taking ‘good’ actions (or not) on this topic.

Simply put, reflection gives direction to analysing the questions: are we getting where we want with AI (the end) and are we getting there in the right way (the means).

So, for example, we would reflect on questions such as: because we can employ AI in caring for those with dementia (Abdi et al., 2018), then is it a ‘good’ thing that we do so? And if we do, then will SAR robots such as ‘Paro’ result in more benefits than harm? We also need to reflect on answers to the question: If we use SAR will that have more beneficial outcomes than if we don't use SAR or some other AI technology? If either SAR, or an untested treatment, is not a good means to what may be a harmful end, then because we can use that approach should we? It should also be noted that not all robots are the same: some are of the SAR type and others are for more physical assistance. It remains the case, however, that we always need to determine the overall benefits are greater than the harms, so the general comments made in this article will apply, no matter what type of robot or AI we are talking about.

One way of deciding whether to accept AI technologies is to turn to the available research literature. Nursing is always practised as an evidence-based endeavour, so research is required to determine possible answers to questions. In the case of AI, does the available research demonstrate a good way (means) to a good result (end) or is it lacking? To date, the research is not certain that SAR for instance, in some health care contexts, does provide more benefits than harms.

For instance, the scoping review carried out by Abdi et al (2018), includes five studies in Australian nursing homes and residential aged care where SAR was employed (there were also many other international studies included in the review). The authors conclude, however, that the results are not always positive: no better than placebo in some instances and in two instances, there were more negative than positive consequences (2018, 3, 11). It is sensible then and maybe even ethically obligatory, for nurses to ask what other avenues of research are required?

For instance, the nature of the relationships nurses build is central to effective (good) nursing care: it is a good means to a good end. To date, AI cannot replicate those benefits but if in the future it can do that, then what makes nurses an essential means to a beneficial end? The Discussion Paper referred to above states that whatever research is carried out it needs to be “gold standard research…before implementation” in the “medical” context (2019, 44).

This brief and somewhat superficial analysis of means and ends in AI that is being implemented, ‘because we can’ has nevertheless highlighted some of the ethical issues which AI raises, both for nurses themselves and for the community we care for and about. Two ethical maxims provide some direction as to the contribution the profession can make to this important and growing area of research and discussion.

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Fostering leadership among graduate nurses

Graduate nurses need to be empowered to cope with the complexities of our health care system

The nursing profession is on the verge of facing the most difficult challenge for health care in recent times. To meet the needs of the Australian population nursing staff are providing care to increasingly complex patients, with the largest predicated increase in burden of disease and population to occur in the next 40 years (ABS, 2017). Additionally, evidence that suggests that despite a predicted increase in health care needs, 32% of nurses will leave the nursing profession within the next 10 years (Health Workforce Australia, 2014). This raises serious concerns for the capacity of the Australian health care system to manage the increasing burden of disease in the Australian population. It is therefore imperative that the nursing profession continues to develop pathways that build clinical and professional capacity. The most successful strategy is aimed at the development of the graduate nurse workforce.

It is well-documented in literature that graduate nurses not only face adversities in adjusting to the responsibilities of registration, but also in assimilating into the nursing culture. Although organisations and government bodies are promoting the importance of structured education programs and creating a culture of professionalism (NMBA, 2018), novice nurses continue to experience trouble.

Duchscher and Myrick (2008) discussed that the clinical environment directly contributes to reduced satisfaction, moral and job distress in graduate nurses. Other issues such as compassion fatigue, lack of supportive frameworks and patient allocations take an emotional toll on novice nurses' ability to cope with new changes or environmental stressors, depleting an already fragile resilience system (Yoder, 2010).

Additionally, many graduate nurses may be entering their first professional environment which results in uncertainty in how to manage workplace incivility, contributing to increased likelihood of burnout (Boamah et al., 2017).

Unfortunately, literature concerning incivility mainly focuses on how managers and leaders can provide support to staff experiencing horizontal violence (Boamah et al., 2017), with authors incorrectly assuming nurses have developed tacit knowledge of graded assertiveness and conflict competence. A study conducted by Hart et al. (2014) reflects that capacity building is often aimed at senior clinicians that develop resilience among senior staff. Unfortunately, few authors have explored how these skills could benefit a new graduate nurse's assimilation into the profession.

Historically, building the capacity of nurses to embody emotional intelligence, conflict competence and interpersonal skills have been an unintentional consequence of experience. In contemporary health care settings, programs designed for senior clinicians and aimed at building capacity in leadership, conflict competence and emotional intelligence have reflected better resilience and management of adversities in research.

However, when evaluating the adversities of novice staff, multifactual challenges that relate to increased burnout may potentially be mitigated if novice staff have access to the same personal and professional development.

The Australian health care system relies on the capability of the nursing workforce to primarily manage disease across the lifespan. However, factors such as increased burnout and turnover in the novice profession threaten the ability of nurses to safely manage needs of the community. Forging skills in novice nurses that focus on building self-sufficiency in managing adversities are invaluable in ensuring a positive future for nurses and the community (Foster et al., 2019).

As recognised by professional bodies, governments and authors (Boamah et al., 2017, Duchscher and Myrick, 2008) graduate nurses are vital in providing a bright future for the nursing profession. To tackle the issues that they face in the health care system, there are many skill sets that can be used to build resilience and empower transition into the workforce. By doing so, staff can critically analyse adversities in the workplace, identifying gaps in professional culture and mitigating patient risks.

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Role of nurse practitioners in prescribing

Director of Nursing and Midwifery Professional Practice, Director of Nursing Yarra Rages Health, Healesville Hospital & Yarra Valley Health and Eastern Health, Joanne Mapes FACN talks about her experience representing the Australian College of Nursing (ACN) at the Medicines Leadership Forum in Canberra recently.

Could you tell us about the Forum?

I was privileged to attend the Medicines Leadership Forum in Canberra on 14th August. It was hosted by The Society of Hospital Pharmacists of Australia (SHPA). The event attracted pharmacists from across the country to explore practices pertaining to medicines safety, the interface between hospital discharge planning and community services, as well as medication safety at points of transition and safe prescribing practices in both admitted and primary care settings.

What interested you most about it?

I nominated via an expression of interest to attend this forum as a great opportunity to represent both ACN and the profession more broadly. As the Chair of the Scope of Practice Committee at my health service and a practitioner member on the Nursing & Midwifery Board of Australia, I have experience in the role of the nurse and midwife in medication safety and administration practice. This is an area of interest for me and my role, as I monitor nurse prescribing at Eastern Health, and represent nursing and midwifery on the Medications Management Expert Advisory Committee. We are currently undertaking a significant project to streamline the dispensing and education of patients regarding their discharge medications, and to consolidate prescribing in hospital to improve safety during transitions in care. This committee regularly reviews the Pharmaceutical Benefits Scheme (PBS) to expand our own health service formulary as appropriate.

As a former nurse practitioner (nurse prescriber) in the UK I have relevant experience and insight into the issues faced in primary care secondary to patient discharge form hospital after changes in medication regimes and supply issues. I am the Director for Professional Practice, which includes medication safety and endorsement, including expanded and extending scope of practice to include various medication administration and treatment regimes. I am also very familiar with the current restrictions on nurse practitioner prescribing in Victoria as a result of the limited formularies available.

What are your main takeaways from this opportunity?

The main discussion points of the forum included:

- PBS and the impact on medicines safety and access
- hospital discharge and safe medication management
- collaborative Practice models – medical/pharmacy
- same day discharge summaries/ medication reconciliation on discharge
- role of hospital pharmacists in supporting patient care, primary care, medical workforce and improving care outcomes.

Key learnings include the importance of clear communication in transfers of care and medicines management, and the vital role nurses play in educating patients and carers about medicines safety. In the primary care stream workshop we explored the role of hospital pharmacists in supporting primary care clinicians and considerations for district nurses, nurse practitioners (NP) and practice nurses who support patients after discharge and administer/prescribe and review medications routinely.

Are there any issues or benefits for the profession as a result of this event?

We need to continue to lobby for improved access to the Medicare Benefits Schedule (MBS) for NPs and remove formulary restrictions in those jurisdictions where this is limited. Nurses in primary care are strategically placed to promote medicines reviews for patients following hospital admission/transfer of care and improved access to medications for Residential Aged Care Facilities via community services and nurse prescribers in primary care.

The profession must continue to lobby for access to closing the gap between funded PBS meds for Aboriginal and Torres Strait Islander patients attending hospital emergency departments and outpatient clinics who cannot currently access funded meds on a hospital script from a hospital pharmacy (unless the health service has agreed to fund on an individual basis) which delays treatment or may hinder initiation of treatment where the cost is prohibitive. Currently only community pharmacies and primary care scripts are eligible under the scheme.

Why do you think this event required a nursing contribution?

The SHPA sought nursing input for this forum to ensure the voice of nursing was captured and considered in these discussions. This is vital to ensure “we have a seat at the table” when contemporary issues are being discussed that impact our practice and patient outcomes.

To contribute to the policy paper planned and communities of practice to share best practice initiatives, and to monitor the roll out of the registered nurse prescribing in partnership initiative and implications for in-hospital and community practitioners.

This was a fantastic day and a privilege to represent the nursing profession. I thank ACN for the opportunity.

LEADERSHIP: MID-CAREER NURSE LEADERSHIP PROGRAM

Learning to make a difference

PATRICE MURRAY MACN SENIOR MENTAL HEALTH PROJECT MANAGER, ACT CHIEF NURSING AND MIDWIFERY OFFICE, AT ACT HEALTH DIRECTORATE

Patrice has been a mental health nurse for the past 10 years working mostly in adult acute inpatient mental health services. In her current role, she is employed to lead and manage a territory wide project across the Australian Capital Territory public health services.

The focus of her quality improvement project through the Program is called *Nurses and Midwives: Towards a Safer Culture*, addressing Occupational Violence and Aggression (OVA) as experienced by nurses and midwives across the territory.

Launched in December 2018, the project outlines 22 proposed strategic actions for creating a safer and healthier environment for ACT public health service staff, patients and visitors. "As a mental health nurse, I am passionate about the safety of our consumers, staff and visitors who work at or access our health services. Now, working in the strategy and policy arm of ACT Health, I want to continue pursuing the safest possible workplaces. The project supports this with the developed Strategy and Implementation Plan, outlining the proposed strategic actions, such as the development of a Challenging Behaviour Guideline and Lone Worker Guideline for the public health services to implement," says Patrice.

But how does the project relate to the Program? "Part of the success of this project will be our project team's ability to engage and influence change with our key stakeholders of health professionals across all levels. So, I wanted to learn from experienced facilitators and presenters of Australian College of Nursing and fellow participants to develop skills in effective communication, project management, change management, nursing leadership and strategy," she explains.

One of the objectives of the Program is leading workplace cultures through innovation, redesign and change. Patrice says, "The project requires robust collaboration of all interdependent projects related to Occupational Violence and Aggression that aim to lead innovative changes to safe work places and practices. I have been taught to heavily invest in relationships at the Government, ACT Health Directorate and Health Services levels. Not only will this mitigate a duplication of effort but will also build on the expertise across all levels, pushing the envelope to think and work outside the box."

She is now working on the next step, a mental health model and intervention called *Safewards* that aims to reduce conflict and restrictive practices such as seclusion, restraint and forcible giving of medication, traditionally implemented in mental health.

POUMANSING (RAJ) GUJRAZ MACN

NURSE UNIT MANAGER, SOUTH WESTERN SYDNEY LOCAL HEALTH DISTRICT, FAIRFIELD HOSPITAL

Raj, who's been in the managerial role for almost a year, currently manages a 20-bed base of a Rehabilitation & Geriatric Ward along with a team of nursing, medical and allied health staff. They offer in-patient rehabilitation to some of their vulnerable community post-fall or post-fractured hip.

Raj was nominated by his peers at the District level and sponsored by the health district to attend the Mid-Career Nurse Leadership Program. Speaking about his quality improvement initiative, he says, "Our ward currently has surged beds, which can be used to overflow patients when the demand exceeds capacity. However, there has never been any business rule in place to guide the usage of the surged beds. My project is to define that business rule to improve patient outcomes, implement reduced hospital length of stay and improve staff satisfaction."

Explaining why he chose the idea, Raj says, "I haven't had much exposure in the past leading a Quality Improvement project. Through the Program, however, I was able to gain knowledge and skills around patient flow, budget and risk associated with surged beds." He adds, "The highlight was understanding the budgeting need and how health care within Australia is funded, which in turn has helped me better understand the cost associated with patient bed days and how surged beds with a high turnover can reduce the cost as well as the length of stay within the hospital."

Leading change in the workplace is a key learning of the Program, and Raj has been able to develop self-awareness about his skills as a leader as well as reflect on his leadership practices. "I now practise a transformational leadership style that works for me and my team."

"The Program has taught me how to promote a healthy workplace culture. As a result, we have been able to drastically improve patient safety, for which I was awarded the Patient Safety Champion Award for 2019 for South Western Sydney Local Health District. We also received the People's Choice Award at the Patient Safety Conference at the district for the changes we made in the ward."

The key, Raj adds, is "to ensure continual support and celebrate small wins".

Australian College of Nursing

MID-CAREER NURSE LEADERSHIP PROGRAM

Through the Australian College of Nursing (ACN) inaugural Mid-Career Nurse Leadership Program, nurses who are passionate about advancing their careers are guided with personal development, career coaching and learning sets as well as unparalleled access to high-profile nurse leaders. As part of the Program, participants are required to complete a quality improvement initiative as well. We speak to four of them to understand how the Program has given them the confidence to lead workplace health cultures and make a difference to their community.

Applications for the next program intake, commencing on 24 February 2020, are now open. For details, go to acn.edu.au/leadership

BILJANA ANSTED MACN NURSE UNIT MANAGER BENDIGO HEALTH

Currently a registered nurse working as the Hospital in the Home (HITH) Nurse Unit Manager, Biljana has been working in her first management role for almost two years now.

The prospect of developing leadership skills and getting professional guidance from senior nurse leaders gave Biljana the boost she needed to apply for the Program. "To be able to engage with my chosen profession, network with fellow nurses and learn from the exceptional nurses in Australia was an opportunity I didn't want to pass up," she says.

Biljana's project is to develop a HITH Patient Review Escalation Card. "The aim is to simplify the review of HITH patients presenting to the emergency department after hours. We have identified that there are risks that HITH patients face when they clinically deteriorate at home after hours and present to the ED. The risks pertain to the classification of HITH patients as "in patients" and belonging to an existing specialist medical parent team and how these patients are triaged when presenting to the ED.

"In collaboration with the ED and the Clinical Directors I am developing a HITH patient review escalation card similar to an existing renal patient review card. The card aims to inform the ED triage staff and the treating medical staff of the patients HITH status and what the review escalation process should be to best facilitate the assessment and escalation of care afterhours and return the patient home with HITH services."

Biljana adds that valuable insights from the Program's speakers were a guiding force in her project. "Their presentations highlighted the need to develop and implement strategies in health that focussed on patient care, by providing appropriate care at the right time with a focus on safety, as well as how to implement a project management framework to reach these goals."

At the moment, Biljana is in the stakeholder engagement stage testing how the prototype card will be utilised in real time.

GEMMA PRICE MACN ARIA CLINICAL NURSE CONSULTANT

At the time of applying for the Program, Gemma was Associate Nurse Unit Manager (ANUM) in the Haematology Oncology unit at the Royal Hobart Hospital where she provided management and leadership to a team of 25 Full-time Equivalent (FTE) staff. Recently, she applied for a new position as ARIA Clinical Nurse Consultant.

"I have worked in the oncology unit for almost 10 years, it's where I started as a graduate nurse and have progressed to the position of ANUM. I also worked as a registered nurse in the Specialist Palliative Care Service and have been in this role for two years. Working between the two areas has given patients a level of continuity of care between the two services and has expanded my understanding of the richness of a patient's life in the community," Gemma says.

As an ANUM, Gemma would fill in for the nurse unit manager sometimes. "The expectation is to have a good handle on what it takes to manage an extremely busy specialised unit. The Program targeted everything I was looking for – knowledge required to manage high performing teams, the economics and human resource management involved in running a ward, understanding clinical governance and leadership strategies."

Gemma's quality improvement initiative involved looking at ways of working on the unit and reducing waste to provide nurses with more time at the bedside to care for patients. "In a recent hospital-wide staff satisfaction survey, some staff members felt that they did not have enough time at the bedside with their patients. We realised the need to identify where nurses were spending their time and tried to streamline nursing processes," she explains.

Talking about key learnings from the Program, Gemma says, "We discussed tools used for project management, identifying objectives and having a plan on the page for your project. From here, we identified the objective, the stakeholders, the importance of communication, keeping a timeline and tracking. We also looked at approaches to process redesign and discussed lean principles. This resonated with me as the focus was on removing waste and adding value to processes from the consumer's perspective."

Being able to hone her own leadership skills was another aspect Gemma counts as valuable. "I introduced some simple changes upon my return – such as getting staff together at the end of their shift to discuss one or two things that went well for them. Debriefing is encouraged in a supported environment."

She adds, "Having an enhanced level of understanding of regulatory frameworks and professional practice frameworks provided me with the knowledge to challenge staff when they were not performing within these frameworks and reminding them of the conduct expected in their role."

Overall, the Program, Gemma says, has been a gamechanger for her. "It has opened my eyes to the vast opportunities available to me through nursing and how to share that with other nurses and be a voice for the nursing profession."

NURSING HISTORY:

2020: The Year of the Nurse & Midwife and another Florence Nightingale anniversary

In 2020, Nursing Now will coincide with the commemoration of the 200th anniversary of the birth of Florence Nightingale, with the year officially declared by the World Health Organization (WHO) as the *Year of the Nurse & Midwife*.

Launched in 2018 in the UK in collaboration with WHO and the International Council of Nurses (ICN), Nursing Now is linked to the action to achieve universal health coverage (UHC) by 2030, one of the targets set by United Nations when adopting the Sustainable Development Goals in 2015 (WHO, 2019a). In 2016, a UK Parliamentary report (All-Party Parliamentary Group on Global Health, 2016) identified that its success would depend on strengthening nursing – not just increasing numbers of nurses but making sure they are enabled to work to their full potential – for the triple impact of improving health, promoting gender equality and supporting economic growth.

Five main areas of focus provide the framework for its goals and actions: ensuring that nurses and midwives have a more prominent voice in health policy-making; encouraging greater investment in the nursing workforce; advocating for more nurses in leadership positions; encouraging research that helps determine where nurses can have the greatest impact, and sharing examples of best nursing practice.

WHO has also announced it will also launch “first-ever” State of the World reports on Nursing and Midwifery. In response to the WHO declaration, the Nightingale Challenge was established by Nursing Now with the aim of preparing and empowering the next generation of nurses and midwives as leaders, practitioners and advocates in health (Nursing Now, 2019). It challenges governments and employers to provide training for 20 young nurses and midwives in 2020.

However, it’s not the first time nursing has been in focus as key to better health for all. The WHO, in its 2nd Assembly in 1949, established an Expert Committee on Nursing. On 7 April 1954, the World Health Day (anniversary of WHO) was dedicated to *The Nurse, Pioneer of Health*. This was the centenary year of the arrival of Florence Nightingale in Turkey with 38 nurses in 1854 to provide a nursing service during the Crimean War. The theme was a result of a proposal by The Government of Uruguay to recognise the centenary of the work begun by Florence Nightingale with reference to the role of nurses in public health (WHO, 1953). As reported in the Sydney Morning Herald on 7 April 1954,

> *The description of the modern nurse as a "pioneer" is no mere rhetorical play upon the Nightingale centenary, for at present there are some 140 nurses of 22 different nationalities working in 31 countries on projects for the World Health Organisation… (Nurses Essential, 1954, p.2)*

The article goes on to point out that the work of these nurses not only included treatment of the sick, but extended to collecting statistics on mortality and disease, managing general hygiene, and training local women as nurses. Does this sound familiar?

The WHO also announced that it would undertake a global study of nursing to coincide with the centenary of the work of Florence Nightingale in the Crimean War (A Nursing Survey, 1953). This was the first time WHO had studied a particular profession.

Florence Nightingale is recognised as the founder of the modern nursing profession. She had been appointed to by the Government to organise a nursing service as the ‘Superintendent of the female nursing establishment in the English General Military Hospitals in Turkey’ (Bostridge, 2009). Florence Nightingale led, organised and got things done. This pioneering development of nursing encompassed treating the sick and wounded soldiers as well as their welfare. Amongst other things, she set up proper laundries to clean sheets; engaged a chef to develop nutritious meals from rations; provided an ‘Inkerman Café’ with facilities to reduce boredom and alcohol consumption; and organised a better system for the soldiers to send money to families back home.

It was what Florence Nightingale did afterwards which also contributed to the value of the nursing experiment in the Crimean War. Her first few years were spent on the improvement of health of the British army through Committee work and compiling reports for a Royal Commission which included her famous and rewarded statistical work. In 1860, the Nightingale Training School for Nurses at St Thomas’ Hospital London was opened. It was financed by the public subscription Nightingale Fund set up during the Crimean War and was the first secular nursing school for women, preparing trained nurses for full-time paid work in the “new profession of patient care” (McDonald, 2018). From here, Nightingale nurses were sent across the world to establish training systems and improve health care. This included Australia with the arrival of Lucy Osburn and a team of five nurses to the Sydney Infirmary in 1868.

Colombo students

Colombo students Cyril Osai, Tess Hayble, Joseph Adamu at graduation, NSW College of Nursing

In 1954, the centenary commemorations in Australia promoted the value of nurses in a variety of ways. One was the issue of an official postage stamp by the Postmaster General's Department. The former Royal Victorian College of Nursing (with the Victorian Philatelic Association) and the Australian Nursing Federation (ANF) lobbied for a stamp to commemorate the Nightingale Crimean War centenary. It was promoted as an important foundation for modern nursing and that a global celebration would be taking place for a year from October 1954. Concurrently stamps issued were also being sought for Colombo Plan week and a conference on tuberculosis in 1955. Both were important but of note was that nurses from the region would be attending training in Australia during Colombo Plan week. It was decided to issue a single stamp in September 1955 linking the maintenance of health standards and the nursing profession, using a design to symbolise the Florence Nightingale centenary. ANF agreed to the final design with one modification – the design of the lamp (Gendek, 2006).

The Colombo Plan was launched in 1951 as a cooperative venture for the economic and social advancement of people from South and South-east Asia. The former colleges of nursing in Australia played a significant role in the education of nurses from the region. The first of these nurses were accepted into the NSW College of Nursing in 1954 and several regional nurses were later sponsored by WHO (Pratt and Russell 2002). In 1956, 11 nurses from Asia were sponsored by the Colombo Plan to undertake diploma courses at the College of Nursing Australia (Smith 1999). In May 1955, a first international conference was held in Melbourne with delegates from around the region including the Colombo Plan nurses and Miss Daisy Bridges, Secretary of ICN. This was a pioneering time for post-graduate nursing education in Australia; and, facilitating the exchange of nurses between countries to advance leadership and practice was a key a function of nursing organisations to improve health globally.

One hundred years on from Florence Nightingale's arrival in Turkey, the Director of WHO reported that national nurses' associations in many countries had been enthusiastic in participating in World Health Day and there was an expectation that this would promote "…the fundamental importance of the nurse's work for the health of the world" (Candau 1954 p.4).

Nursing Now continues this legacy as a growing social movement with an active network of groups working to influence global and national policy with greater capacity. It plans to present significant evidence of the contribution of nurses and midwives to health, economic development and gender equity.

Anniversaries are opportunities for celebration and 2020, the 200th anniversary of the birth of Florence Nightingale, promises to be a busy year with conferences in her honour and tours to visit where she was born (Florence), where she grew up (Derbyshire and Hampshire), the location of her house in London (demolished in the 1920s), where she worked during the Crimean War (mainly the Barracks Hospital, Scutari, Turkey) and where she is buried (West Wellow, Hampshire).

Florence Nightingale was not without a few tours of her own which contributed to her understanding of a nursing profession. The tour to Turkey, which was a foundation for that which is being celebrated and advocated in the 'Year of The Nurse & Midwife', was her last one.

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AUTHOR

MARILYN GENDEK FACN

IN MEMORY:

Joan Estelle Godfrey FACN (Hon.)

9/12/1922 – 18/09/2019

Joan Godfrey FACN, who died in Brisbane aged 96 years, was a luminary of Royal College of Nursing, Australia (RCNA) – formerly College of Nursing Australia (CNA). She was an Australian pioneer and pillar of tertiary nurse education and worked tirelessly to advance the profession. In 1984, for her services to nursing, she was awarded the Office of the Order of the British Empire.

After serving in the Australian Army Medical Women's Service during World War II, Joan completed her General Nursing Certificate at Cairns Base Hospital, and her Midwifery and Mothercraft Certificates in Sydney. Following positions at Brisbane Hospital, including that of Sister Tutor, she was awarded a Florence Nightingale Scholarship. This enabled her to complete a Diploma of Nursing Education at CNA in Melbourne in 1955. Years later, at the University of Queensland, she graduated with a Bachelor of Education (1970) and a Master of Educational Administration (1977).

Following some years of clinical nursing (and as a member of the Royal Australian Army Nursing Corps Reserve of Officers), Joan's association with CNA began in 1960. In that year the College expanded its operations to include a Queensland Branch, and Joan was appointed as Staff Tutor, becoming Principal in 1965 and holding this position for the next 12 years.

As an early, committed and articulate advocate for tertiary education, Joan became involved in many activities directed towards that end. Among these were membership of the Committee of Inquiry into Nurse Education in Queensland by the (then) Royal Australian Nursing Federation's (RANF) Queensland Branch, and later Chairman of the Queensland Task Force on Goals in Nursing Education at the Branch; Chairman of CNA's Working Party on Nursing Education in Queensland; member of the Nursing Advisory Committee to the Board of Advanced Education; member of the Board of Nursing Studies, a member of its Curriculum Steering Committee and Chairman of its Nursing Research Committee; and member of the working group appointed by the Minister for Health to report on the Sax Committee Report on Nurse Education and Training.

The work culminated in the incorporation of the Queensland Branch of CNA into the Queensland Institute of Technology (later the Queensland University of Technology (QUT). Joan was appointed Foundation Head of the Department of Nursing Studies at the Institute in 1977, and in this capacity a member of Academic Assembly, Chairman of QIT's Nursing Studies Advisory Committee, and a member of its Health Science Academic Board. Later she was a member of the joint working party of the Board of Advanced Education and the Board of Nursing Studies to report on the Future Development of Nurse Education in Queensland. In 1994, Joan was awarded an Honorary Doctorate from QUT.

Concurrent with her time at CNA's Queensland Branch, Joan was quite astonishingly active in professional affairs, with memberships of state and national nursing organisations. Even prior to 1960, she joined RANF and was a Council member (and later Vice-President and President) of the Queeensland Branch. She was the Honorary Sectretary and then a member of the Queensland State Committee (later Chapter) of CNA; and a Committee member of the Florence Nightingale Council of Australia, Queensland Branch, as well as a member of the Florence Nightingale International Nurses' Association.

Joan became even more involved professionally during the 30 years from 1960. With RANF, she became Queensland Branch President, and Chairman of the Nurse Educators' Section at the Branch, later serving as a Federal Councillor and a member of the Federation's Professional Development Committee. Through RANF, she held a two-year appointment as a member of the Expert Advisory Panel on Nursing Education at the International Council of Nurses. In 1978, she became a Fellow of the (then) New South Wales College of Nursing.

It was as a Fellow of CNA, however, where her contribution was most significant. She was a member of the Education Committee (1966-77), Faculty representative on Council (1974-77) and a member of the Censor's Board (1978-79). First elected as a Council member in 1978, she became a member of the Executive Committee in 1979 (a position she retained until 1992), Vice-President (1981-82) and President and Chair of the Executive Committee (1982-83). She became a legendary Censor-in-Chief for 13 years until 1992. Joan delivered the Twenty Fifth Patricia Chomley Oration, entitled *Nursing's Heritage: Chains to Loosen*, in 1991 at the (by now) Royal College's annual meeting in Brisbane. In recognition of her contribution, she was awarded its Honorary Fellowship in 1993.

Post retirement, for 15 years she collaborated with Bartz Schultz to write the two-volume history of nursing in Australia: *A Tapestry of Service – The Evolution of Nursing in Australia.*

Joan imposed exacting standards of professional behaviour on herself, and expected no less from her colleagues. She was a stickler for correct procedures and accurate records. As Censor-in Chief of CNA, as she marshalled Fellows-elect for their induction at the College's annual meetings over the years, she was known (affectionately) as the 'Sergeant Major'. Joan became a good friend during my service on RCNA's Council and a challenging but rewarding role model – I succeeded her as Censor-in Chief in 1992. In 1998, I felt honoured when she wrote the citation for my Distinguished Life Fellowship.

Joan devoted her life to achieve professional status for nurses, together with improved educational and working conditions, believing that education was the means to change. In a eulogy at her funeral, it was said that she was a "remarkable woman", and that Australian nurses, even those who neither knew her nor of her, owed Joan a debt of gratitiude. Those of us who did know her both laud and mourn her memory.

Rosalie Pratt AM FACN (DLF)

IN MEMORY:

Helen Stewart (Croll) Wilson OAM FACN (Hon.)

20/11/1924 – 10/8/2019

My mother, Helen Stewart (Croll) Wilson, was a remarkable woman; compassionate and kind, with an inquiring mind, a thirst for knowledge and a forceful personality, who left a lasting impression on anyone who was lucky enough to know and spend time with her.

Helen was born in the small country town of Dungog, in the upper Hunter Valley, in November 1924, the eldest of three daughters. Her father, AD Stewart Croll, was the General Manager of the family sawmilling business that had been a mainstay of the community since the early 1900s, and her mother, Sylvia Christian Callow, hailed from Stroud, where her father had been the magistrate and church organist.

Helen and her sisters Pamela and Margot grew up in a very large extended family, with her father one of nine siblings, and her mother one of eight. Four of Helen's aunts (Hope, Jess, Marj Croll and Gert Callow) were nurses, as was her Great Aunt Jessie Toshack – this must surely have had some influence on her later choice of career.

Helen was educated at Dungog Public School (1932-1936), Maitland Girls High (1937-1939) and SCEGGS Darlinghurst (1940-1941) and had been planning to study medicine after leaving school. Unfortunately, her father's premature death in 1941 meant that that was no longer an option for her.

After school, Helen's focus shifted towards a career in nursing, but she had to wait until she was 18 to apply for a place. In the interim, she attended business college, before undertaking a brief stint with the Commonwealth Bank in October 1942.

Helen started her Preliminary Training School (PTS) at Royal Prince Alfred Hospital (RPAH) on 12th July 1943, embarking on the career that was to become a lifelong passion, establishing friendships that would also be lifelong. Throughout my childhood and adolescence, Helen spoke often about her training, remembering in great detail (and mostly fondly) her time in various medical, surgical, orthopaedics and neurosurgery wards, working with medical staff members who became renowned physicians and surgeons in later life.

Graduating in 1947, Helen did her obstetrics training at King George V, before breaking away from RPAH to take up a position at RGH Concord in 1949. Concord Hospital played a significant part in Helen's life. Not only had her aunt, Hope Croll, been the commissioning matron of Concord (then the 113th Australian General Hospital) in 1941, but Helen met her future husband, Eric Wilson, a former prisoner-of-war recuperating in one of the respiratory wards.

Helen and Eric married in 1951, building a house – and a life – in Cronulla, raising four children, Sally, Catriona, Bruce and Ian. Having left nursing, Helen threw herself into her role as family organiser, becoming involved in a range of school and sporting activities.

Helen maintained her links with RPAH through membership of the Graduate Nurses Association, holding a number of executive positions over the years and organising many 'Back to PA Weeks'.

In 1974, Helen returned to RPAH as a nurse, working in the neurosurgical unit and undertaking research, which lead to publications and conference presentations. Helen also used her experience and wisdom to mentor junior staff in a highly stressful yet rewarding work environment, including her future daughter-in-law, Linda Soars MACN.

During that period, Helen finally achieved a life-long ambition, enrolling at the University of New England (UNE). She took to academic life like a duck to water, using her annual leave to attend residential schools in Armidale and revelling in the intellectual stimulation provided by the Bachelor of Arts program.

Helen retired from nursing for a second time in 1984 but remained connected to her beloved Prince Alfred. In 1983, Helen was appointed to the role of Director/Curator of the RPAH Museum of Nursing, a position that made use of her significant organisational skills and gave her love of history and nursing a real focus. Amazingly, she managed to complete her Master of Letters at UNE at the same time.

Helen oversaw the transformation of the Museum from an amateur collection of interesting artefacts stored in a series of rooms in the old Queen Mary Nurses Home into a professional and fascinating heritage collection. The Museum was relocated to its current location in the King George V building and combined with the hospital archives to become what is now known as the Royal Prince Alfred Hospital Heritage Centre. Helen worked collaboratively with fellow history, nursing and medical enthusiasts to realise this major gift to future generations of health professionals.

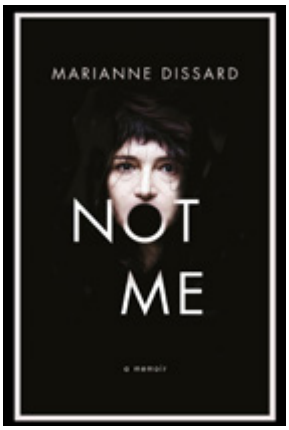
Helen devoted an enormous amount of time and energy to the museum, although she never considered it to be 'work'. And as if that wasn't enough for her, she then enrolled in a Master of Arts degree at the University of Sydney. Having studied French, German and Latin at school, Helen thought it would be fun to start learning Italian so that she could research the life of Allesandra Strozzi, a Renaissance-period Florentine noblewoman, through her letters held in the archives in Florence. After the 'hardship' of spending several months living in Florence, immersing herself in Strozzi's world, Helen graduated with a second Masters degree in 1994, majoring in Curatorial Studies.

Helen did not let go of her nursing profession, and in recognition of her significant contribution, she was made an Honorary Fellow of the College of Nursing in 2003. Her aunts were foundation members of this august organisation, so it was only fitting that she continued the family tradition.

In 2012, Helen received an Order of Australia Medal (OAM) 'For services to medical history through curatorial roles with the Royal Prince Alfred Hospital Heritage Centre'; a richly-deserved honour and appropriate recognition of the important role she had played at RPAH. Even in her final months, nearly 80 years after first entering RPAH as a student nurse, Helen still considered herself to be a nurse, and took great pride in the fact that so many members of her family, including aunts, cousins, nieces, and a son (me), had become nurses.

Ian Wilson

Reviews of a good read



NOT ME: A MEMOIR

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Publisher: Marianne Dissard
Published: October 2019
Reviewer: ACN Publications Editor Neha Malude

It's not often that a story of someone suffering from a serious disorder and mental ill-health can elicit a response of shock, sorrow and laughter all at the same time. Somehow, Marianne Dissard in her debut novel *Not Me* manages this to the hilt.

Born in France, 50-year-old Dissard writes a deeply unsettling and confrontational memoir of her battle with bulimia, which she describes as "that special place in hell where you eat, eat then puke".

For years, the singer and performer toured the world, normal as can be to the outside world while harbouring a serious eating disorder and a chaotic sense of self on the inside. The novel is a compilation of Dissard's diary entries that she started keeping in 2013 to keep a track of her struggles for a whole year.

At the same time, she went back to yoga, a practice she believes helped her.

Thanks also to Dissard's visceral style of writing, the book – sometimes to the great discomfort of the reader – throws light on the subject in excruciating detail. For that reason, *Not Me* is not an easy read. It's not a light read. It's funny at times – many times, actually – but that never takes away from the scathing realities of mental illness and struggles of those like Dissard who suffer in silence still. But above all, *Not Me* is also hopeful and ultimately uplifting. Dissard describes how yoga, a health-affirming practice for her – set her on the road to sanity and self-acceptance and eventually, well-being.

Not Me is not for everyone. Dissard's writing – both her manner of writing and the story she tells – will leave you feeling spent. Its raw honesty, however, is compelling enough and we recommend that you should read it if you want a 'real' picture of what its like to be affected by mental ill-health – and what it takes to overcome it.

PREPARATION AND EDUCATION FOR PARENTHOOD

Author: Dr Zevia Schneider FACN
Publisher: Austin Macauley Publishers
Published: 2019
Reviewer: ACN Communications Officer Rory O'Sullivan

A highly experienced educator and researcher, Dr Zevia Schneider critically examines how prospective parents source and interpret information on parenthood. Drawing on an extensive review of existing literature and interviews with pregnant women, the book argues that comprehensive educational programs should be developed for pregnant couples.

The importance of this is highly stressed in the internet age when a plethora of information can be accessed in a split-second from a smartphone.

The book offers a philosophical and articulate analysis of how parents construct their understanding of infant education. The author argues that this knowledge is learned and influenced by the sources of information consumed such as parenthood classes and the representation of infant education through television and media.

Zevia's analysis is a powerful example of the imperative value of critical thinking in ensuring health care professionals deliver the highest-possible level of care to their patients.

If you would like to submit a book or film review for publication in an upcoming edition of *The Hive*, please email us at publications@acn.edu.au

CONTINUING PROFESSIONAL DEVELOPMENT: INFECTION PREVENTION AND CONTROL

The importance of fundamentals

Narelle Dean, an Infection and Prevention Control consultant, runs the *Breathing Life into Infection Prevention and Control* CPD course for the Australian College of Nursing (ACN). The course aims to educate nurses and midwives about improving compliance, knowledge and skills in the area.

What made you pursue Infection Prevention and Control?

I returned to work in a private hospital that I had previously worked in on weekends while still at school, prior to my nursing training. They asked me if I'd consider Infection Prevention & Control and a role on the development team commissioning a new hospital. The quality manager was the instigator and my reputation for spending way too long at the end of the shift in the treatment and pan room scrubbing and cleaning was a bit of a giveaway.

I agreed to give it my best shot if I were allowed time to study the topic. The rest is history. Many hours of study and courses later I am still very much interested, grateful for such an interesting profession and passionate about this aspect of health care.

What do you enjoy most about your work? What have some highlights of your professional life?

I've been in this role for about 30 years now and it's never boring. I get to collaborate with amazing people in this industry. I have enjoyed working with companies designing/modifying products/instruments and equipment to improve safety and patient care.

Having been in this industry as long as I have, change is a huge part of health and I relish the challenges that brings. Some people have a knack for this field and facilitating that change or motivating them is where you need to be creative and is very satisfying when successful. I have had the privilege of taking on mentoring roles of other Infection Control Practitioner (ICP) and charity work in Third World hospitals. It has been extremely gratifying to see some of them go on to achieve great things.

As far as highlights go, back in the day, we were the first hospital to achieve an OA (Outstanding Achievement) for Infection Prevention & Control. It was a proud moment and acknowledgement for our team.

Can you tell us something about the interactive surgical assistant training module you developed for doctors working in the OR as a surgical assistant?

I had identified that some of doctors who perform the surgical assistant role had not had formal training or competency assessment for scrubbing, gowning, gloving, moving around the sterile field, aseptic technique, catheterisation, sharps passing and management.

I was able to draw on our experienced theatre scrub staff and educators to standardise all protocols around these topics who then became the preceptors for this interactive course. We quarantined operating theatres on a weekend and had interactive mannikins and stepped all participants through the modules. Although successful, it was too labour intensive hence, discontinued. I do believe that this need remains in all hospitals.

What is the importance of appropriate sequencing in the implementation of standard and transmission-based precautions?

'Sequencing' is the term I adopted before the *5 moments for hand hygiene* came in and a basic concept to get health care workers to think of hazardous points in care where an intervention is required, such as hand hygiene, cleaning, disinfection, donning of personal protective equipment; using their knowledge to stop and think 'What is the mode of transmission and what controls are required'; catch phrases to help staff to remember 'after dirty and before clean' or 'after one patient and before the next' or 'clean between'. If health care workers can grasp this, then compliance will follow.

In terms of infection prevention and control, what do you believe is the most important thing for nurses to learn?

Infection prevention and health promotion should not be a separate topic but interwoven into every episode of care. Nurses should use their knowledge, skills and resources as their tools of trade to observe, analyse, risk assess and above all listen to their patients and their visitors throughout the continuum of care. Hone good listening and don't be afraid to ask questions or seek further knowledge or training. Always provide care that you would want for your loved one.

What challenges do nurses/health care workers face in this area?

As we become more and more technical and the health dollar is stretched, we mustn't lose sight of the fundamentals of infection prevention and control. Nurses need to be able to present their cases and lobby for resources to ensure the best outcome for their patients.

As a guest lecturer at ACN, I have had the pleasure for some years of delivering the IP&C course to international students seeking registration to work as registered nurses in Australia. The number has grown exponentially and reflects the new multi-cultural health care work force we now have.

Many of them come from third world countries or at least countries that are under-resourced as compared to Australia. Many come from cultures where speaking up to someone senior is not the norm. This calls for appropriate support, empathy, guidance, respect and training to ensure patient safety is paramount and for all to transition to a harmonious workforce. Ongoing mentoring with this integration is a priority.

How does the course empower nurses and enhance their personal and professional development?

Knowledge and being current are important. Embracing change and getting out of the comfort zone facilitates change to tackle sometimes-stale approaches to issues with a renewed insight and energy. Leaving the workplace and networking and listening to others can also support ICPs or other health care workers working solo to clarify their position or even a paradigm shift. I try to offer as many anecdotal scenarios and practical tools to use to systemise and be 'audit ready' every day.

Find the CPD course here:
acn.edu.au/education/cpd

SHARE YOUR STORY WITH US

Thank you to all of our wonderful Fellows and Members who contributed to the 2019 Summer edition of *The Hive*.

For 2020 Year of the Nurse & Midwife, the four editions of The Hive in 2020 will be dedicated to celebrating Australia's nurses. We are excited to share the following themes with you:

- Autumn: Acknowledging past champions
- Winter: Being a champion
- Spring: Identifying future champions
- Summer: Empowering your inner champion

If you have a story to share about the ever-changing landscape of nursing and health care – past, present or future – and nurse champions who are or were part of it, share it with us at **publications@acn.edu.au**. Please see below for deadlines:

Autumn: 31 January 2020

Winter: 1 May 2020

Spring: 3 July 2020

Summer: 2 October 2020

Thank you to all of our authors!

TOMICA GNJEC MACN

Artificial Intelligence: How can it 'value add'?

JAMES BONNAMY MACN

Our future workforce

MS LAURIE BICKHOFF MACN

Not all publicity is good publicity

DR RUTH DE SOUZA FACN

The potential and pitfalls of AI

DANA DERMODY MACN

Ageing smart

DR JEN BICHEL-FINDLAY FACN

The nursing profession in a digital age

WENDY SMYTH MACN

The power of Pepper

KALPANA RAGHUNATHAN FACN

Preparing nurses for a digital future

ZERINA TOMKINS MACN

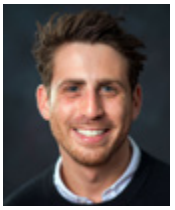
Preparing nurses for a digital future

ANDREW INGERSOLL MACN

AI: The good, the bad and the ethical

BRAD CHESHAM MACN

Future of nurse education



DR ASHLEY KRAS MBBS (HONS), MBI

AI will restore the care into nursing

ANDREA JANSEN VAN RENSBURG MACN

Nurses can be innovators

NAOMI DOBROFF FACN

Nurses who are #doingITwithcare

SHARON DOWNMAN FACN

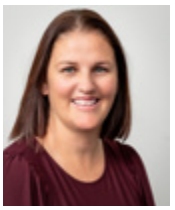
Nurses who are #doingITwithcare

REBECCA JEDWAB MACN

Nurses who are #doingITwithcare

JENNIFER HUMMELSHOJ MACN

Harnessing the power of big data



KATHRYN BAIRD MACN

Boosting nurse leadership

ROWENA HOGAN MACN

Boosting nurse leadership

MEAGEN BRANSGROVE MACN

Boosting nurse leadership

TIM KEUN MACN

Boosting nurse leadership

MADELEINE VAN HUNNIK MACN

Fostering leadership among graduate nurses

MARILYN GENDEK FACN

2020: The Year of the Nurse & Midwife and another Florence Nightingale anniversary

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* Excludes Nursing (Bridging and Re-entry)

Australian College of Nursing

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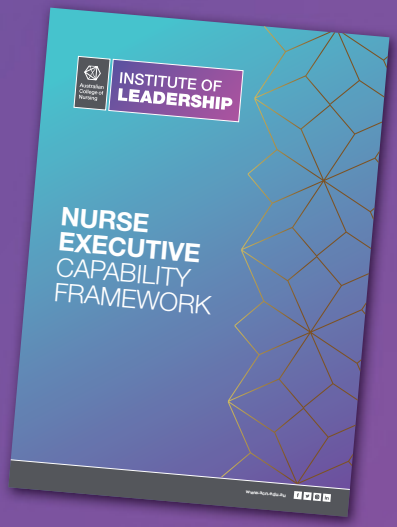
Do you meet the capabilities of the Nurse Executive Capability Framework?



ACN has set a national standard for the capabilities required by those in, or aspiring to, nurse executive roles.

Head to acn.edu.au/leadership to download your copy of the framework and see how you measure up.

Australian College of Nursing

NURSE EXECUTIVE LEADERSHIP PROGRAM

Do you want to fast-track your nurse executive career?

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The inaugural program will commence with a five-day face-to-face workshop on 27 April 2020.

Head to acn.edu.au/executive-program to find out more.