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DISCUSSION

Celebrating Australian nurses who are pioneering the response to climate change: a compilation of case studies

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Background: Nurses, the largest healthcare workforce, are well placed to provide leadership in initiatives that promote planetary health. Yet, few practical examples of nurse leadership in the health sector's response to climate change are evident in the scholarly literature.

Aim: The aim of this discussion paper is to profile Australian nurses who are leading initiatives designed to champion planetary health and promote sustainable practice.

Methods: The paper presents a series of case studies derived from interviews conducted in October and November 2023.

Findings: The nurses' experiences and insights, along with the challenges they have encountered, are presented as evidence of Kouzes and Posner's five practices of exemplary leadership.

Conclusion: The case studies demonstrate that appointment of more nurses with climate and sustainability expertise will accelerate the implementation of responsive strategies that target waste management, emissions reduction and climate resilience across healthcare organisations.

Keywords: climate change; planetary health; sustainability; nurse; leadership

Impact statement

This paper illustrates how empowering nurses to design and implement sustainability and planetary health initiatives can build the capacity of the workforce to respond to the impacts of climate change and mitigate further impacts, ultimately improving the health of individuals and communities.

Plain language summary

As human driven industrial activity and animal agriculture has amplified, greenhouse gas emission levels and global temperatures have significantly increased. This has caused catastrophic environmental disruption and become a critical threat to human health.

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Nurses' holistic approach to health, along with their understanding of how climate change disproportionately affects those who are most vulnerable, gives them a unique perspective and positions them to identify creative solutions and advocate for policies that address climate justice issues. However, despite a growing number of nurses implementing planetary health innovations well ahead of the curb, only a select few are sharing their trailblazing work. This is problematic, especially for future nurses, as 'you cannot be what you cannot see'.

This paper showcases eight nurses who are leading successful initiatives designed to have a positive impact on healthcare sustainability, climate change and planetary health. Nurses from four Australian States who are working in clinical, organisational and academic roles are profiled. The inspirational models of innovation they describe will help healthcare and educational organisations to re-imagine the role of nurses in championing healthcare sustainability initiatives.

Introduction

The impacts of climate change are increasing in both frequency and severity. In 2021, The Intergovernmental Panel of Climate Change (IPCC) referred to climate change as a code red for humanity and called for decisive action to avert the climate catastrophe (IPCC, 2021). Paradoxically, the healthcare sector both contributes to the problem as one of that largest emitting sectors globally, yet cares for those who are most impacted by the health effects of climate change (Bosurgi, 2019).

Nurses are well positioned to lead responsive strategies that target waste management, emissions reduction and climate resilience across healthcare organisations (Leffers & Butterfield, 2018). However, their influence as role models and champions of climate change and planetary health is too often invisible (Lokmic-Tomkins et al., 2023). This limits their ability to empower others and build the capacity of the workforce.

This discussion paper profiles eight nurses' who have demonstrated both formal and informal leadership in responding to the climate emergency. Utilising Kouzes and Posner's five practices of exemplary leadership (Kouzes & Posner, 2014), we reflect on the experiences, insights and challenges described by the nurses. These case studies serve as examples of nurse-led planetary health initiatives that model an impactful response to climate change, in the era of the Anthropocene.

Background

As human driven industrial activity, along with animal agriculture has amplified, increases in greenhouse gas emission levels, predominantly carbon, have been recorded (Abhijeet et al., 2023). This has contributed to global temperatures averageing more than 1.5 degrees Celsius higher than preindustrial levels (Richardson et al., 2023), which, in turn, is causing environmental disruptions of catastrophic proportions. This era, referred to as the 'Anthropocene', is characterised by human actions becoming a primary driver of environmental change, particularly through increasing greenhouse gas emission levels (Richards et al., 2023). The Anthropocene has been identified as one of the greatest threats to both the planet and to human health (World Health Organization, 2022a).

Despite being at the forefront of responding to the impacts of climate change, healthcare organisations are also contributing substantially to carbon emissions (Malik et al., 2018). For instance, in 2020 it was estimated that healthcare makes up between 1% and 5% of the world's global emissions of greenhouse gases (Lenzen et al., 2020). In response, many healthcare organisations are developing sustainability and emissions reduction strategies with many aiming

to be Net Zero over the next 10–20 years. Although resources have been developed to support the transition to environmentally sustainable practice (Global Green and Healthy Hospitals, 2024), many organisations have been slow to implement changes and are inadequately prepared to mitigate and respond to the current and future impacts of climate change (Tong et al., 2021). Notably, the actual and potential influence of nurses as sustainability leaders and role models is often overlooked.

Nurses are well positioned to drive sustainability agendas as they comprise the largest health-care disciplinary group with more than 27 million nurses employed worldwide (WHO, 2022b). They are also involved in many high waste low value episodes of care (Schenk, 2019). Yet, the nursing response to climate change has typically been slow with few nurses considering themselves to be change agents or leaders in the promotion of planetary health (Leffers & Butterfield, 2018). This is partly due to historic conceptualisations of the profession that have centred the nursing response on ‘downstream’ measures (Kalogirou et al., 2020), instead of systemic upstream approaches. However, nurses’ holistic approach to health along with their understanding of how climate change disproportionately affects those who are most vulnerable, gives them a unique perspective and allows them to identify creative sustainability solutions and advocate for policies that address climate justice issues. This view is supported by the International Council of Nurses (2018, p. 1) which states that ‘Nurses can make a powerful contribution to both mitigate climate change and to support people and communities to adapt to its impacts. Leadership from nurses to take immediate action to build climate resilient healthcare systems is necessary’.

While some nurses are undoubtedly pioneering local changes and implementing sustainable health innovations well ahead of the curb, only a select few are sharing their trailblazing work. This lack of visible nursing role models is problematic, especially for future nurses, as ‘you cannot be what you cannot see’ (Lokmic-Tomkins et al., 2023).

Aim

The aim of this paper is to present eight case studies of nurses who are leading successful initiatives designed to have a positive impact on healthcare sustainability, climate change and planetary health. The case studies were developed in October and November 2023 and derived from interviews conducted with nurses from four Australian States. Each nurse reviewed and gave permission for use of their case study in this paper. The nurses’ substantive roles included clinical nurse consultants, clinical nurse specialists, environmental health officers, horticultural therapists and academics. Their experiences and insights, along with the challenges they have encountered are presented as evidence of Kouzes and Posner’s five practices of exemplary leadership. The inspirational models of innovation described will help healthcare and educational organisations to re-imagine the role of nurses in championing healthcare sustainability initiatives.

Claire Lane – Founder and Director of ‘Save Our Supplies’

Claire Lane has been championing sustainable nursing practice since 2012 and is the founder and director of [Save Our Supplies](#), a not-for-profit organisation with a mission to repurpose medical supplies to assist vulnerable communities and simultaneously minimise waste. Claire’s concern for more sustainable healthcare began when she was working as a registered nurse in operating theatres and observed the large volumes of clean, useable medical supplies being continually discarded. Upon questioning this practice, Claire was met with responses such as ‘that’s the way it’s always been done’. Not happy with that response, Claire decided to investigate opportunities for repurposing medical supplies and reducing waste, but found that nobody was actively involved in

this space. Eventually Claire was able to connect with a branch of Rotary that focused on the supply of educational resources to schools in vulnerable communities. From this, Claire concluded that ‘where there is an under resourced school, there must be an under resourced hospital’ and Save Our Supplies was established.

Save Our Supplies collects clean, useable medical supplies from a variety of public and private hospitals across Queensland. The supplies, which otherwise would be considered ‘waste’, are then sorted and redistributed by Claire and her team of volunteers to areas of need such as disaster impacted areas, services for homeless people and low-income countries. To date, Save Our Supplies has delivered approximately five million dollars of medical supplies to Papua New Guinea, Solomon Islands, Cambodia and Fiji. Under Claire’s leadership, Save Our Supplies has had a significant impact, benefitting people and the planet, contributing to the circular economy and reducing landfill. In 2023 alone, Save Our Supplies diverted approximately 20 tonnes of useable medical supplies from landfill, benefitting an estimated 700,000 people.

Claire is an advocate for creating sustainable change and recommends to others who aspire to make a social and environmental impact that perseverance is key ... ‘if you believe in something, keep at it’. Claire acknowledges that there will be challenges along the way and people telling you ‘no’ but ‘just keep going’. Most importantly, Claire strongly believes actions can have a ripple effect and that ‘one person really can make a difference’.

Justine Parsons – Clinical Nurse Consultant and Sustainability Champion

Justine Parsons is a Clinical Nurse Consultant (CNC) in the 44 bed Neonatal Intensive Care Unit (NICU) at John Hunter Hospital, Newcastle, New South Wales. Her journey as a sustainability champion began in 2020, after responding to a call for expressions of interest.

Justine convened a small climate action group comprised of like-minded colleagues, and the decision was made to embark on the sustainability journey by first targeting the 1200 single use plastic baby bottles being disposed of and contributing to landfill each week. Working with the hospital’s sustainability officer, a recycling company was identified that was able to re-purpose the hospital grade plastic into products such as landscaping materials and outdoor furniture. These products also had the potential to be purchased by the hospital, thus contributing to a circular economy. While, on face value, this seemed like a ‘quick win’, it required considerable staff education and ongoing negotiation with the housekeeping, cleaning and waste management teams. However, to date, over 200,000 bottles have been recycled as well as 2500 feeding syringes.

The next project tackled by Justine and her team was the 1400+ nappies being disposed of each week in NICU. After exploring various options that claimed to be sustainable, and then trialling six different types, bamboo nappies were selected for implementation. Once again, this process was not without its challenges. Education on the rationale for segregation of nappies from other commingled waste streams was needed, along with obtaining the buy-in of cleaning staff. Perhaps most challenging was negotiations with the vendor, as the bamboo nappies needed to be cost neutral, and with procurement, as these nappies are not on the New South Wales Health State contract. Adding to the complexity was that the nappies needed to be disposed of in biodegradable plastic bags which were more expensive than other plastic bags and also not on the State contract. Cost to the healthcare budget had to be weighed up against cost to the environment.

Despite the complexities and challenges, Justine remains committed to planetary health and promoting sustainable healthcare. This imperative is particularly relevant to neonatal intensive care as climate events such as heatwaves and bushfires have proven to increase the risk of pre-term births.

Justine's advice to other 'would be' sustainability champions is three-fold: 'ensure you have a team to work with; be prepared to do a lot of reading, research and self-education (for example on the carbon footprint of various products); and be patient, as practice change takes considerable time and determination'.

Lorraine Fields – Nursing academic and Associate Head of Teaching and Learning

Lorraine Fields is the Associate Head of Teaching and Learning at the University of Wollongong (UOW), New South Wales. Sustainability has always been a priority for Lorraine and, connecting strongly with the adage 'you can't be what you can't see', she actively seeks to role model a sustainable lifestyle for her friends, family, colleagues and students. The devastation secondary to the increasing number of recent environmental disasters in her own region resulted in 'many students being affected by fires and the floods ... and some people losing their houses'. This further reinforced Lorraine's commitment to prioritise teaching and learning related to sustainability and planetary health.

In 2021, Lorraine was tasked with the responsibility for the revision and redevelopment of the Bachelor of Nursing programme at UOW along with integrating the United Nation's Sustainable Development Goals (SDGs) into nursing curricula. Importantly, this included the revision of the program's capstone subject which consolidates and showcases knowledge, and tackles real-world problems. Lorraine decided to focus on the SDGs in this subject as a means of embedding sustainability and planetary health in the program. UOW's strategic plan aligns with the SDGs, further supporting her decision to focus on sustainability within nursing.

The 2030 Agenda for Sustainable Development includes 17 Sustainable Development Goals (SDGs), which recognise that ending poverty must align with strategies to improve health and education, spur economic growth and reduce inequality – while at the same time addressing climate change (United Nations, 2015). However, halfway to the deadline for the 2030 Agenda, the Sustainability Development Goals Report 2023: Special Edition (United Nations, 2023) indicates that progress towards more than 50 per cent of SDG targets is limited; and on 30 per cent, progress has stalled or declined. The report further notes that it is the most vulnerable populations who are experiencing the worst effects of these global challenges.

Lorraine's main challenge in the teaching related to the SDGs was to avoid solely 'delivering bad news' related to the health of the planet and appearing fatalistic. She addressed this in the capstone project by adopting the 'think global, act local' approach, which saw students develop sustainability initiatives that could be implemented into their future practice and personal lives. Moving forward, Lorraine's plan is to integrate sustainability across the entire nursing curriculum as she notes that while 'the SDGs may be time limited, sustainability will never expire'.

Lorraine has introduced sustainability to the teaching of more than 1000 students to date. Her commitment to the 'war on waste', has resonated with students with one noting that 'even one person can do something that achieves the SDGs ... one small change could develop into a major change if everyone starts doing it!'

Lorraine's advice for educators is to avoid concept tokenism and to actively embed planetary health and sustainability concepts consistently to develop a nursing ethos of working with people and the planet. She advocates that educators should role model sustainable behaviour, and to 'start slow, give people something to do ... and explain why you're doing what you're doing'.

Steven Wells – Registered Nurse and horticultural therapist

Steven Wells loves to 'dream big and start small' within his unique role as a registered nurse, horticulturalist, and horticultural therapist at the Austin Health Royal Talbot Rehabilitation

Centre, Melbourne, Victoria. Steven's clinical role in the 12-bed Acquired Brain Injury (ABI) Unit and his therapy work within this rehabilitation space allow him to channel his passion for human wellbeing and green spaces, thus contributing to a planetary health agenda.

In 2003, Steven's passion for nursing and horticulture ignited the interest of the Nurse Unit Manager (NUM) who saw the potential for horticultural therapy within the ABI unit. Steven reflected that this moment was akin to 'seed being scattered on fertile soil, rather than rocky ground'. While no additional funding was available, the NUM nevertheless supported a 2-hour horticultural therapy session once a week, timed for when there was 'double staff' on the shift. Four years on from that first step in connecting patients with nature, and after receiving funding from grants, bequests, and donations, the ABI unit began to support a full-day horticultural rehabilitation program. Steven uses horticultural therapy with activities like potting and propagation. This supports people with their rehabilitation goals, return to wellness, functional ability and confidence to transition home. Patients shift from feeling disempowered and defined by their illness, and their sense of identity returns.

With no ongoing operational and financial support for horticultural and wellness projects, Steven was emboldened to consider the 'what if', as he now knew what was possible. In 2010, Austin Health seconded Steven to write a garden master plan as part of the organisation's environmental management strategy. Using a patient-focused lens Steven ensured that the plan addressed patient wellbeing from an environmental and planetary health perspective. This nuanced approach to increasing the 'greening' of the hospital environment and practices, led to a three-day-a-week role to champion the increased use of green spaces for the benefit of patients, staff and visitors. With this approach to 'working from within' and using sustainable principles, the green spaces within Austin Health's facilities are now used for individual, quiet, contemplative time, allied health-led therapy sessions, and space for gatherings of staff, patients and families. Green space became particularly important during the COVID-19 pandemic with staff and patients experiencing feelings of isolation, uncertainty and stress. Five minutes spent meandering in the garden allowed them to refocus 'away from the ward and its business'. Steven observed how staff were able to converse while potting a succulent in their brief breaks. They were able to switch off and chat about stress management and the benefits of connecting with outdoor spaces. Steven still has staff members coming up to him and giving him status updates on their succulents.

Steven's horticultural knowledge and experience has been essential for designing and maintaining sustainable green spaces. Plant selection is also crucial for the successful maintenance and visual impact of the gardens, especially when no irrigation is used, and the gardens rely completely on rainfall. Steven intentionally positioned the ABI unit garden at the entry to the facility, as the lush, green, and flourishing garden has a positive impact on patients' and staff perception of the unit, both as a temporary home and workplace. Steven believes that human and planetary health are intertwined, and his work in connecting people with green spaces is an important piece in addressing climate change and improving human health.

Steven's recommendations for success in greening and wellbeing in healthcare include:

- Have a passion
- Work from within
- Focus on capabilities
- Look for low-hanging fruit
- Seek sustainable solutions
- Work out what/who you can influence.

Clare Wensor – Clinical Nurse Specialist and co-lead of an Intensive Care Unit Sustainability Portfolio

Clare Wensor is a Clinical Nurse Specialist (CNS) in the 29 bed Intensive Care Unit (ICU) at the Austin Hospital, Heidelberg, Victoria, where she co-leads the sustainability portfolio with CNS Penny Ashworth. Part of this portfolio includes her involvement in **EPIC** (Engagement in Plastic free Innovation for Change), a project aimed at reducing the hundreds of thousands of tonnes of single use plastic waste generated by hospitals each year.

The COVID-19 pandemic raised significant concerns about environmental sustainability due to the exponential increase in ICU waste, with audits revealing how much plastic waste, including personal protective equipment, the ICU was sending to landfill. This inspired Clare and her colleagues to consider effective waste reduction strategies. In addition to a recycling program which focused on gloves and coffee cups, the team were keen to identify an initiative that could have significant impact and their attention turned to calf compressor sleeves. Each knee-length calf compressor sleeve weighs 230 grams and the team identified that an estimated 221.4 kilograms, or 962 sleeves, were being sent to landfill every year.

In July 2023, Clare led a trial designed to collect and recycle used but unsoiled calf compressor sleeves. Collection bags were placed in two separate ICU pan rooms providing accessibility and convenience for staff to deposit the calf compressors. Clear signage with unambiguous visuals were important to help staff accurately identify appropriate waste disposal receptacles. Importantly, strategic positioning of general waste bins nearby recycling streams helped to reduce contamination rates, which may otherwise have jeopardised the success of the recycling initiative.

Because calf compressor sleeves have traditionally been disposed of in general waste after a patient is discharged from the ICU, there were some entrenched practices to overcome in order to ensure the success of this trial. However, since the trial began, more than 200 calf compressor sleeves have been collected by the Austin's waste services team and remanufactured by Medsalv©, a Therapeutic Goods Administration approved company, ready for resale. In just a few months, over 50 kilograms of waste was diverted from landfill. The trial was so successful that it continues alongside other sustainability initiatives including the recycling of medication vial caps and toiletries such as toothpaste tubes and toothbrushes. Given the success of the trial in ICU, the sustainability team at the Austin are hoping to roll out the initiative to other units.

Clare's advice with sustainability changes is to 'make it easy' so that busy clinicians and support staff want to be involved, and to 'celebrate small wins', for example, by creatively demonstrating the amount of waste that has been diverted from landfill due to the collaborative efforts of the team.

Roslyn Morgan – Environmental Health Officer

Roslyn (Ros) Morgan is a Registered Nurse who began implementing sustainability initiatives in 2007 in the Intensive Care Unit where she worked. She stated that, 'It's as simple as ... we recycle at home, we should recycle at work.' At that time, environmental awareness in healthcare was in its infancy, but it did not take long for nurses and midwives to understand the connection between working in healthcare and sustainability.

Soon after Ros began running sustainability themed projects in the ICU, other wards made contact, seeking information and support. After joining a Green Champions group, Ros began coordinating cross-campus projects, including fun activities, such as Kimguard fashion.¹ This led to her being offered a Sustainability Officer secondment, and later being employed as the Australian Nursing and Midwifery Federation (ANMF) (Vic Branch) Environmental Health Officer.

In her role, Ros brings ambition for change to resource busy clinicians with tools and education. For example, Ros was determined to tackle the lack of pharmaceutical waste bin provisioning in hospitals which led to medications often being incorrectly disposed of in sharps containers or down the drain. This practice endangers the environment, impacts marine environments and drinking water, and adds to human and planetary health threats. It is also in breach of the Victorian Environmental Protection Authority (EPA) [Operational Guidance](#).

One challenge facing the safe disposal of pharmaceutical waste project was misinformation. Many nurses and midwives incorrectly believed that medications disposed of in sharps bins in Victoria are incinerated or that certain pharmaceutical bins biologically inactivate medications. There were often barriers to obtaining pharmaceutical bins and, when obtained, an absence of associated education.

With the support of the ANMF (Vic Branch) management, and after much ground work, Ros worked with both the Department of Health and VicTAG (Victorian Therapeutics Advisory Group) to develop specific tools and posters to assist with implementation and advocacy for appropriate pharmaceutical waste bins. Education and issue promotion contributed to awareness and nurses and midwives began to increasingly question local practices. ANMF (Vic Branch) delegates also expressed their concerns about incorrect disposal of medications and the difficulty of accessing adequate numbers of appropriate bins. Ros said ‘It was so important to have a nurses voice in this space to ensure our practical user perspective was front and center’.

A public webinar brought stakeholders together, with the aim of securing a commitment to address the issue. The Victorian EPA were specifically requested to use their regulatory authority and in 2023 the EPA wrote to health services reminding them of their obligations, and have since commenced auditing of facilities. Ros said ‘It is rewarding to see this grass roots frustration progress to a State-wide campaign with the bins increasingly in use’.

Ros believes in empowering people so that they can take action. Some of her recommendations include integrating environmental sustainability into undergraduate and postgraduate nursing and midwifery programs, ‘spreading the word’ that sustainable healthcare is part of their scope of practice and quality improvement, and recognising that ‘the momentum in this space is radical, let’s use it.’

ANMF (Vic branch) advocacy, education and awareness raising resources and strategies

- Green Nurses Midwives and Facebook Page: <https://www.facebook.com/groups/ANMFVicGreenNM>
- How to start a green team: <https://education.anmfvic.asn.au/course/view.php?id=96>
- Nursing for the Environment INTENSIVE (face to face education): <https://education.anmfvic.asn.au/>
- Annual Health and Environmental Sustainability conference: <https://otr.anmfvic.asn.au/articles/five-things-we-learned-at-the-2023-health-environmental-sustainability-conference>
- Resources/tools: <https://www.anmfvic.asn.au/healthenvironmentalsustainability> and New recycling posters available – On the Record ([anmfvic.asn.au](https://www.anmfvic.asn.au))

Jen Bardsley – Nurse Lead for Climate and Health

After graduating with a Bachelor of Nursing degree in 2007, Jen became immediately shocked by the lack of sustainable practices in healthcare. On completion of a Masters of Sustainability Studies in 2011, Jen was appointed as the inaugural Nurse Lead for Climate and Health at the 700

+ bed Fiona Stanley Hospital at Fremantle, Western Australia (WA). Being active in climate and health, she also became a mentor for the Al Gore, [Climate Reality Project](#).

The Nurse Lead for Climate and Health role involves working with the South Metropolitan Health Service Sustainability Officer and disseminating strategic initiatives to nursing staff. It also includes communicating with nursing, medical, health support services and allied health staff, providing training and development opportunities, and supporting ward areas and departments across Fremantle and the Fiona Stanley Hospital Group to achieve their sustainability goals. One of the benefits of Jen's role is that she has been able to connect with clinicians across Australia to promote sustainability and prevent duplication of effort.

As the only Nurse Climate Health Lead in WA, Jen engages with external nursing organisations such as the Chief Nursing and Midwifery Organisation and the Royal College of Nursing. With a view to ensuring that future nurses have the knowledge and skills they need to contribute to sustainability initiatives and planetary health, Jen also liaises with WA universities to promote the need to include climate health in curricula.

Jen has been involved in various sustainability initiatives and was instrumental in driving the Fiona Stanley Hospital's 'Save the Bluey Campaign'. This campaign resulted in a 21% reduction in use of blueys, equivalent to 1.9 tonnes or 82,150 fewer blueys going to landfill. Although reducing expenditure was not the primary aim of the campaign, the Hospital has saved approximately \$20,000 on purchasing blueys and \$500 on waste disposal costs.

Operating as both a nurse and a leader, Jen's story represents the importance of supporting traditional Sustainability Officer roles, which are often transdisciplinary, with discipline-specific leaders that address the unique imperatives and needs of each health discipline. Jen's expertise as a nurse, with embedded systems thinking, paired with the passion and knowledge of sustainability, demonstrates the value of having nurses involved at all levels of climate and health strategy.

Anne Watts – Nurse Unit Manager

Recognising a significant gap in National and State environmental sustainability strategies and their practical application in a clinical environment, Anne Watts, Nurse Unit Manager of the Spinal Ward at Fiona Stanley Hospital, has led the way in implementing sustainability initiatives in clinical care. Noting problems such as high consumption of single use products (and subsequent high levels of plastic waste), as well as excess use of resources such as energy, water and pharmaceuticals, Anne identified an opportunity for innovation within the ward. As an organisational nurse leader, Anne recognised that long-lasting and tangible change must be driven by those who best understand the landscape in which the change is being implemented.

Anne began by establishing a sustainability committee who committed to a flexible, action-focused, and incremental approach to influencing a sustainability mindset both across the ward and the organisation. The staff identified numerous areas of action that could occur, however there needed to be a way to both track and share sustainability initiatives, concepts and ideas.

The amount of information and ideas generated within the ward became so extensive, that the team developed a '[Sustainability tree](#)' to provide a constant visual reminder of the progress made, and to facilitate a place for new ideas to be recorded. The colour of each leaf on the tree indicates the project's progress, with red representing an idea that has not been actioned, orange a project which is currently in progress, and green for a finished project. The sustainability tree has been a useful visual reminder to track, communicate and disseminate the ward's sustainability initiatives.

Discussion

Nursing leaders see the problem, own the problem, fix the problem ...

This paper has provided a series of case studies derived from interviews with Australian nurses who are leading sustainability practice and educational initiatives designed to have a positive impact on the planet. We now extend upon this discourse by using Kouzes and Posner's Five Practices of Exemplary Leadership (Kouzes & Posner, 2014) as a framework to further explore how the nurses profiled demonstrate effective leadership.

1. *Model the way*

Effective leaders set standards and create opportunities for others to follow. They act as role models to inspire and empower others. As Lokmic-Tomkins et al. (2023, p. 1) notes, 'You cannot be what you cannot see'. Role modelling was evident in all of the nurses profiled in the case studies. For example, Lorraine Fields described how she actively seeks to role model sustainability with students and colleagues, ensuring that her personal and professional values are aligned with her work. Leading by example, Lorraine supports educators in developing their skills so that they can also role model sustainable behaviours. This commitment builds and sustains the credibility necessary to respond to the challenge of improving sustainability in educational and healthcare settings.

2. *Inspire a shared vision*

Leaders believe that they can make a difference and seek to communicate their vision so that people and organisations can envision a better future. Steven Wells' passion for green spaces and human wellbeing is an example of this. His vision led to a whole of organisation commitment to the development sustainable green spaces to benefit both patients and staff. In his 'top tips' for success in greening and wellbeing, Stephen suggests that having a passion is critical to inspiring others. Similarly, Clare Wensor described how she used the results from a waste audit as a practical strategy to inspire others to create a shared vision and to imagine alternative possibilities for waste reduction, reuse and recycling.

3. *Challenge the process*

Leaders like those featured in this paper, look for ways to challenge the status quo in order to bring about radical change. Claire Lane demonstrated this when she refused to accept comments such as 'that's the way it's always been done'. Claire sought to independently investigate ways to repurpose clean, useable medical supplies, first from her own organisation and then from a number of public and private hospitals across Queensland.

Leaders who challenge the process are willing to experiment and take risks, and they support others in this journey. Leaders also persist and develop strategies to overcome bureaucratic barriers without letting initial failures distract them from their goal. Justine Parsons is an example of how negotiation was used as a mechanism to challenge the status quo and implement change. Although, as Justine acknowledged, being a change agent can take time and requires determination and persistence.

4. *Enable others to act*

Leaders foster collaboration, build effective teams and empower others. The nurses profiled in this paper discussed the importance of actively working with and enabling others,

demonstrating their belief that effective action requires a collective response. For example, as a Nurse Unit Manager, Anne Watts works alongside her team empowering them and ensuring they have a clear sense of their own agency as well as the capacity to collectively make a significant impact. She recognises that as a leader, long-lasting and tangible change must be driven by those who best understand the landscape in which the change is being implemented. Similarly, Ros Morgan believes in ‘empowering nurses so that they can take action’ and recognises that ‘sustainable healthcare is part of their scope of practice’. To enable others to take action, Ros equips nurses with the knowledge and skills they need through the provision of targeted training and educational resources.

5. Encourage the heart

Accomplishing extraordinary things can be challenging, but the nurses profiled in this paper demonstrate that determination along with creativity and enthusiasm, can help to promote sustainable practice and in turn help to address the climate crisis. Effective leaders create hope for the future and recognise the contributions that individuals make in the process. They ensure clarity of vision and goals, encourage others and celebrate small wins. The nursing leaders profiled in this paper created a sense of positivity and a ‘can do’ attitude, bringing staff and their organisations along with them. Initiatives such as the ‘Save the Bluey Campaign’ described by Jen Bardsley and the used of bamboo nappies led by Justine Parsons, would not have been successful without a shared belief in the possibility of positive change.

Conclusion

This discussion paper has provided an overview of the experiences and perspectives of a group of Australian nurses who are engaged in planetary health and sustainable healthcare initiatives and who illustrate the five practices of exemplary leadership described by Kouzes and Posner (2014). Providing insights into the successes and challenges experienced by these nurses in their various roles, will enable healthcare and educational organisations to re-imagine the role of nurses and their actual and potential influence in championing evidence-based sustainability initiatives (Ward et al., 2022). The case studies in this paper also demonstrate that appointment of more nurses with climate and sustainability expertise at all levels of healthcare, including those in clinical, educational, research, leadership and strategy roles, has the potential to accelerate the implementation of responsive strategies that target waste management, emissions reduction and climate resilience across healthcare organisations. Further, educating and empowering current and future nurses to design, implement and evaluate sustainability and planetary health initiatives will build the capacity of the workforce to respond to the impacts of climate change and mitigate further impacts, ultimately improving the health of individuals and communities.

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Disclosure statement

No potential conflict of interest was reported by the author(s).

Note

1. Kinguard is a disposable fabric used to wrap sterile instruments. ‘Kinguard fashion’ is a creative team building activity and a way to increase staff awareness of healthcare sustainability.

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