ATSE

SUBMISSION

Submission to the Department of Health and Aged Care

Submission on the National Health and Climate Strategy Consultation

24 July 2023

The Australian Academy of Technological Sciences and Engineering (ATSE) is a Learned Academy of independent, non-political experts helping Australians understand and use technology to solve complex problems. Bringing together Australia's leading thinkers in applied science, technology and engineering, ATSE provides impartial, practical and evidence-based advice on how to achieve sustainable solutions and advance prosperity.

Australia ranks as the 14th highest emitter globally, with healthcare representing about 7% of all Australian emission outputs (CSIRO 2023; Malik et al. 2018). As part of the race to net zero, Australia must minimise its carbon footprint within the health system and beyond. At the same time, as extreme weather events become more common, there is an urgent need to protect the health and wellbeing of Australians from the consequences of climate change. Failing to act on the impacts of climate change, maintain quality health services to the community, and reduce greenhouse gas emissions from the health system could be detrimental to Australia's future. A well-designed National Health and Climate Strategy provides Australia with the opportunity to become a global leader in environmentally sustainable healthcare.

Responding to climate change from a health system perspective is multifaceted and must consider preventative and adaptive strategies. ATSE makes the following recommendations for inclusion in Australia's first National Health and Climate Strategy:

Recommendation 1: Focus on measuring and reducing Scope 3 emissions, which comprise the largest portion of the healthcare supply chain.
Recommendation 2: Dedicate measurement and mitigation efforts for emissions falling outside of Scopes 1 to 3, including providing remote communities with facilities to support virtual care.
Recommendation 3: Introduce a 'triple bottom line' approach to reporting and evaluating healthcare, covering health benefits, financial savings, and environmental benefits.
Recommendation 4: Promote grey (structural) and green (natural) environmental management strategies to adapt to climate variation affecting Australia's health system.
Recommendation 5: Provide government-led incentives to reduce single-use items across the health system.
Recommendation 6: Encourage 'buy local' procurement to reduce transportation-related emissions and promote the reuse of resources.
**Recommendation 7:** Implement low-emission procurement criteria to begin decarbonising the supply chain.
Recommendation 8: Ensure the National Health and Climate Strategy plans for and promotes primary preventative health and infrastructure precautions to build a climate change-resilient population.
Recommendation 9: Integrate standardised, government-led sustainability training for staff across the health sector to improve the understanding of the environmental impact of the healthcare they provide.

Comprehensively measuring health sector emissions

Scope 1 emissions are defined as direct emissions produced within the boundary of an organisation, Scope 2 emissions are energy-related indirect emissions, and Scope 3 emissions consider other indirect emissions. While considering all Scopes is important, the Strategy should ensure it concentrates measurement and mitigation efforts on the largest emission producer within the health system (refer to Image 1). Scope 3 emissions comprise 71% of the healthcare supply chain (Karliner et al. 2019). The Strategy must target measurement and reduction efforts for Scope 3 emission producers, such as producing, transporting, and disposing of goods and services.
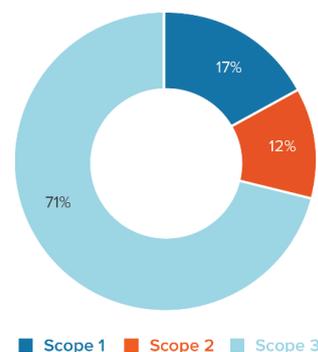
Image 1: Global healthcare footprint split by Greenhouse Gas Protocol. Image courtesy of Karliner et al (2019).

Objective one of the proposed Strategy (measuring greenhouse gas emissions) must be designed to account for a realistic and practical representation of the health system's climate impacts. This could be modelled on the UK's 'Delivering a 'Net Zero' National Health Service' document, which breaks down the health system's carbon emissions into categories, such as supply chain and personal travel (NHS 2020).

Attaining healthcare emission data across all levels of the health system is critical to improving clarity and transparency. Resources such as the HealthcareLCA database provide open access and continuously updated access to environmental impact values for healthcare resources, including pharmaceuticals, treatments and services (HealthcareLCA 2023). Annual reporting mechanisms and monitoring must be

implemented to hold different health system (including private and public) sectors responsible, with the promotion of achievements incentivising emission reduction activities.

In relation to the Strategy's Objective 2 (mitigation), examples that encourage greener patient and visitor transport could include providing bicycle parking facilities, end-of-trip facilities, parking demand management and a points system to incentivise sustainable travel. Co-benefits may be improved physical activity, social wellbeing, mental health, and reduced air pollution and associated disease. While sustainable visitor and patient travel should be encouraged, the Strategy must also account for some unavoidable emissions from urgent travel, where patients and visitors seek convenient travel options during what may be a stressful time.

Virtual care (such as telehealth) can improve accessibility for patients while reducing travel-related emissions. Digital infrastructure in rural and remote areas must be improved so that digital health services can, where appropriate, replace in-person consultations involving long travel times. Taking an approach modelled off 'The Hub' (enabling regional students to study while remaining in their hometown) would mean that the digital infrastructure required for virtual care (including computers and good wi-fi) is more accessible to remote communities (JSL Media 2022).

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Supporting planetary health with a 'triple bottom line' approach

Current levels of resource utilisation in the health system are unsustainable. For the Strategy to align with Australia's obligations under the Paris Agreement, the health system must work with manufacturers and suppliers of healthcare resources and services to achieve net zero emissions. A 'triple bottom line' approach would encourage the consideration of profit, people, and the planet.

An exemplar is provided by the Northern Sydney Local Health District (NSLHD)'s commitment to net zero by 2035 using a planetary health framework (NSLHD 2021a); this is 15 years before the Australian Government's commitment to achieving net zero emissions in Australia. Planetary health describes that humans' long-term health depends on the Earth's wellbeing. Strategies proposed by the NSLHD Planetary Health Framework (NSLHD 2021a) can be adopted across the Australian health system; this includes improving lighting measures (e.g., using LED lighting), using solar panels, encouraging utilisation of electronic record management, and rolling out environmentally efficient chillers and boilers across the health system. In many cases, low-carbon models of care improve health outcomes, patient experiences and provide cost savings. Across the NSLHD alone, the use of solar reduced energy consumption from the grid by 1,814,356 kWh, creating cost savings of $317,240. A combination of grey (structural) and green (natural) environmental management techniques would therefore help improve the health system's resilience. Green strategies could include reducing waste by composting and using renewable energy sources, and grey approaches could include low-emission vehicles and equipment.

The proposed focus areas for emission reduction within the Strategy are comprehensive and could be strengthened with further mitigation actions. The Strategy should include product lifecycle management (PLM) as part of its supply chain, built environment and facilities focus areas. Investing in environmentally-centric PLM means that the lifecycle a product goes through, from design and development, to its retirement or disposal, can be designed to minimise emissions. This would close the loop and reduce unknowns.

A hospital within the NSLHD has already demonstrated the viability of adopting a low-waste, circular economic strategy. This included metal salvaging from laparoscopic procedures, using dry mix recycling so that high-quality plastics can be turned into processed engineered fuel, using biodegradable kidney dishes and trays made of 100 per cent bagasse (releasing fewer carbon emissions upon incineration), and increasing battery recycling initiatives (NSLHD 2021b). Another example of reducing waste in healthcare is

dialysis (especially haemodialysis), which is a water-hungry treatment. A "3R" approach to dialysis-related wastewater management can be implemented, which includes "reduce" (reduce dialysis need and dialysate flow etc.), "reuse" (reuse wastewater as potable water), and "recycle" (dialysis effluents can be used for agriculture and aquaponic use) (Hmida et al. 2023).

Instead of defaulting to consumable items, which require a constant turnover of manufacturing, transportation and incineration at the detriment of the environment, reusable items should be considered the default, with single-use items only for when there is no other suitable option. This transition could be supported by Government incentives (such as tax reductions) to make the sustainable choice more attractive. Changes can be made to reduce Scope 3 emissions, such as washing hospital bed linen instead of using disposable linen which is incinerated, or using reusable laboratory glassware over plastic.

Recommendation 3: Introduce a 'triple bottom line' approach to reporting and evaluating healthcare, covering health benefits, financial savings, and environmental benefits.
Recommendation 4: Promote grey (structural) and green (natural) environmental management strategies to adapt to climate variation affecting Australia's health system.
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Promoting local procurement to curb emissions from imports

One quarter of global healthcare emissions are produced outside the country where it was consumed (Karliner et al. 2019). Significant efforts must be made to reduce reliance upon imports. ATSE's submission on Australia's Science and Research Priorities highlighted the opportunity to leverage Australian expertise for advanced manufacturing – including medical manufacturing, clean energy and electric transportation (ATSE 2023a). The Strategy should encourage the health system to adopt a circular economy approach through 'buy local' procurement and promotion of reusing and redistributing resources (including furniture, ICT equipment, and medical equipment). While many government-run health facilities use a centralised government agency for procurement (e.g., HealthShare), it has the drawback of leaving some local health districts powerless to take action. Change is therefore needed on how healthcare settings procure resources across public and private healthcare to enable all aspects of the health system to make greener choices.

The healthcare sector has considerable purchasing power which can be harnessed to improve emission reductions. Embedding sustainability in procurement practices would incentivise manufacturers to reduce emissions. The UK's NHS, for example, has published a procurement policy outlining its commitment to limiting business in the future to only suppliers possessing a Carbon Reduction Plan (NHS 2023). The Strategy could adapt this across the Australian public and private healthcare landscape. In alignment with this change, steps must be taken to abate the risk of greenwashing: ATSE's submission on greenwashing recommended that a legal definition of environmental sustainability and shared frameworks for greenhouse gas accounting is needed (ATSE 2023b). The Strategy should outline a clear governance structure such as dedicated committees to oversee National Health and Climate Strategy decisions, activities and progress occurring at all levels of the health system. Providing a percentage of planetary health weighting on tenders would also help to reinforce that price should not be the only consideration.

Recommendation 6: Encourage 'buy local' procurement to reduce transportation-related emissions and promote the reuse of resources.
Recommendation 7: Implement low-emission procurement criteria to begin decarbonising the supply chain.

Assessing and preparing for 21st Century health needs

Most risk assessments are based on a deterministic basis, that is, what would happen in predictable circumstances. However, a probabilistic approach is more realistic since it considers a changing climate and how changing weather impacts public health. ATSE has explored this in the context of infrastructure in its publication *Explaining Probabilistic Risk Assessment* (ATSE 2022a). The Australian Government must

approach the Health and Climate Strategy based on the 21ˢᵗ Century climate. For instance, Australia may have more heat waves, and the North may be wetter and more prone to flooding. ATSE calls for greater investment in climate-related research to assess climate risks, vulnerabilities and methods of improving the resilience and sustainability of the health system.

Resilience must be built into health infrastructure to avert climate risks. Refer to ATSE's position statement on climate-resilient infrastructure, which determines that infrastructure needs to be designed to include robustness, redundancy, resourcefulness, and rapid recovery (ATSE 2022b). Integrating resilience based on construction standards, such as the regularly amended National Construction Code (NCC 2022), would contribute towards reducing preventable health impacts.

The Health Climate Strategy must also include a plan to proactively mitigate and prepare for major public health issues linked to climate change, which will continue to place an increasing burden on the health system. For example, Australia could be reasonably expected to again be subjected to extreme bushfire-linked smoke conditions. Between July 2019 and March 2020, bushfire smoke caused a public health emergency, resulting in over 400 deaths, 2,000 respiratory hospitalisations and 1,300 presentations to the Emergency Department for asthma (Asthma Australia, 2020). As the climate changes, Australia is also increasingly prone to tropical diseases, including the Ross River and Barmah Forest viruses. The Strategy should plan to support primary preventative actions (such as immunisation against infectious disease) to reduce the burden of climate-exacerbated injury and disease.

Recommendation 8: Ensure the National Health and Climate Strategy plans for and promotes primary preventative health and infrastructure precautions to build a climate change-resilient population.

Aligning climate and public health policy through education

From the setting of care, to the types of medicine prescribed, at the heart of emission-based decisions are health professionals, whose clinical decisions influence the emissions of the entire system. In alignment with the Strategy's Enabler one (workforce, leadership and training), sustainability training needs to be applied at all levels of the health system (from practitioners to members of hospital boards) to improve the understanding of the environmental impact of the healthcare they provide. At board level, this could include an Australian government-led version of the UK's 'Board-level Net Zero Leadership Training' offered by the Centre for Sustainable Healthcare (CSH n.d.).

Recommendation 9: Integrate standardised, government-led sustainability training for staff across the health sector to improve the understanding of the environmental impact of the healthcare they provide.

ATSE thanks the Department of Health and Aged Care for the opportunity to respond to the National Health and Climate Strategy Consultation. For further information, please contact academypolicyteam@atse.org.au.

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