NATIONAL HEALTH AND CLIMATE STRATEGY

Consultation Paper

Contents

Introduction

Why do we need a National Health and Climate Strategy?

Australians are already experiencing the impacts of climate change on health and wellbeing. In just over a century, Australia's climate has warmed by over 1 degree Celsius.[1] Warmer temperatures have increased the frequency of extreme weather events, such as heatwaves, bushfires, floods and droughts. Catastrophic events, such as the 2019-20 Black Summer Bushfires and the 2022 Eastern Australia Floods, highlight the growing toll climate change is likely to have on people's health and lives.

In addition to extreme weather, climate change is already impacting the lives of Australians by disrupting the environmental and human systems that play an important role in maintaining health.[2] Increasing temperatures are making more parts of the world favourable to the spread of food-, water- and vector-borne diseases, whilst threatening food and water security. Air pollution attributed to climate change exacerbates a variety of respiratory conditions, including asthma and lung cancer.[3] Climate change also affects health outcomes including through its impact on mental health, productivity and workforce conditions, housing, infrastructure and population displacement.[4]

With the most recent report of the Intergovernmental Panel on Climate Change projecting Earth is likely to reach a global warming of 1.5°C from pre-industrial levels in the 2030s, climate hazards and their impacts on health and ecosystems will inevitably increase.[5]

The Australian health system (encompassing both health and aged care)[6] needs to be resilient to both prepare for, and be ready to respond to, stresses and shocks from climate change, while continuing to provide quality services to the community. The health system is also a contributor to greenhouse gas emissions. In 2022, the Australian Government committed to reduce the country's greenhouse gas emissions by 43% below 2005 levels by 2030 and achieve net zero emissions by 2050. This creates an opportunity to target emissions reductions as part of health system reform to contribute to this goal.

The Australian Government has committed to the development of Australia's first National Health and Climate Strategy, in recognition of the urgent need to mitigate health system emissions and support the health system and the community be better prepared for and resilient to the health impacts of climate change. Whilst the Consultation Paper discusses mitigation and adaptation separately, the Strategy acknowledges the interdependent relationship between these two areas and recognises building a climate resilient and sustainable health system encompasses both adaptation and mitigation. [7]

Indigenous knowledge has a critical role in informing how Australia can address the problem of climate change. Central to First Nations cultures is the holistic nature of health and wellbeing. Good health is understood not just as the absence of illness and disease but also as being able to maintain a close connection with Country, culture, spirituality, community and family. For millennia First Nations communities have been managing the land and sea and have a deep and enduring relationship with this country – a connection impacted by climate change. To ensure First Nations culture, ecological and economic values and expertise are integrated into climate change and health planning it is essential they are partners in the development and implementation of the Strategy. In addition, it is important the principles of self-determination, cultural safety, and a strengths-based approach are embedded in co-designing the approach with First Nations peoples.

The Australian Government also recognises climate change has impacts on the wider determinants of health and some populations (such as the elderly and people with disabilities and pre-existing

health conditions) are more vulnerable to these impacts. For First Nations communities, climate change will exacerbate pre-existing high levels of ill-health; compound existing challenges in accessing safe water and appropriate housing, infrastructure and health services; and affect cultural and spiritual connections to Country. Many decisions influencing the social, economic, cultural, environmental, and commercial determinants of health are made outside the health system. Many of these decisions not only negatively impact on health and wellbeing, including equity, but also drive climate change, highlighting the importance of developing a holistic response to the health impacts of climate change.

About the Strategy

The Australian Government aims to establish a National Health and Climate Strategy with the overarching purpose of protecting the health and wellbeing of Australians from the impacts of climate change. The Strategy will encompass:

- Emissions mitigation as well as adaptation to the unavoidable impacts of climate change, recognising the interdependent relationship between these two areas

- All levels of the health system – national, state/territory, and local health systems

- Primary and community care, secondary and tertiary care, and aged care -- including public health and preventive health

- Private as well as public providers – including health and aged care providers, providers of diagnostic and pathology services, and providers of health-related education and training

- Manufacturers – including manufacturers of health technology products and consumables used by the health system

- Actions beyond the health system to improve the resilience of communities to prevent and improve health, in line with the Health in all Policies approach.

The Strategy will outline a national plan and will be further developed over time. The Strategy will align with the Government's broader climate mitigation and adaption policies and take account of work already underway. The Strategy acknowledges state and territory governments, healthcare organisations and providers, have already made significant progress on emissions mitigation and health system adaptation. Further consultation will identify where the Commonwealth can facilitate a common approach.

The Strategy will support the coordination of initiatives relating to climate change and health across Australia by:

- Agreeing **principles, objectives**, and **key action areas** to inform national policymaking

- Increased **collaboration** between jurisdictions and other key stakeholders including the sharing and adoption of best practice approaches and reducing duplication of effort

- Regular **monitoring and reporting** of progress in delivering the Strategy.

Objectives

It is proposed the Strategy includes the following objectives in support of this vision:

1. **Measurement:** Measure and report on health system greenhouse gas emissions, so progress in reducing emissions can be tracked and quantified.[8]

2. **Mitigation:** Accelerate the reduction of greenhouse gas emissions from the health system

3. **Adaptation:** Strengthen the resilience of the health system and communities to anticipate and respond to the health impacts of climate change.

4. **Health in All Policies:** Maximise the synergies between good climate policy and public health policy by working across policy areas to lessen the impact of climate change on the social and cultural determinants of health and wellbeing.

QUESTIONS FOR FEEDBACK:

1. How could these objectives be improved to better support the vision of the Strategy?

Principles

It is proposed our pursuit of the above objectives are informed by the following principles.

1. First Nations leadership: First Nations knowledge and experience must be central to decision-making on climate and health policy at all levels.

2. Tackling health inequities: A health equity approach recognises some populations are more vulnerable to and have less capacity to adapt to the health impacts of climate change, and that responses to climate change need to take account of disparities in health outcomes.

3. Population health and prevention: The response of the health system, and society more generally, to climate change must be underpinned by a public health perspective. This recognises that prevention of disease and maintenance of good health across the lifespan, in combination with optimal secondary and tertiary prevention, assists both mitigation and adaptation.

4. One Health: The Strategy will be underpinned by the principle of One Health – recognising the connection that exists between the health of people, animals and the environment.

5. Evidence-informed policymaking: The response to climate change must be based on the best available data, evidence and research – but we must also be willing to take action on a prudent and precautionary basis in the face of uncertainty and incomplete information. Where possible, actions should be prioritised based on the principles of cost-effectiveness analysis, considering where resources can be allocated to maximise population health gains, while also taking account of health inequities and rights-based approaches.

6. Partnership-based working across all levels of government and beyond: All levels of government need to work closely with each other, as well as with communities, patients, First Nations, not-for-profit organisations, peak bodies, private industry and education and research institutions to craft and implement a holistic and nationally consistent response to climate change.

QUESTIONS FOR FEEDBACK:

2. How could these principles be improved to better inform the objectives of the Strategy?

Enablers

We propose to develop actions around the following enablers to support realisation of the Strategy's objectives.

1. **Workforce, leadership and training**
2. **Research**
3. **Communication and engagement**
4. **Collaboration**
5. **Monitoring and reporting**

These enablers are discussed later in this paper.

Greenhouse gas emissions sources

Sources of greenhouse gas emissions are commonly categorised as follows:[9]

- **Scope 1 emissions** (direct emissions) are produced from sources within the boundary of an organisation, and as a result of that organisation's activities, and are calculated at the point of emission release. These include emissions from hospitals use of anaesthetic gases and diesel generators, patient use of pressurised metered dose inhalers, and fuel use in vehicles owned by health and aged care such as ambulances and other patient transport.

- **Scope 2 emissions** (energy-related indirect emissions) occur outside of the boundary of an organisation from the generation of electricity consumed by the organisation. They are physically produced by the burning of fuels (such as coal and natural gas) at the power station to create the electricity – for instance, the emissions associated with producing electricity purchased for use in hospitals.

- **Scope 3 emissions** (other indirect emissions) are indirect emissions, other than electricity (scope 2) occurring outside of the boundary of an organisation because of actions by the organisation. Scope 3 emissions may occur:

  o Upstream. For example, a hospital's upstream scope 3 emissions include those emissions generated in the manufacture of medical equipment used by the hospital, or by hospital staff commuting to work.

  o Downstream. For example, a hospital's downstream scope 3 emissions include those emissions generated from the incineration of its waste offsite.

In addition, there are some greenhouse gas emissions associated with the health system functioning, such as patient and visitor transport, that fall outside the traditional definition of scopes 1, 2 and 3.

The Australian Government has committed to reduce national emissions by 43% below 2005 levels by 2030, and to achieve net zero national emissions by 2050. These emission reduction targets cover all scope 1, 2 and 3 emissions occurring within Australia – they do not include emissions occurring in other countries' jurisdictions. This approach reflects the Paris Agreement requirement that each member country estimate and report emissions occurring within its jurisdiction, in accordance with agreed rules and guidelines. For instance, estimating and reporting emissions

associated with the manufacture of pharmaceutical products imported into Australia are the responsibility of the country of manufacture.

First Nations health and climate change

The Strategy recognises the role of colonisation in driving both climate change and health inequities experienced by First Nations people. For millennia, First Nations cultures protected and sustainably managed the resources on their traditional lands. This traditional ecological and scientific knowledge was passed down through the generations and allowed First Nations people to maintain their connection to Country. Colonisation disrupted this connection by dispossessing First Nations people of their traditional lands and waterways and by suppressing culture, knowledge, and trading practices (including through the Stolen Generations). Colonisation and dispossession – in addition to institutional racism and exclusion, socio-economic disadvantage and disempowerment – are all drivers of the disparities in health outcomes between First Nations and non-Indigenous-Australians today.[10]

First Nations people have a unique connection with the land, which is intrinsically tied to their culture, spiritualism, and social and emotional wellbeing. Climate change will further exacerbate the health inequities experienced by First Nations people, including through the damage caused to the environment and disconnection from culture and spirituality. Separation from country has been identified as an underlying cause of mental health problems for First Nations peoples.[11]

Nearly one fifth of First Nations people live in rural or remote areas. Rural and remote First Nations communities are particularly vulnerable to the health impacts of climate change, due to socio-economic disadvantage, poor quality housing and infrastructure, and higher rates of chronic disease.[12] Rising sea levels caused by climate change, in addition to other extreme weather events, will have detrimental impacts on traditional homelands through destruction of cultural sites and important ecosystems. Further separation and disconnection from Country is a possible consequence of climate change, which would have profound implications for the health and wellbeing of First Nations communities, as it would harm their ability to connect with, practise culture in and maintain stewardship of Country.[13]

The Strategy seeks to incorporate the strengths of First Nations cultures, recognising they have continued to evolve and thrive despite the ongoing impacts of colonisation, systemic racism and intergenerational trauma. A partnership approach recognises improved outcomes will only be achieved if First Nations peoples are able to make the decisions that impact their health and wellbeing, as also reflected in the development and implementation of the _National Aboriginal and Torres Strait Islander Health Plan for 2021–2031_, the _National Aboriginal and Torres Strait Islander Health Workforce Plan_ and the _National Agreement on Closing the Gap_. First Nations people are intimately connected to Country and their knowledges and cultural practices hold solutions to the impacts of climate change on health and wellbeing with First Nations people well positioned to

inform emergency management planning and preparedness, ensuring greater policy and program effectiveness.

The Strategy will aim to build on the four Priority Reforms of the National Agreement on Closing the Gap: formal partnerships and shared decision making; building the community-controlled sector; transforming government organisations; and shared access to data and information at a regional level. In addition, the Strategy aims to progress Priority 7 of the National Aboriginal Health Plan 2021-2031, 'Healthy environments, sustainability and preparedness'. The Objectives of Priority 7 are:

- Support and grow the First Nations environmental health workforce

- Support community driven housing and infrastructure solutions

- Take action to improve food security

- Support disaster and pandemic planning, preparedness and recovery at the national and community levels.

The Department of Health and Aged Care will work with First Nations people to ensure the Strategy reflects their voices and expertise; respects First Nations data sovereignty; and upholds First Nations self-determination. Embedding First Nations leadership and cultural knowledge within this Strategy will strengthen climate adaptation and emissions mitigation not only for First Nations communities but for
all Australians.

QUESTIONS FOR FEEDBACK:

4. What existing First Nations policies, initiatives, expertise, knowledge and practices should the Strategy align with or draw upon to address climate change and protect First Nations country, culture and wellbeing?

5. What types of governance forums should be utilised to facilitate co-design of the Strategy with First Nations people to ensure First Nations voices, decision-making and leadership are embedded in the Strategy?

Proposed Objective 1:
Measuring health system greenhouse gas emissions

What do we currently know about health system greenhouse gas emissions in Australia?

To measure and track our success in reducing health system greenhouse gas emissions, we need robust, regularly updated, consistent and sufficiently granular estimates of current emissions levels.

The Department of Climate Change, Energy, the Environment and Water (DCCEEW) administers Australia's National Greenhouse Accounts. The Accounts are a suite of reports and datasets on Australia's greenhouse gas emissions and are used to fulfil Australia's annual reporting obligations under the Paris Agreement; track progress towards Australia's Paris Agreement emission reductions targets; and inform and monitor government policy and future national emissions reduction targets. The Accounts are compiled consistent with Paris Agreement rules and guidelines, including Intergovernmental Panel on Climate Change guidelines for emission estimation.

Wherever possible the Accounts draw on facility-level data. Where facility-level data is not available, other data sources are used. The Accounts' _National Inventory by Economic Sector_ provide accurate scope 1 emissions data disaggregated by the Australian and New Zealand Standard Industrial Classification (ANZSIC). In financial year 2021, aggregate scope 1 emissions for health system were up to 1.2 million tonnes carbon dioxide equivalent (Mt CO_2-e), or 0.25% of national emissions. This includes emissions from _Pharmaceutical_ and _Medicinal Product Manufacturing_, _Hospitals_, _Residential Care Services_, and _Waste Collection_, _Treatment_, and _Disposal Services_.

Scope 2 emissions from the health system are likely more significant. While the Accounts do not currently produce a disaggregated scope 2 emission estimate for all components of the health system, such emissions would form part of the aggregate 90.5 Mt CO_2-e of emissions in 2021 reported for Commercial Services (37.5 Mt CO_2-e; aggregation of scope 2 emissions for ANZSIC Divisions F-H, J-S), _Manufacturing_ (33.3 Mt CO_2-e; ANZSIC Division C) and _Electricity_, _Gas_, _Water_ and _Waste Services_ (19.8 Mt CO_2-e; ANZSIC Division C).

When the entire supply chain is considered, including emissions generated during production of products manufactured internationally and imported for domestic consumption, initial estimates from the 2020 financial year Accounts suggest the health system could be responsible for up to 6% of national emissions on a consumption basis.[14]

What national schemes involve organisation/facility-level emissions measurement and reporting?

A number of existing or planned Australian Government schemes involve organisation or facility-level emissions measurement and reporting. New initiatives under the Government's Powering Australia plan are likely to increase existing health system participation in such schemes.

- The Government's _National Greenhouse and Energy Reporting scheme_ focuses on scope 1 and 2 emissions. It requires facilities covered by the scheme to report annually on their greenhouse gas scope 1 and 2 emissions and energy production and consumption. These data are a key input to Australia's emissions reporting under the Paris Agreement and _Australia's National Greenhouse Accounts_, including the _National Inventory by Economic Sector_.

- The Government's _Climate Active_ program includes scope 1, 2 and 3 emissions. It is a voluntary scheme through which Climate Active certification is awarded to organisations that have credibly reached a state of carbon neutrality, based on an agreed emissions boundary for a specific certification type. Scope 1, 2 and 3 emissions are measured in accordance with the program's guidelines, which draw on DCCEEW's _National Greenhouse Accounts Factors_.

- Under the Powering Australia plan, the Government committed to reduce Australian Public Service emissions to net zero by 2030 (*APS Net Zero by 2030*). The policy is under development, with the initial focus on scope 1 and 2 emissions. The 2030 target will initially apply to most non-corporate Commonwealth entities. Corporate Commonwealth entities and Commonwealth companies are encouraged to reduce their emissions, with further consideration being given to these types of entities.

- Under the Powering Australia plan, the Government has committed to ensuring large businesses provide Australians with greater transparency and accountability when it comes to their climate-related plans, financial risks, and opportunities. As part of this commitment, the Government will introduce standardised, internationally-aligned reporting requirements for businesses to make disclosures on governance, strategy, risk management, targets and metrics – including greenhouse gases. Further information is available in the Government's *December 2022 public consultation paper* entitled 'Climate-related financial disclosure'.

What is needed to achieve more granularity in the measurement of greenhouse gas emissions in the health system?

While DCCEEW prepares regular and reliable emissions estimates at the aggregate ANZSIC level, further work with key input data providers is needed to develop additional data inputs to achieve a comparable level of accuracy at a more granular level. To enable measurement and tracking of existing and forthcoming health system emissions reduction initiatives, DCCEEW is working with the Department of Health and Aged Care to assess emissions data currently available from the Accounts and identify opportunities for enhancing the datasets consistent with the Strategy's coverage and approach to be informed by this consultation process.

QUESTIONS FOR FEEDBACK:

6. Beyond the schemes already noted above, is your organisation involved in any existing or planned initiatives to measure and report on health system emissions and/or energy use in Australia?

7. What additional data and information is required to support targeted emissions reduction efforts within health and aged care?

Proposed Objective 2:
Mitigation

Why is it important to mitigate health system greenhouse gas emissions?

Reducing the health system's greenhouse gas emissions aligns with the health profession's responsibility to first do no harm.[15] As well as being harmful, greenhouse gas emissions are associated with other harms including biodiversity loss, pollution and waste, and excessive consumption. Emissions reductions from the health system will have major health, social, environmental and economic benefits. For example, the electrification of ambulances and hospital transport vehicles would reduce air pollution and hence reduce the exacerbation of respiratory diseases. Where appropriate given the individual's circumstances, active travel to healthcare facilities (such as walking and cycling) would also have a positive impact in reducing air pollution, whilst also lowering the risk of cardiovascular disease and diabetes, and leading to improved mental health outcomes. Co-benefits such as improved air quality can strengthen the case for emission reductions because they are often realised more rapidly and locally than the benefits from reducing emissions themselves. They also have wider benefits – for example, active travel will benefit the Australian economy through increased productivity from reduced disease and mortality attributed to physical inactivity.

Health system emissions reduction strategies should always be undertaken in a manner that does not undermine quality of care. For instance, asthma patients should not be shifted onto lower-emissions inhalers if a higher-carbon option is clinically preferable, while active transport and diversifying from liquid-fuel-generated electricity may be difficult in remote communities.

What is needed to reduce health system greenhouse gas emissions?

In 2022, the Australian Government lodged an updated Nationally Determined Contribution with the United Nations Framework Convention on Climate Change, committing to reduce national emissions by 43% below 2005 levels by 2030, and reaffirming its commitment to achieve net zero emissions by 2050. The Climate Change Act (2022) legislated these targets. To help achieve these targets, the Government is implementing the Powering Australia plan, which will boost the uptake of renewable energy through investment in industry and job creation. The Strategy will align health system emission reduction targets with economy-wide government targets and identify mechanisms to achieve these targets, such as incentivising the use of renewable energy in hospitals, clinics and aged care buildings.

Many private providers within the health system (such as private hospitals, specialists, and pathology and diagnostics providers) have also begun committing to targets themselves – for example Ramsay Health Care, the largest operator of private hospitals in Australia, has committed to achieving net zero emissions across its value chain by 2040.[16]

The remainder of this section discusses proposed areas of focus for the Australian health system to reduce emissions in:

Built environment and facilities (including energy and water)	Travel and transport	Supply chain
Medicines and gases	Waste	Prevention and optimising models of care

Each section defines the problem, notes current policies relevant to reducing these emissions, and outlines potential actions the Australian Government could take in response.

QUESTIONS FOR FEEDBACK:

8. What do you think of these proposed focus areas for emissions reduction? Should anything else be included?

2.1 - Built environment and facilities (including energy and water)

The built environment consists of all the human-made aspects of people's surroundings, including hospitals, facilities, roads and other connecting transit systems. Buildings contribute to climate change through their construction, maintenance and daily operation. This includes the materials they use; their location; and electricity, gas and water usage.[17] International data demonstrates the extent to which the built environment contributes to total health system emissions. In England, the National Health Service (NHS) estate and its supporting facilities generate around 15% of total NHS greenhouse gas emissions.[18] Within Australia, Malik et al estimated capital expenditure for health care buildings, including expenditure on the building of new hospitals and retrofitting or upgrading of established hospitals, represents 8% of total health care emissions.[19] However, this figure only considers emissions from physical construction and upgrades. Further data collection will need to measure emissions from the ongoing operation of buildings across health and aged care.

Health-care facilities also consume large quantities of water and use energy to heat, pump and dispose of it.[20] The Strategy will seek to utilise and build on existing government schemes, including the National Australian Built Environment Rating System (NABERS) Energy and Water Ratings, which are available to both public hospitals and residential aged care facilities, to identify emissions reduction opportunities and track progress.[21]

On the built environment and facilities, it has already been proposed to the Department that the Strategy consider actions in the following areas:

2.1.1. Building Design and Construction: Identify and make use of policy levers to ensure climate resilience and low carbon technologies are incorporated into health and aged care facility design and construction, including maximising energy efficiency, including:

> **2.1.1.1.** Influencing the choice of building materials to reduce climate impacts (for example low embodied carbon, use of recycled material and reuse of existing materials).

> **2.1.1.2** Designing facilities to minimise the use of materials and waste over the lifecycle, including designing for increased durability/lifespan of assets and for flexibility (such as modular construction that can be adjusted to accommodate changing needs, or easily deconstructed and reused).

2.1.2. Building Operation: Identify and make use of policy levers to increase to reduce emissions from the operation of the built environment and facilities, including:

> **2.1.2.1.** Transitioning towards renewable energy sources for electricity, and the electrification, and use of energy-efficient, equipment for heating, cooling and hot water.

> **2.1.2.2** Encouraging reduced reliance on diesel-powered generators in hospitals.

QUESTIONS FOR FEEDBACK:

9. Which specific action areas should be considered relating to the **built environment and facilities (including energy and water)**, over and above any existing policies or initiatives in this area?

2.2 - Travel and transport

International data highlights the significant contribution of transport to emissions in health and aged care. For example, it is estimated it comprises as much as 18% of the total emissions footprint of the English NHS.[22] Emissions from vehicles owned or controlled by hospitals and the health system is most readily accounted for in either scope 1 (for fuel use), or in scope 2 (for electricity use when electric vehicles are charged from the healthcare organisation's purchased energy). Emissions associated with vehicles not owned by the health system, such as employee commuting, and supply chain transportation, largely fall into scope 3. Finally, emissions associated with visitor and patient travel to and from health facilities (excluding owned or leased vehicles, such as ambulances) typically fall outside scopes 1, 2 and 3 and can be challenging to account for.[23]

Vehicles that use petrol and diesel — emit harmful air pollution causing health issues, especially for communities living near high-traffic areas. Transitioning to vehicles with advanced emissions control systems and the use of cleaner liquid fuels can reduce harmful noxious emissions, reduce greenhouse gas emissions and improve population health.

On travel and transport, it has already been proposed to the Department that the Strategy consider actions in the following areas:

2.2.1. Identify and make use of policy levers to increase the adoption of electric and zero emissions vehicles within the health system in line with the Australian Government's National Electric Vehicle Strategy, where this is feasible given existing technology and infrastructure

2.2.2. Identify and make use of policy levers to increase the utilisation of low-carbon liquid fuels within the health system, where continued use of liquid fuels is unavoidable.

The Strategy will build on existing efforts by the Government to reduce emissions associated with road transport. This includes Australia's first National Electric Vehicle Strategy, released in 2023. The National Electric Vehicle Strategy recognises greater adoption of electric vehicles will have wide-ranging health benefits by reducing pollutants like nitrogen oxide and particulates. Research has indicated that even at low penetration rates, the uptake of electric vehicles results in better air quality and reduced asthma-related emergency room visits.[24]

The Strategy will also build on existing work on fuel quality improvements and to reduce noxious emissions from vehicles. In July 2022, the Government brought forward the reduction of sulfur levels in petrol, which is estimated to reduce health costs in Australia by more than $800 million between 2024 and 2027. The Government is now considering changes to Australia's fuel quality standards, which would pave the way for stricter noxious emissions standards for light vehicles in Australia. The government is also investigating implementing new fuel standards for renewable diesel and B20 (5.1-20% biodiesel and 80% diesel).

QUESTIONS FOR FEEDBACK:

10. Which specific action areas should be considered relating to **travel and transport**, over and above any existing policies or initiatives in this area?

2.3 - Supply chain

Around 70% of the health system's global emissions footprint is derived from the supply chain, including but not limited to the production, transport and disposal of health-related goods such as medicines.[25] Health and aged care organisations are well placed to leverage their considerable purchasing power to influence manufacturers to improve and report on the environmental performance and emissions footprint of the products they purchase. There is also potential to cut emissions from the storage, preparation, and transport of food through a systematic approach to procuring and producing sustainable and healthy food.

The English NHS has established the following *roadmap* to reduce its supply chain emissions:

- From April 2022, all NHS procurements were required to give a minimum 10% weighting to net zero and social value.

- From April 2023, all NHS contracts over £5 million require suppliers to publish an emissions reduction plan for scope 1, scope 2 and a subset of scope 3 emissions. From April 2024, this requirement will be extended to cover all procurements irrespective of value.

- From April 2027, all NHS suppliers will be required to publish targets and emissions for all emissions in scope of the NHS net zero commitment – including those produced internationally.

While the federated structure of Australian government means the approach of the English NHS cannot be applied directly, it gives a sense of the kinds of actions that might be considered by key health system purchasing bodies to reduce the emissions intensity of their supply chains.

On supply chains, it has already been proposed to the Department that the Strategy consider actions in the following areas:

2.3.1. Identify and make use of policy levers to reduce the emissions footprint of medical devices, technologies, pharmaceuticals, chemicals, waste, non-clinical goods, packaging and delivery of services through available mechanisms such as procurement, contracting and supply chain management.

2.3.2. Identify and make use of policy levers to establish circular/green procurement policies requiring the emissions footprint of suppliers and products be transparently reported and considered as a criterion when choosing a supplier.

QUESTIONS FOR FEEDBACK:

11. Which specific action areas should be considered relating to **supply chain**, over and above any existing policies or initiatives in this area?

2.4 - Medicines and gases

Greenhouse gas emissions generated at the point of use from anaesthetic gases and pressurised metered dose inhalers (pMDIs) have a significant direct impact on health system emissions. Anaesthetic gases delivered through inhalation (known as volatile anaesthetics) include hydrofluorocarbons (sevoflurane and desflurane), chlorofluorocarbons (isoflurane) and nitrous oxide.[26] Pressurised metered dose inhalers (pMDIs) are prescribed to patients to treat respiratory illnesses, including asthma and chronic obstructive pulmonary disease, and use hydrofluorocarbon propellants.[27] Both nitrous oxide and fluorinated gases like hydrofluorocarbons and chlorofluorocarbons have a very high global warming potential compared to CO_2.[28]

Fortunately, there are environmentally sustainable alternative inhalers and anaesthetic gases. Dry powder inhalers and soft mist inhalers have a significantly smaller emissions footprint than pMDIs. The Royal Australian College of General Practitioners recommends pMDIs for young children and people with severely limited inspiratory capacity. However, for most people, a switch to dry powder inhalers can assist in reducing emissions without compromising patient care. This would reduce emissions, given several million inhalers are used by Australians suffering from respiratory illness and pMDIs are widely prescribed.[29] Where clinically appropriate, propofol (an intravenous anaesthetic) can be used as a more environmentally sustainable alternative to nitrous oxide and fluorinated gases. Provided it is disposed of correctly, a propofol based total intravenous anaesthesia is estimated to produce greenhouse gas emissions four orders of magnitude smaller than those produced by desflurane.[30]

On medicines and gases, it has already been proposed to the Department that the Strategy consider actions in the following areas:

2.4.1. Identify and make use of policy levers to reduce use of the most environmentally harmful anaesthetic gases such as desflurane.

2.4.2. Identify and make use of policy levers to improve infrastructure to reduce the occurrence of leaks from piped nitrous oxide.

2.4.3. Work with key stakeholders in primary care to reduce prescribing and dispensing of pressurised metered dose inhalers, where clinically appropriate.

QUESTIONS FOR FEEDBACK:

12. Which specific action areas should be considered relating to **medicines and gases**, over and above any existing policies or initiatives in this area?

2.5 - Waste

Within buildings, healthcare generates multiple waste streams, both non-hazardous (such as food, drink and used hand towels) and hazardous (including clinical waste, defined as waste contaminated with chemicals or pharmaceuticals, such as discarded sharps, IV fluid and unused medicines, and anatomical waste). Their emissions footprint depends on the type of waste and the method of disposal, which can include recycling, compost, landfill and incineration. For example, hazardous waste has a high emissions footprint as it requires extra processing, including high temperature incineration or chemical decontamination.[31]

On waste, it has already been proposed to the Department that the Strategy explore innovative approaches for responsible management and minimisation of waste within the health system in the following areas:

2.5.1. Encourage opportunities to reduce greenhouse gas emissions through greater medical equipment re-use, recycling and reprocessing.

2.5.2. Encourage opportunities to reduce emissions by supporting innovation in the design and use of sustainable single-use items or reusable items.

2.5.3. Reduce emissions from paper waste by promoting electronic processes for patient medical records, data collection and communication.

2.5.4. Reduce the misuse and overuse of high-emissions clinical waste disposal by encouraging the appropriate management of non-medical waste, such as food composting and paper recycling.

QUESTIONS FOR FEEDBACK:

13. Which specific action areas should be considered relating to **waste**, over and above any existing policies or initiatives in this area?

2.6 - Prevention and optimising models of care

Health care costs, and associated emissions, are increasing because of an ageing population and in particular, changes in the way care is being delivered.[32] One clear pathway for reducing emissions is by keeping people healthy and out of the health system through prevention.

As described in Australia's *National Preventive Health Strategy*,[33] prevention includes taking measures to keep people healthy and avoid the onset of illness, disease or injury. Preventive health may address individual factors or collective factors. Prevention may also target different stages of health, including:

- Primordial prevention – prevent risk factors from occurring, typically by addressing the social determinants of health and creating environments that promote health

- Primary prevention – identifying risk factors and managing them to prevent a disease or disorder

- Secondary prevention – identifying a disease or disorder early to prevent progression or deterioration

- Tertiary prevention – managing a disease or disorder to reduce morbidity and mortality, and improve quality of life

- Quaternary prevention – reducing harms from health interventions.

Many preventive health actions, particularly for primordial prevention, lie outside of the health system, necessitating a Health in all Policies approach. This is discussed in more detail later.

In addition to keeping people healthy, another way of reducing unnecessary emissions is by improving and implementing sustainable models of care. There is growing recognition of opportunities to reduce emissions by providing value-based care, including by avoiding overdiagnosis, overtreatment and unnecessary laboratory tests.[34] Improving healthcare management will help to avoid 'adverse events' such as medication errors and hospital-acquired infections, which increase the duration of hospital stays and associated emissions.[35]

In relation to prevention and optimising models of care, it has already been proposed to the Department that the Strategy consider actions in the following areas:

2.6.1. Encourage greater social prescribing[36] and patient education for preventive lifestyle change.

2.6.2. Review existing health services and models of care, including Telehealth and 'hospital in the home' programs, to understand their potential to contribute to emissions reductions.

2.6.3. Further explore opportunities to shift models of care from acute care to primary care and self-care.

2.6.4. Support public health initiatives targeted at clinicians and patients promoting reduction in unnecessary medical tests, treatments and procedures.

QUESTIONS FOR FEEDBACK:

14. Which specific action areas should be considered relating to **prevention and optimising models of care**, over and above any existing policies or initiatives in this area?

QUESTIONS FOR FEEDBACK:

15. What can be done to involve private providers within the health system in the Strategy's emissions reduction efforts?

16. Where should the Strategy prioritise its emissions reduction efforts?

    a) How should the Strategy strike a balance between prioritising emissions reduction areas over which the health system has the most direct control and prioritising the areas where emissions are highest, even if it is harder to reduce emissions in these areas?

    b) Which of the six sources of emissions discussed above (on pages 16 to 21) are the highest priorities for action?

17. What 'quick wins' in relation to emissions reduction should be prioritised for delivery in the twelve months following publication of the Strategy?

Proposed Objective 3:
Adaptation

Why does Australia need to build a climate-resilient health system?

In the last few years, far-reaching and catastrophic climate-related disasters have left many communities experiencing adverse health outcomes.[37] Even with a rapid acceleration of global mitigation efforts, extreme weather events are projected to increase due to the accumulated effects of greenhouse gases already released into the atmosphere, with resulting acute and long-term impacts on the health and wellbeing of Australians. Climate change can impact health directly, such as through injury and death resulting from extreme weather events, and indirectly, such as through increased vector-borne disease spread and mental health issues. According to the World Health Organization (WHO), climate change is expected to cause approximately 250,000 additional deaths per year globally between 2030 and 2050 due to malnutrition, malaria, diarrhoea, and heat stress alone.[38]

Many impacts of climate change on population health and health systems can be prevented through well-designed adaptation measures. It is critical Australia adapts to the changing climate to ensure Australians are protected from climate-related health impacts and can continue to access safe and good quality health and aged care services. There are many elements which will contribute to the ability of the health system to adapt. These include the establishment of an _Australian Centre for Disease Control_ which will strengthen Australia's ability to forecast, monitor and respond to changing patterns of disease and ill-health driven by climate change. Additionally, the Australian Government recognises local service providers – including public health, clinical care, and emergency services – play a crucial role in effective and coordinated emergency preparedness and response and that solutions need to be tailored to local needs and devised in consultation with local communities.

Some communities – such as First Nations peoples, people with disability and older people – are significantly more susceptible to negative health effects from climate-related disasters and extreme weather events. In addition, the impacts of climate change on the functioning of the health system will disproportionately affect these communities. Consideration will need to be given to health and emergency responses for people with disability and older people in disaster resilience and recovery situations, including by ensuring First Nations peoples are enabled to recover their connection to culture and Country following climate-related disasters.

The health impacts of climate change are also disproportionately experienced by women. For example, there is significant evidence domestic violence against women and children spikes during and following climate-related disasters and extreme weather events, and there is also an established negative association between smoke inhalation from bushfires and pregnancy.[39]

Negative health outcomes related to climate change include:

1. Injury and mortality from climate-related disasters and extreme weather events

2. Heat related illness (such as heat-related cardiovascular events for those at higher risk)

3. Respiratory illness (such as increased frequency and severity of asthma attacks due to bushfire smoke)

4. Food insecurity causing malnutrition and reduced access to drinking water, particularly in remote communities

5. Food-borne diseases (such as salmonella)

6. Water-borne disease (such as leptospirosis)

7. Zoonoses (such as H5N1 influenza)

8. Vector-borne diseases (such as malaria, Japanese encephalitis, dengue)

9. Noncommunicable diseases (such as healthcare implications for patients with long-term treatment needs due to disruptions caused by extreme weather events; and higher environmental exposures to air pollution)

10. Mental and psychosocial health (such as climate anxiety, post-traumatic stress disorder related to climate-related disasters and extreme weather events and, for First Nations communities, reduced opportunities to access and connect with country and culture)[40]

11. Health impacts related to reduced housing security (such as losing appropriate and accessible housing for older First Nations peoples and those with disability, in turn increasing their susceptibility to adverse health outcomes from climate-related disasters and extreme weather).

In addition, negative health system outcomes related to climate change as a result of extreme weather events and related disasters, include impacts on:

12. Health and aged care facilities (such as destruction of infrastructure, disruption of supply chains)

13. Health and aged care delivery (for example due to overheating of care facilities)

14. Health and aged care workforce (such as mental health impacts).[41]

15. Care in the home (such as the disruption of vital equipment, including home oxygen supplies, due to loss of electricity).[42]

QUESTIONS FOR FEEDBACK:

18. What health impacts, risks and vulnerabilities should be prioritised for adaptation action through the Strategy? What process or methodology should be adopted to prioritise impacts, risks and vulnerabilities for adaptation action?

What does Australia need to do to adapt the health system?

Australia's national adaptation efforts are underpinned by the foundation that risks are dealt with most effectively by empowering those who are best placed to manage them. This is laid out in the Council of Australian Governments' 2012 Select Council on Climate Change's *Roles and Responsibilities for Climate Change Adaptation in Australia*. This framework guides cross-government cooperation and highlights the specific roles and responsibilities of the Australian Government. These include:

1. Providing national leadership on adaptation reform

2. Providing nationally authoritative climate science and information, including updated climate projections and scenarios of future climate, to inform decision-making across the economy

3. Managing climate risks to Australian Government assets and services, including investments in public infrastructure

4. Maintaining a strong, flexible economy and a well-targeted social safety net to ensure resources are available to respond to climate change and vulnerable groups are not disproportionately affected.

The Australian Government is working to strengthen national adaptation policies and increase the level of effective adaptation action in Australia, including through the National Health and Climate Strategy. Any effective health system adaptation plan must be rooted in a clear understanding of each of the following as well as how they relate to each other:

- **Changes to climate** (both extreme events and gradual changes) – generating impacts on population health and wellbeing and on health and aged care delivery. This requires an acknowledgement that the climate has already changed, meaning historical events and patterns are no longer sufficient to forecast the future.

- **Health and wellbeing impacts** (both direct and indirect) – quantification and prioritisation of impacts, mapping of affected populations and their vulnerabilities and adaptation capacities, and collection and monitoring of relevant health and wellbeing indicators.

- Policy responses to ameliorate these impacts – including but not limited to:

   o Workforce development, training, and leadership.

   o Public education and communication, including community engagement

   o Data and analysis: strengthening capacity and capabilities in:

      - Evidence review and synthesis

      - Research and evaluation

      - Monitoring and surveillance

      - Forecasting and projection

   o **Emergency response:** Robust plans and procedures for preparedness, response and recovery in relation to climate-related disasters and extreme weather events

   o **Built environment:** Creating a climate-resilient built environment through updated urban adaptation plans and building standards, and retrofitting of existing estates

o **New services:** Identification, funding, design and establishment of new health and aged care services needed in response to a changing climate, such as emerging diseases.

In addition, an effective health system adaptation plan must consider the risk of maladaptation, i.e. responses that are more harmful than helpful,[43] and avoid responses that worsen existing inequalities, especially for First Nations communities.

On adaptation of the health system to the challenges posed by climate change, it has already been proposed to the Department that the Strategy consider actions in the following areas:

3.1. Climate risk assessment and adaptation planning:

3.1.1. National: Undertake a National Health Vulnerability and Adaptation Assessment and develop a National Health Adaptation Plan.[44] The Australian Government has allocated $28 million over 2 years from 2023-24 to support delivery of a National Climate Risk Assessment and a National Adaptation Plan. The Department of Climate Change, Energy, the Environment and Water will be responsible for undertaking the National Climate Risk Assessment which will consider a range of climate-linked health impacts at the national level. The National Adaptation Plan will address the significant climate risks identified by the risk assessment, including those in the health sector. Any health system vulnerability assessment and adaptation plan would align with this work.

3.1.2. Local and jurisdictional: Provide guidance and implementation support tools to support climate risk assessments and adaptation planning at the local and jurisdictional levels, in alignment with initiatives such as the National Climate Risk Assessment.

3.2. Identify urgent actions: Undertaking a National Health Vulnerability and Adaptation Assessment and preparation of a National Health Adaptation Plan should not delay the identification of immediate, priority actions to address climate change impacts already severely affecting Australians.

3.3. Emergency prevention, response and recovery: Before, during and after climate-related disasters and extreme weather events, identify and support mechanisms which mitigate direct and indirect impacts on health and reduce public health risk.

3.3.1. Within the health system: Ensure provision of guidance for public health and health and aged care organisations on developing emergency response plans for climate-related disasters and extreme weather events, including consideration of potential direct impacts on service delivery.

3.3.2. Beyond the health system: Ensure provision of guidance on how wider emergency response plans for climate-related disasters and extreme weather events can adequately consider health and aged care, with a particular focus on vulnerable communities and ensuring post-event access to primary care and mental health and wellbeing support.

QUESTIONS FOR FEEDBACK:

19. Should the Australian government develop a National Health Vulnerability and Adaptation Assessment and National Health Adaptation Plan? If yes:

    a) What are the key considerations in developing a methodology?

    b) How should their development draw on work already undertaken, for example at the state and territory level, or internationally?

    c) What are the key areas where a national approach will support local/jurisdictional vulnerability assessment and adaptation planning?

20. Would there be value in the Australian government promoting a nationally consistent approach to vulnerability assessment and adaptation planning for the health system specifically, for instance by issuing guidance and associated implementation support tools for states, territories and local health systems? If yes, what topics should be covered to promote a nationally consistent approach? What examples of existing guidance (either from states/territories or internationally) should be drawn from?

21. What immediate high-priority health system adaptation actions are required in the next 12 to 24 months?

Proposed Objective 4:
Health in All Policies

How does climate change interact with the wider determinants of health?

Climate change impacts population health outcomes and widens existing health inequities through its impacts on the conditions in which we grow, play, work, live and age. These conditions are known as the wider determinants of health. They encompass the environmental, social, cultural, commercial, economic, digital and biomedical factors influencing health outcomes.

Most decisions affecting the wider determinants of health – such as policies on food and agriculture, housing, employment, infrastructure, land use and transport – are made outside the traditional confines of 'health policy'. For example, poor urban planning can worsen the health impacts of floods and extreme heat.[45] Urban areas with little vegetation and a high concentration of dark surfaces like asphalt trap heat, contributing to the 'heat island' effect in which temperatures in urban areas are significantly hotter than surrounding rural areas.

Climate change affects everybody, but not everybody will be affected equally – some groups are at greater risk of experiencing adverse health impacts from climate change than others. The Strategy will adopt a health equity approach to its mitigation and adaptation plans, taking account of existing health disparities.

Groups at greater risk of experiencing adverse health outcomes from climate change include pregnant women, small children and the elderly; people with pre-existing health conditions such as respiratory and cardiovascular diseases; people with poor mental health; and people with disabilities. Elderly people are particularly vulnerable to climate change due to higher rates of medical comorbidities and physical limitations, and many also live alone or have limited social support networks. This means sudden declines in health, for example from heat stress, may go undetected and lead to increased illness and death.[46]

Existing inequities mean some groups – such as people experiencing socio-economic disadvantage and social marginalisation, First Nations people, culturally and linguistically diverse (CALD) communities and people living in rural and remote areas – are at a disproportionately increased risk of adverse health impacts from climate change.[47] Some members of CALD communities are more vulnerable to the effects of extreme heat, due to linguistic barriers, increased likelihood of residing in poor quality housing and other cultural factors.[48] People on low incomes have limited means to improve the quality of their homes or afford increasing heating and cooling costs, and so are also at higher risk of being adversely affected by heat.[49]

Many Australians live and work in environments and circumstances that make it difficult to adapt to the health impacts of climate change and exacerbate its impacts.[50] In a wide range of workplaces such as construction and outdoor maintenance, excess heat is becoming a more common occupational health and safety risk.[51]

The above examples – which are all focused on the impacts of heat as just one of the effects of climate change – demonstrate how decisions beyond the health sector have profound implications for health and climate change and emphasise the need to address them through joined up policy – a Health in All Policies approach.

Why should the Strategy adopt a Health in All Policies framework?

The Strategy is considering adopting a Health in All Policies approach – to maximise the synergies between good climate policy and public health policy, by 'facilitating sectors outside of Health to routinely consider and account for the health impact of their policies, plans and implementation.'[52] The World Health Organization defines Health in All Policies as "*an approach to public policies across sectors that systematically takes into account the health implications of decisions, seeks synergies, and avoids harmful health impacts in order to improve population health and health equity.*"[53]

A Health in all Policies approach would incorporate the broader determinants of health into policymaking across government and can be applied to challenges such as health inequities, the wider determinants of health, and climate change.[54] It aligns with the United Nations *Sustainable Development Goals*, to which Australia is a signatory, which promote consideration of linkages between the wider determinants of health.

Climate and health policies that might be informed by such an approach include:

- Transport policy – vehicle electrification will reduce air pollution and respiratory disease, while urban planning encouraging active travel will improve air quality, reduce greenhouse gas emissions, and lower the risk of cardiovascular disease, diabetes and depression.

- Food, Agriculture and Trade policy – improving access to affordable and healthy food from sustainable sources and reducing food waste can contribute to reductions in emissions and diet-related disease.

- Housing policy – economic, construction and land use planning levers can be used to encourage housing with thermal comfort throughout the seasons, lowering energy costs, improved indoor air quality and increased community connectedness.

The Australian Government acknowledges the need for cross-sectoral engagement on climate and health policy. The *Annual Climate Change Statement 2022*[55] recognises climate change poses challenges to the physical and mental health of people and communities, and, in line with the Sendai Framework for Disaster Risk Reduction (2015-2030), acknowledges the importance of harmonised systemic interventions across all sectors. The National Preventive Health Strategy 2021-2030 discusses the environmental determinants of health, including climate change, and advocates for the involvement of other sectors and industries in preventing ill-health caused by factors outside the health system.[56]

The Health in All Policies framework overlaps with the principle of One Health, which recognises human health is interconnected with the health of animals and our shared environment. The One Health approach mobilises multiple sectors, disciplines, and communities at all levels of society to work together. From a public health perspective, One Health acknowledges we cannot optimise human health at the global population level if food systems are broken, the environment is polluted, or we are not adequately resourced to control zoonotic diseases. The complexity surrounding transmission of diseases at the animal–human–ecosystem interface highlights the need for multidisciplinary approaches – known as One Health approaches.

One Health is a guiding principle underpinning work currently underway to establish an Australian Centre of Disease Control (ACDC). The commitment to establish an ACDC arose in the context of Australia's response to the COVID-19 pandemic. Reviews of the global response to COVID-19 have highlighted the need for One Health collaboration as well as increased surveillance to identify emerging pathogens, including those influenced by climate change. The ACDC will play a leading

role in coordinating Australia's One Health collaboration by developing and strengthening capacities in disease detection, verification, containment and response across the health system. The Strategy aims to complement this work by adopting a Health in all Policies framework.

What is needed to implement a Health in All Policies approach?

The Strategy aims to establish governance, leadership and accountability mechanisms that support the government agencies to recognise and understand the health and health equity impacts of their policies, and find ways to collaborate to design and implement joint public policy for improved health and wellbeing outcomes (for example using *health impact or health lens assessment*). The society-wide National Climate Risk Assessment would facilitate necessary linkages across policy areas by considering systemic risks and grouping them thematically.

QUESTIONS FOR FEEDBACK:

22. What are the key areas in which a Health in All Policies approach might assist in addressing the health and wellbeing impacts of climate change and reducing emissions?

23. What are the most effective ways to facilitate collaboration and partnerships between stakeholders to maximise the synergies between climate policy and public health policy? What are some successful examples of collaboration in this area?

Enablers

Enablers provide the foundation for action in the health system to tackle climate change. The World Health Organization has recently found that progress in delivering national health and climate change plans or strategies has been impeded by a number of challenges including insufficient financing, human resource constraints, and limited research, evidence, technologies and tools.[57] Feedback already received indicates the below enablers will be critical to effective implementation of the Strategy.

Enabler 1: Workforce, leadership and training

This enabler is focused on supporting and engaging the health and aged care workforce to further develop the skills and capacity to: raise public awareness and understanding of the health impacts of climate change; take action to address these impacts, strengthening the resilience of health services and providing care to affected populations; and lead innovation in reducing health system emissions. This enabler is also focused on ensuring the health system and workforce is supported to sustainably retain and attract staff into the future, acknowledging the existing and expected future pressures faced by the health workforce – including stresses related to the COVID-19 pandemic, recent climate-related emergencies such as bushfires and floods, and ongoing workforce shortages, including in areas particularly impacted by climate change.

On workforce, leadership and training, it has already been proposed to the Department that the Strategy consider actions in the following areas:

E1.1. Encourage medical colleges and other education and training institutions to ensure the impacts of climate change on health form part of the training curriculum for all health care professionals.

Enabler 2: Research

Investing in and supporting coordinated climate and health research will improve the evidence base for responses to: better understand current and emerging climate risks and systemic vulnerabilities; strengthen the resilience and sustainability of the health system; improve health and wellbeing by ameliorating the negative health effects of climate change; and reduce health system greenhouse gas emissions. Evidence should inform priority selection and ensure funds are allocated strategically to maximise outcomes.

On research, it has already been proposed to the Department that the Strategy consider actions in the following areas:

E2.1. A scan of current research activities pertaining to climate change and health.

Enabler 3: Communication and engagement

Effectively communicating and engaging with a wide range of stakeholders and the general public will ensure actions to address the health and health system impacts of climate change are widely understood. There is a particular need for engagement with communities that will be hit hardest by climate change, such as First Nations and young generations.

On communication and engagement, it has already been proposed to the Department that the Strategy consider actions in the following areas:

E3.1. Increase public awareness of the health impacts of climate change to empower individuals and communities to take actions to reduce emissions and build climate resilience.

Enabler 4: Collaboration

Establishing governance structures – both cross-jurisdictional and beyond government – to facilitate regular collaboration with all stakeholders (and in particular First Nations) will build ownership and facilitate working partnerships where required to plan and deliver shared commitments to reduce emissions and strengthen climate resilience.

Enabler 5: Monitoring and evaluation

The health system response to climate change should be measured and tracked through regular reporting on progress against key deliverables, to inform future decisions, drive action and hold all stakeholders accountable.

On monitoring and evaluation, it has already been proposed to the Department that the Strategy consider actions in the following areas:

E5.1. Establish agreed indicators to monitor the key deliverables for the Strategy.

E5.2. Provide annual reports on progress against the objectives of the Strategy.

QUESTIONS FOR FEEDBACK:

24. How could these enablers be improved to better inform the objectives of the Strategy? Should any enablers be added or removed?

25. For each of these enablers:

    a) What is currently working well?

    b) What actions should the Strategy consider to support delivery?

Where to from here?

This Consultation Paper forms the basis of a broader consultation process which will include face to face and online workshops with academics, interest groups and health professional networks and; online public consultation via the Department of Health and Aged Care Consultation Hub. Feedback and submissions received as part of this Consultation Paper will be collated and analysed and used to inform the development of the Strategy.

Updates to public consultation will be published on the National Health and Climate Strategy webpage, which can be found on the Department of Health and Aged Care's website: (*https://consultations.health.gov.au/ohp-2013-environmental-health-and-health-protection-policy-branch/national-health-and-climate-strategy-consultation*). If you have any questions or comments about the Strategy or the consultation process, please contact *Health.Climate.Consultation@health.gov.au*.

Consolidated consultation paper questions

1. How could these objectives be improved to better support the vision of the Strategy?

2. How could these principles be improved to better inform the objectives of the Strategy?

3. Which of the various types of greenhouse gas emissions discussed above should be in scope of the Strategy's emission reduction efforts?

4. What existing First Nations policies, initiatives, expertise, knowledge and practices should the Strategy align with or draw upon to address climate change and protect First Nations country, culture and wellbeing?

5. What types of governance forums should be utilised to facilitate co-design of the Strategy with First Nations people to ensure First Nations voices, decision-making and leadership are embedded in the Strategy?

6. Beyond the schemes already noted above, is your organisation involved in any existing or planned initiatives to measure and report on health system emissions and/or energy use in Australia?

7. What additional data and information is required to support targeted emissions reduction efforts within health and aged care?

8. What do you think of these proposed focus areas for emissions reduction? Should anything else be included?

9. Which specific action areas should be considered relating to the **built environment and facilities (including energy and water)**, over and above any existing policies or initiatives in this area?

10. Which specific action areas should be considered relating to **travel and transport**, over and above any existing policies or initiatives in this area?

11. Which specific action areas should be considered relating to **supply chain**, over and above any existing policies or initiatives in this area?

12. Which specific action areas should be considered relating to **medicines and gases**, over and above any existing policies or initiatives in this area?

13. Which specific action areas should be considered relating to **waste**, over and above any existing policies or initiatives in this area?

14. Which specific action areas should be considered relating to **prevention and optimising models of care**, over and above any existing policies or initiatives in this area?

15. What can be done to involve private providers within the health system in the Strategy's emissions reduction efforts?

16. Where should the Strategy prioritise its emissions reduction efforts?

    a) How should the Strategy strike a balance between prioritising emissions reduction areas over which the health system has the most direct control and prioritising the areas where emissions are highest, even if it is harder to reduce emissions in these areas?

    b) Which of the six sources of emissions discussed above (on pages 13 to 18) are the highest priorities for action?

17. What 'quick wins' in relation to emissions reduction should be prioritised for delivery in the twelve months following publication of the Strategy?

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23. What are the most effective ways to facilitate collaboration and partnerships between stakeholders to maximise the synergies between climate policy and public health policy? What are some successful examples of collaboration in this area?

24. How could these enablers be improved to better inform the objectives of the Strategy? Should any enablers be added or removed?

25. For each of these enablers:

    a) What is currently working well?

    b) What actions should the Strategy consider to support delivery?

Endnotes

[1] Bureau of Meteorology (BoM) and Commonwealth Scientific and Industrial Research Organisation (CSIRO), *State of the Climate 2022*, Australian Government, 2022.

[2] J Lawrence, B Mackey, F Chiew, M Costello, K Hennessy, N Lansbury, U Nidumolu, G Pecl, L Rickards, N Tapper, A Woodward and A Wreford, 'Australasia' in H-O Pörtner et al. (eds) Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, Cambridge, 2022.

[3] A Keswani, H Akselrod and S Anenberg, 'Health and Clinical Impacts of Air Pollution and Linkages with Climate Change', NEJM Evidence, 2022, 1(7):EVIDra2200068, doi:10.1056/EVIDra2200068.

[4] Intergovernmental Panel on Climate Change (IPCC), *Synthesis Report of the IPCC Sixth Assessment Report (AR6),* IPCC, 2023*.

[5] Intergovernmental Panel on Climate Change (IPCC), *Synthesis Report of the IPCC Sixth Assessment Report (AR6),* IPCC, 2023*.

[6] The Australian Government and state and territory governments broadly share responsibility for the funding, operation, management, and regulation of the health system. The private sector also plays a role in operating public and private hospitals, pharmacies, and medical practices – as well as providing diagnostic and pathology services, health technology products, and other goods and services used by the health system. According to recent estimates, Australia contains around 697 public hospitals, 657 private hospitals and over 6000 GP practices, and in the aged care sector around 2671 residential aged care facilities. In 2020–21, health spending (exclusive of aged care) totalled $220.9 billion, with around two thirds of this coming from governments and the other one third privately funded. Around 40.6% ($89.7 billion) of health spending was on public and private hospitals, 33.2% ($73.4 billion) on primary health care, 10.9% ($24.0 billion) on referred medical services, and 15.3% ($33.8 billion) on other services, research and capital spending. Australian aged care services operate through a combination of government and third sector funding, along with personal financial contributions. During 2020–21, governments spent over $23.6 billion on aged care, with the largest proportion (60%, $14.3 billion) spent on residential aged care. (Australian Institute of Health and Welfare (AIHW), *Australia's hospitals at a glance*, AIHW, Australian Government, 2022; Australian Medical Association (AMA), *General Practice Facts,* AMA website, 2022, accessed 3 May 2023; AIHW, Health expenditure Australia 2020-21, AIHW website, 2022, accessed 30 April 2023; AIHW, *Aged care data snapshot – 2021*, AIHW website, 2023, accessed 30 April 2023; AIHW, *Stocktake data: 30 June 2022*, AIHW website, 2023, accessed 30 April 2023.)

[7] G Cissé, R McLeman, H Adams, P Aldunce, K Bowen, D Campbell-Lendrum, S Clayton, K Ebi, J Hess, C Huang, Q Liu, G McGregor, J Semenza and M Tirado, 'Health, Wellbeing and the Changing Structure of Communities' in H-O Pörtner et al. (eds) *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change,* Cambridge University Press, Cambridge, 2022.

[8] While our proposed Objective 1 is focused on measuring health system greenhouse gas emissions, we recognise there are many other measurement challenges related to climate change and health – such as measuring environmental exposures and vulnerability indicators related to the resilience of health services to climate change. These are listed under Objective 3 on adaptation.

[9] Department of Climate Change, Energy, the Environment and Water (DCCEEW), *Australian National Greenhouse Accounts Factors*, DCCEEW, Australian Government, 2022.

[10] Lowitja Institute, *Climate Change and Aboriginal and Torres Strait Islander Health*, Lowitja Institute, 2021.

[11] BJ Bishop, DA Vicary, JR Mitchell and G Pearson, 'Aboriginal concepts of place and country and their meaning in mental health', *The Australian Community Psychologist,* 2014, 24(2):26-42.

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[13] T Janke, Z Cumpston, R Hill, E Woodward, P Harkness, S von Gavel, J Morrison, *Australia state of the environment 2021: overview,* report to the Australian Government Minister for the Environment, Australian Government Department of Agriculture, Water and the Environment, Canberra, 2021.

[14] Department of Climate Change, Energy, the Environment and Water, internal analysis of Australia's National Greenhouse Accounts. A 'consumption-based' inventory is the estimate of emissions generated both in Australia and overseas to support the consumption of goods and services by Australians.

[15] Doctors for the Environment Australia (DEA), *Net zero carbon emissions: responsibilities, pathways and opportunities for Australia's healthcare sector*, DEA, 2020.

[16] Ramsay Health Care, *Ramsay Health Care commits to Net Zero by 2040* [media release], Ramsay Health Care, 29 June 2022, accessed 20 April 2023.

[17] M Younger, H Morrow-Almeida, S Vindigni and A Dannenberg, 'The built environment, climate change, and health: opportunities for co-benefits,' *American Journal of Preventive Medicine*, 2008, 35(5):517-526, doi:10.1016/j.amepre.2008.08.017.

[18] NHS England, *Delivering a 'Net Zero' National Health Service*, NHS England, 2022.

[19] A Malik, M Lenzen, S McAlister and F McGain, 'The carbon footprint of Australian health care', *The Lancet*, 2018, 2(1):e27-e35, doi:10.1016/S2542-5196(17)30180-8.

[20] World Health Organization (WHO), *Health Care Without Harm. Healthy hospitals, healthy planet, healthy people—addressing climate change in health care settings: discussion draft*, WHO, 2009.

[21] National Australian Built Environment Rating System (*NABERS*) rates the efficiency and environmental impact of facilities (including hospitals and aged care facilities) and benchmarks this performance against similar facilities. In addition, NABERS is currently undertaking public consultation to develop an Embodied Emissions rating, which will measure, verify, and compare embodied (upfront) emissions in new buildings and major refurbishments. Likewise the *Commercial Buildings Energy Consumption Baseline Study* provides an estimate of buildings stock, emissions and energy consumption including aged care facilities and hospital facilities.

[22] NHS England, *Delivering a 'Net Zero' National Health Service*, NHS England, 2022.

[23] B Sampath, M Jensen, J Lenoci-Edwards, K Little, H Singh and J Sherman, *Reducing healthcare carbon emissions: a primer on measures and actions for healthcare organizations to mitigate climate change*, Agency for Healthcare Research and Quality, 2022.

[24] E Garcia, J Johnston, R McConnell, L Palinkas and S Eckel, 'California's early transition to electric vehicles: Observed health and air quality co-benefits', *Science of the total environment*, 2023, 867:161761, doi:10.1016/j.scitotenv.2023.161761.

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