FRAMEWORK FOR A

NATIONAL STRATEGY ON CLIMATE, HEALTH AND WELL-BEING FOR AUSTRALIA

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OUR CLIMATE, OUR HEALTH.

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FOREWORD

by **Professor Peter Doherty**, Nobel Laureate for Medicine

Without urgent action on climate change, the conditions that underpin the health and well-being of the human population will be greatly diminished in coming decades, and may only be available to a small number of people living in a few parts of the planet by the end of this century.

Photo: © Doherty Institute

A sobering future, yet one that is avoidable through a shared global effort.

Australia is a wealthy country, yet as a dry continent, regularly exposed to record-breaking weather extremes and with a largely coastal population, it is extraordinarily vulnerable to climate change.

The foundations of a resilient society involve good health — and ensuring the conditions to foster good health across the community must be a priority for all governments.

Recognising the links between global warming and human health (or the health impacts of emissions intensive industries) and developing policies to respond is critical.

Too often, the opportunities and benefits for health and well-being from climate action are overlooked or ignored. Australia has gone too long without a strategic national policy framework to address this issue.

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

Capitalising on these benefits requires a coordinated approach, and the cooperation of governments at all levels.

This Framework for a National Strategy on Climate, Health and Well-being for Australia provides a comprehensive roadmap for policymakers in tackling this issue in Australia.

The proponents of this important initiative are to be congratulated, and I urge governments and policymakers to pay heed. Much of the work is done for them here — but its application requires political leadership.

The adoption and implementation of this Framework provides the opportunity for the Australian Government to become world leaders in health and climate change policy. Together with effective mitigation policies, Australia can make a contribution to the global effort of tackling global warming, while reaping immediate and local benefits for its citizens in the near term.

Professor Peter Doherty,
Nobel Laureate for Medicine

EXECUTIVE SUMMARY

A substantial and growing body of scientific evidence is highlighting that **the public health risks posed by climate change represent a health emergency.**

In ratifying the Paris Agreement in November of 2016, the Australian Government formally agreed to **consider the 'right to health' of citizens** in the context of the nation's climate change response, and to **recognise the co-benefits for health in developing mitigation strategies**. However, human health has not yet been afforded sufficient priority in Australia's mitigation and adaptation policies and strategies.

A nation-wide consultation with healthcare stakeholders in 2016 revealed **serious concerns at the lack of national leadership** to address the serious and increasing public health risks posed by climate change. There is a clear expectation that the **Commonwealth Government provide leadership** for a national response to address climate change and health, and a firm conviction that a **national public policy framework is required** to coordinate action across government portfolios and at all levels of government.

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

This Framework for a National Strategy on Climate, Health and Well-being for Australia provides a roadmap to **support the Commonwealth Government in taking a leadership role in protecting the health and well-being of Australian communities** from climate change, and in **fulfilling its international obligations under the Paris Agreement**.

It also provides a **policy framework against which Australia can demonstrate its progress against the Lancet Countdown Indicators**. Starting in 2017, this will be an annual global evaluation of nations' responses to climate change, and the health benefits that emerge from the low carbon transition.

The Framework does not only imply actions and strategies for the health portfolio and sector; in recognition of the systemic and complex nature of climate change, and the fact that **the determinants of health and well-being lie largely outside the health sector**, it prescribes policy directions **for a range of portfolios**, including energy, climate, environment, transport, and infrastructure. It includes actions for federal, state, and local government, for research institutions, and for the health sector itself.

KEY FIGURES

- Heatwaves in Victoria in 2009 and 2014 contributed to **374 and 167 excess deaths**, respectively
- The increased incidence and severity of heatwaves from global warming could contribute to **several thousand additional deaths** nationwide by 2050
- Climate change is contributing to health risks posed by allergenic pollens and fungi, increasing the likelihood of events such as the 2016 thunderstorm asthma event in Victoria, which caused a **3,000% increase in asthma-related admissions** to intensive care and is thought to have contributed to the death of nine people
- Air pollution from coal-fired electricity generation is responsible for **hundreds of thousands of deaths** globally each year, and the health impacts of coal-fired power generation is estimated to cost Australia **AUD$2.6 billion** annually[1]
- The health and social costs of climate-mediated events represent a significant economic burden, with the health and social costs of the Black Saturday bushfires and 2011 Queensland floods totalling **AUD$3.9 and $7.4 billion** respectively
- Reduced productivity due to extreme heat already costs the Australian economy over **AUD$8 billion annually** and the economic losses and health risks will increase significantly due to climate change
- Many climate change mitigation and adaptation policies offer significant co-benefits for health. For example, the health benefits from climate mitigation policies which reduce air pollution can offset the cost of implementation by **up to 10 times**

I See Burt et al. 2013, *Scientific Evidence for Health Effects from Coal Use in Energy Generation*[1] and Biegler 2009, *The hidden costs of electricity: externalities of power generation in Australia, A report by the Australian Academy of Technological Sciences and Engineering (ATSE) 2009*[2]

The seven Areas of Policy Action outlined in this Framework, and the Policy Recommendations described within, outline the key actions that must be taken at the federal, state/territory and local level to achieve the vision of **"a fair and environmentally sustainable national policy framework that recognises, manages and addresses the health risks of climate change and promotes health through climate change action."**

KEY POLICY RECOMMENDATIONS

- Establish national emissions reduction targets consistent with the recommendations of the Climate Change Authority and based on Australia's fair share of the global task to reduce emissions
- Evaluate the economic savings from additional health benefits associated with a range of emissions reductions strategies through a national study
- Reduce deaths from air pollution by phasing out coal and strengthening national emissions standards for motor vehicles
- Prevent poor health associated with inadequate building standards by including climate resilience measures in the National Construction Code
- Avoid adverse health impacts from industry and infrastructure projects by incorporating health impact assessments in the evaluation of project applications
- Promote healthy, low emissions diets and lifestyles through provision of funding for public education programs
- Ensure health professionals are able to recognise, prepare for and respond to the health impacts of climate change through establishing a national education and training framework
- Monitor health impacts through the establishment of a national environmental health surveillance system which includes climate-related indicators
- Provide national leadership through the establishment of a Ministerial Health and Climate Change Forum consisting of Commonwealth and State/Territory Ministers with responsibility for Health, Environment and Energy. This Forum would oversee the implementation, monitoring and reporting of the National Strategy for Climate, Health and Well-being and report to the Council of Australian Governments on the progress of the Strategy's objectives, initiatives and policies

OVERVIEW

The Framework for a National Strategy on Climate, Health and Well-being for Australia outlines policy directions that could be taken at the federal, state/territory and local level to support Australia in meeting its national interest in protecting population health from the impacts of climate change, and meeting its international obligations in relation to the Paris Agreement.

This Framework has been developed following extensive consultation with health and policy stakeholders and draws on the findings from previous work, including the response to the *Discussion Paper: Towards a National Strategy on Climate, Health and Well-being for Australia*, published by the Climate and Health Alliance in 2016.

This paper identified the health impacts of climate change in Australia, and called on the Federal Government to take a leadership role in ensuring Australia is adequately prepared to both manage these risks and meet its Paris Agreement commitments through the development and implementation of a National Strategy on Climate Health and Well-being.[II]

While there is an expectation that the Federal Government provide leadership across climate change and health, consultation with stakeholders highlighted the need for a whole of government approach, with shared responsibility for implementation across multiple levels, sectors and jurisdictions.

Political will and cross-parliamentary support is essential in developing and maintaining the necessary governance, funding, policy, infrastructure and resources required to achieve the shared Vision for 'a fair and environmentally sustainable national policy framework that recognises, manages and addresses the health risks of climate change and promotes health through climate change action.'

II This report is available at http://www.caha.org.au/national-strategy-climate-health-wellbeing

THE OVERALL PURPOSE OF THE FRAMEWORK FOR A NATIONAL STRATEGY ON CLIMATE, HEALTH AND WELL-BEING IS TO:

- Present a high-level framework to guide government policy and decision-making processes in addressing climate change and associated health impacts, both positive and negative
- Enable the Federal Government to take a leadership role in protecting the health and well-being of Australian communities from the impacts of climate change
- Increase awareness and understanding of the health impacts of climate change in Australia among politicians, policymakers and the general public and ensure these issues are included in the development and implementation of policies addressing climate change and emissions reduction
- Assist the Federal Government in fulfilling its international obligations under the United Nations Framework Convention on Climate Change (UNFCCC), the Paris Agreement, the International Covenant on Economic Social and Cultural Rights (ICESCR) and its commitments to the Sustainable Development Goals (SDGs)
- Provide a policy framework against which Australia can demonstrate its progress against the Lancet Countdown Indicators (an annual global evaluation of nations' responses to climate change, and the health benefits that emerge from the low carbon transition)
- Enhance collaboration both vertically (involving national, state and local governments) and horizontally (across multiple portfolios and sectors and within the health sector itself), to support healthy, sustainable, low carbon, climate-resilient communities and health care services
- Ensure the strong economic imperative for action on climate change is reflected in the adoption of "win-win" climate change mitigation and adaptation strategies, which both reduce greenhouse gas emissions and the social and economic burden of ill-health in the population

THE FRAMEWORK COVERS SEVEN AREAS OF POLICY ACTION

1. HEALTH-PROMOTING AND EMISSIONS-REDUCING POLICIES
Policies that reduce the risks to people's health and well-being while simultaneously reducing greenhouse gas emissions.

2. EMERGENCY AND DISASTER-PREPAREDNESS
Supporting the identification of vulnerable populations and gaps in infrastructure in order to adequately prepare for the impacts of climate change.

3. SUPPORTING HEALTHY AND RESILIENT COMMUNITIES
Enhancing the capacities of communities to anticipate their climate risks and reduce impacts on health and well-being in their communities.

4. EDUCATION AND CAPACITY BUILDING
Educating and raising awareness of the health impacts of climate change within the health workforce, and the wider Australian community.

5. LEADERSHIP AND GOVERNANCE
Establishing effective governance arrangements which facilitate horizontal and vertical collaboration in implementing climate change and health initiatives at the national level, and advocating and demonstrating leadership internationally on action to address the health impacts of climate change.

6. A SUSTAINABLE AND CLIMATE-RESILIENT HEALTH CARE SECTOR
A low/zero carbon, environmentally sustainable, climate-resilient health sector which can effectively respond to the health impacts of climate change.

7. RESEARCH AND DATA
Supporting Australia's health and climate research capacity to evaluate specific health threats, priority needs and to monitor trends and opportunities for maximising multi-sector benefits.

This Framework for a National Strategy on Climate, Health and Well-being is presented in three sections:

1. **Why we need a National Strategy on Climate, Health and Well-being for Australia**, which highlights the health, climate and economic imperatives for action;
2. **The Policy Framework for a National Strategy on Climate, Health and Well-being for Australia**, which details the Vision, Principles, and Areas of Policy Action needed to achieve the desired outcomes of the Strategy;
3. **Implementing the Strategy**, which details the governance arrangements and mechanisms for evaluation, monitoring and reporting on the Strategy's progress.

WHY WE NEED A NATIONAL STRATEGY ON CLIMATE, HEALTH AND WELL-BEING FOR AUSTRALIA

Photo: © World Health Organization

INTRODUCTION

Climate change poses significant immediate, medium-term and long-term risks to the health of Australians and communities around the world.[3,4,5,6] Despite the substantial body of scientific evidence highlighting these risks, and growing evidence that climate change represents a 'health emergency',[7] human health has not yet been afforded sufficient priority in Australia's national mitigation and adaptation policy and strategy actions.

A coordinated national effort is required. This includes leadership from governments to develop policy to tackle the root causes of climate change, support the health sector and the health professions to build resilience to respond to this serious and increasing threat, and ensure the community is well informed and capable of taking health protective actions.

An effective national response requires the involvement of, and collaboration between, multiple portfolio areas including health, energy, environment, transport, planning and infrastructure.

This Framework will provide a roadmap to support all levels of government to work collaboratively to both protect the health and well-being of present and future generations and ensure that the health co-benefits of climate change action are realised.

POLICY OPPORTUNITIES

In ratifying the Paris Agreement in November of 2016, the Australian Government formally agreed to consider the 'right to health'[III] of citizens in the context of the nation's climate change response, and to recognise the health co-benefits in developing mitigation strategies.[8] In addition, the National Climate Resilience and Adaptation Strategy, published by the Commonwealth Government in 2015, highlights that all levels of government share responsibility in responding to the challenge that climate change presents to health and well-being, while acknowledging that there are no national programs specifically targeting this area.[9] While there are examples of adaptation and mitigation actions being undertaken at the state, territory and local levels that focus on climate change and health impacts, this is occurring in the absence of an overarching policy directive at the federal level.[10,11]

The efforts of nations around the world, along with those of state, territory and local governments, provide

III In this context, the 'right to health' (as outlined in the International Covenant on Economic, Social and Cultural Rights, to which Australia is a party), refers to "the right to the enjoyment of the highest attainable standard of physical and mental health." See: https://www.ag.gov.au/RightsAndProtections/HumanRights/Human-rights-scrutiny/PublicSectorGuidanceSheets/Pages/Righttohealth.aspx It also includes (as outlined in the World Health Organization Constitution which Australia has ratified) "a system of health protection that gives everyone an equal opportunity to enjoy the highest attainable level of health." See: http://www.who.int/mediacentre/factsheets/fs323/en/

key insights into how policies can be developed to address the health risks posed by climate change and better protect the health and well-being of communities. For example, a number of Australian states and territories have developed extreme heat strategies, in recognition of climate projections which show that extreme heat events are expected to occur more frequently and with greater intensity in the future, posing serious risks to the health and well-being of communities. In addition, the Victorian Department of Health and Human Services is leading a Community Sector Climate Resilience Program to improve the climate resilience of community service organisations, so that they can continue to deliver vital services to vulnerable communities in the instance of a natural disaster and as a result of climate change.

Climate change is a global issue and does not respect national borders. In addition, countries not well placed to develop responses are often those most likely to be adversely affected — loss of healthy life years in low income African countries, for example, is predicted to be 500 times that in Europe.[12]

While not yet widely understood in Australia, international research and policy evidence makes it clear that greenhouse gas mitigation across a range of sectors can result in considerable improvements in public health.[13]

Australia has responsibilities for the well-being of its own population but also as a global citizen. There is a growing momentum in policy development around the health impacts of climate change across the word.

For example:

- **In the United States the Centers for Disease Control and Prevention (CDC)** outline 11 different policy actions for climate and health.[14] The CDC also actively promotes climate change and health research, along with supporting efforts to enhance preparedness and management of the health risks associated with climate change. In 2015, the CDC published the Building Resilience Against Climate Effects (BRACE) framework, which is specifically designed to guide health officials in developing strategies and programs to assist communities in preparing for the health impacts of climate change.[14] In part, this involves combining atmospheric data and projections with epidemiologic analysis to allow health officials to more effectively anticipate, prepare for, and respond to a range of climate-sensitive health impacts.
- **The European Union (EU)** has provided a guiding framework for member states on protecting the health of their communities in an environment increasingly shaped by climate change, and several EU members have identified health as a priority area in national climate adaptation strategies.[15]
- **The UK has taken sector-specific action in implementing a Sustainable Development Strategy for the National Health Service (NHS)**. This policy includes both mitigation and adaptation strategies, with the objective of reducing the environmental impact of the health sector, building capacity to respond to the health impacts of climate change and extreme weather events and improving the sector's economic, social and environmental sustainability.[16]
- **China and India** together constitute 36% of the world's population, and both have undergone rapid urbanisation over the last few decades. To date, growth in industrial capacity has been largely fuelled by coal-fired electricity generation and resulted in severe air and water pollution, increased food insecurity and vulnerability to the spread of infectious disease. Both countries have recently taken significant policy steps to move away from use of fossil fuels[17,18] to protect the health of their citizens.[19]

This Framework for a National Strategy on Climate, Health and Well-being for Australia is designed to assist the Federal Government in identifying key opportunities for policy action that will support Australia in meeting its national interest in protecting population health from the impacts of climate change while simultaneously meeting its international obligations in relation to the Paris Agreement. The Framework is designed to facilitate national collaboration (across multiple portfolios) and international collaboration (engaging with and supporting other nations) to allow Australia to build on global experience and global learnings.

A SHARED AGENDA

Consultation with health stakeholders and policymakers across Australia has highlighted a clear expectation that governments at all levels should work together and take steps to ensure that there is ongoing stakeholder engagement on climate and health policy in Australia.[20] In particular, there is an expectation that the Federal Government provide leadership across climate change and health and work together with the health, environment and energy sectors to take action to protect and promote people's health. A cross-portfolio Ministerial Forum reporting to the Council of Australian Governments is envisaged as the governance structure to deliver effective outcomes through shared responsibility.

This Framework provides a shared agenda to assist in achieving the vision of a fair and environmentally sustainable national policy framework that recognises, manages and addresses the health risks of climate change and that promotes the health benefits of climate action. It will help to guide governments and the health sector in considering the health impacts of climate change and applying a health lens to the decision-making process.

A series of consultations with health stakeholders in 2016 emphasised a whole of government approach is needed, with shared responsibility across multiple levels, sectors and jurisdictions.[20] Political will and cross-parliamentary support will be essential in formalising this approach and developing and maintaining the necessary governance, funding, policy, infrastructure and resources required to address climate change and its impacts on the health and well-being of Australians.

THE HEALTH IMPERATIVE: 'RIGHT TO HEALTH' AND HEALTH OPPORTUNITIES

There is growing recognition in international covenants of the links between climate change and the human right to health.[IV] This is recognised in the text of the United Nations Framework Convention on Climate Change (UNFCCC) as well as the recent Paris Agreement.

Article 1 of the UNFCCC defines the adverse effects of climate change as "changes to the physical environment resulting from climate change that have significant deleterious effects on human health and welfare." Article 3 calls upon Parties to the Convention to take measures to minimise the causes of climate change and minimise its adverse effects, including on health. Article 4 further calls for Parties to minimise the public health implications of mitigation and adaptation projects and measures they undertake, using relevant tools such as impact assessments.[21]

The Paris Agreement of the UNFCCC obliges parties to that agreement to consider their citizens' 'right to health' in their climate change response, and to recognise the health co-benefits in choices made in relation to mitigation action.[8] Australia has ratified all international human rights law instruments in which the right to health is enshrined, and is therefore

IV https://unfccc.int/files/parties_observers/submissions_from_observers/application/pdf/676.pdf

obliged to ensure that its domestic and foreign policies contribute towards the realisation of the right to health.[22]

The international medical literature is very clear that the window of opportunity in which to take action on climate change in ways that deliver concurrent benefits for human health and well-being is very small. It will require a paradigmatic shift in thinking, from seeing climate change only as a threat, to recognising that the response to climate change is an opportunity to promote human health and well-being.[7]

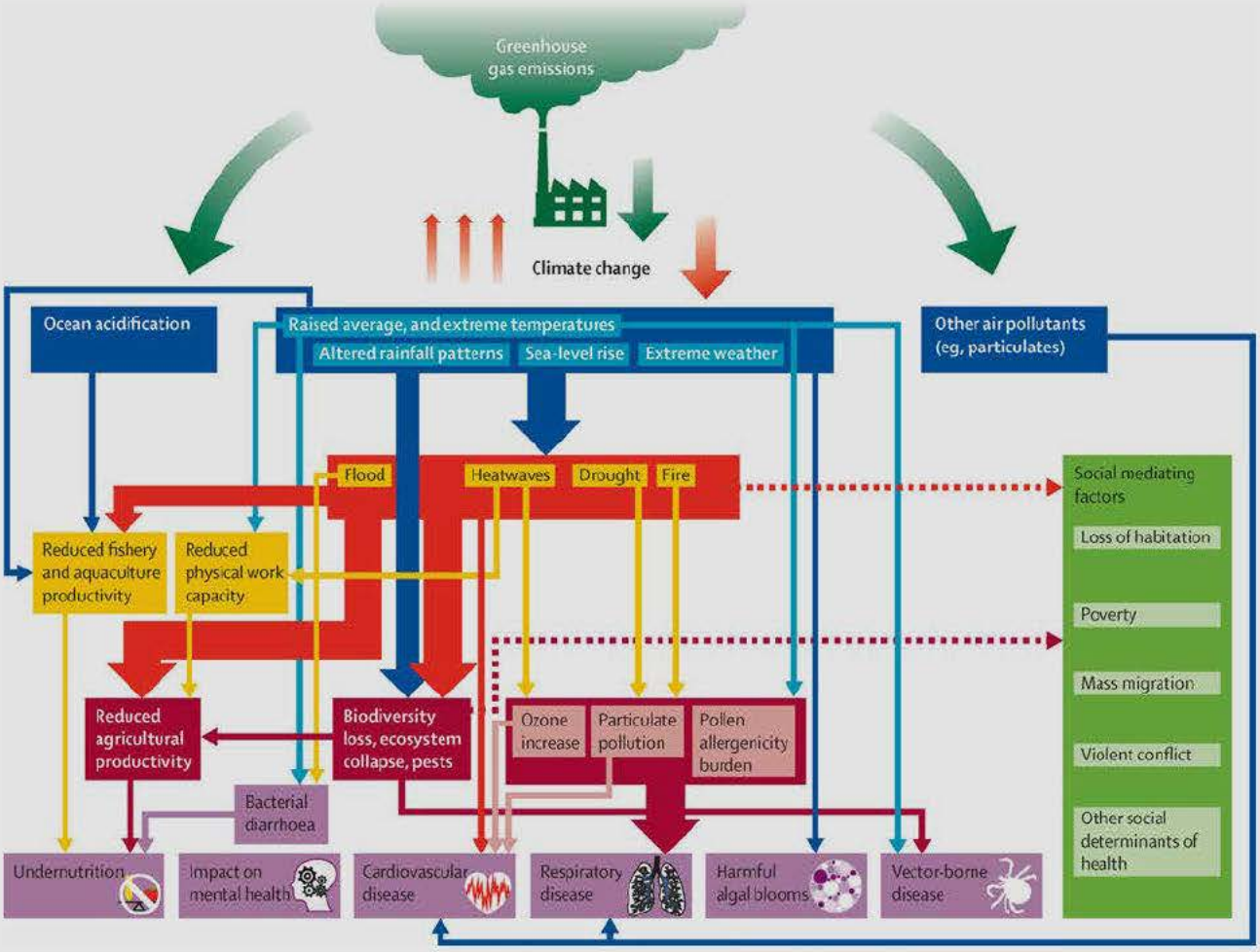


Diagram: An overview of the health impacts of climate change. Source: Lancet Commission, Health and Climate Change, 2015

The Health Impacts of Climate Change in Australia

Rising global temperatures due to climate change have been linked with both direct and indirect harmful impacts on human health, and addressing these impacts is of vital importance to protecting the health of Australian communities.

For example, climate change is contributing to record-breaking temperatures and has increased the likelihood that Australians will be exposed to extreme weather events, such as dramatic flooding in Queensland and Victoria in 2010/11 and severe heatwaves experienced across Australia in the summers of 2009/10, 2012/13, 2013/14, and 2016/17.[23,24,25] Climate change is also contributing to conditions that exacerbate air pollution and the production of aeroallergens, as seen in the thunderstorm asthma event in Victoria in 2016.[26,V]

The human health consequences of these events are significant. For example, heatwaves in 2009 and 2014 in Victoria contributed to 374 and 167 excess deaths, respectively.[28,29,30] The 2016 thunderstorm asthma event in Victoria is considered to have contributed to the deaths of nine people and a 3,000% increase in asthma-related intensive care unit admissions.[31]

The rapid onset of the 2016 thunderstorm asthma event and the scale of its consequences have been described as unprecedented worldwide, and it created extraordinary and unparalleled demands on the health service system.[IV]

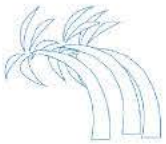
Additionally, existing inequality in society is already contributing to climate change having unequal health impacts, and these differential impacts risk exacerbating this inequality further. The particular vulnerability of Indigenous Australians (and their traditional lands and culture) to climate change is noted, recognising that the capacity of Indigenous Australians to respond to changes in the climate is undermined by the complex challenges of poverty and intergenerational disadvantage.[32]

It should also be noted that some health impacts of climate change have a gender bias, for example men are more likely to die in bushfires,[33] and there is some evidence that during heatwaves, pregnant women may be more likely to suffer pre-term births.[34]

V The Victorian Inspector General for Emergency Management's *Review of the response to the thunderstorm asthma event of 21–22 November 2016: Final Report* states that climate change is influencing pollen, fungal spores, and their interaction with air pollution and meteorological factors (for example wind, thunderstorms). Recent research indicates climate change is likely to increase the season length, species range, production, and allergenic effects of pollens and fungi.[27]

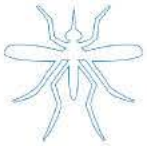
VI An assessment into the health impacts of the November 2016 thunderstorm asthma event found that there was a 3,000 per cent increase in asthma-related intensive care unit admissions to Melbourne and Geelong public hospitals in the 30 hours from 6 pm on 21 November 2016[31]

THE CURRENT AND PROJECTED IMPACTS OF CLIMATE CHANGE ON PUBLIC HEALTH IN AUSTRALIA INCLUDE:



EXTREME WEATHER EVENTS

Increased intensity, duration and frequency of extreme weather events such as floods, storms and heatwaves, are placing increasing pressure on health services and infrastructure and putting more Australians at risk of illness, death and post-traumatic stress[3,35,36,37]



INFECTIOUS DISEASES

A warmer climate and changing rainfall patterns will increase the range and prevalence of food, water and vector-borne diseases such as dengue fever (which is expected to reach northern NSW by 2100), parasitic (zoonotic) diseases, and the prevalence of illnesses resulting from exposure to pathogens[36,38,39,40]

FOOD AND WATER SECURITY

Changes in prevailing weather patterns may threaten the security and quality of water sources and the productivity of major agricultural regions in Australia, with implications for ensuring food and water security for a growing population[36,39,41,42]

OCCUPATIONAL HEALTH IMPACTS

Hotter temperatures place outdoor and manual labourers at increased risk of heat-related illnesses, work accidents and death, while the increased incidence of extreme weather events increases occupational risks for emergency services[43,44,45]

MENTAL ILLNESS AND STRESS

Ongoing environmental change and more frequent and severe weather events, combined with the social and economic impacts of climate change, increase the risk that Australians will experience mental illness and stress[41,42,46,47,48]

AEROALLERGENS AND AIR POLLUTION

Increases in atmospheric temperatures may lengthen the pollen season and alter chemical reactions of some air pollutants such as ozone and particulate matter, increasing exposure to aeroallergens and aggravating conditions such as allergic rhinitis, as well as heart and lung conditions including asthma, while increasing the risk of mortality[41,49,50,51,52]

VULNERABLE POPULATIONS

Vulnerable populations will suffer disproportionately the adverse health impacts of climate change in Australia, with people with pre-existing medical conditions, older people, young, disabled, socioeconomically disadvantaged and Indigenous Australians identified as being particularly vulnerable. Climate change places undue burden on those least responsible and least able to respond[3,4,37,38,39,46,48,53,54]

In addition, there are serious and immediate health threats associated with the production and combustion of fossil fuels, such as coal, oil and gas. International estimates suggest air pollution from coal-fired electricity generation is responsible for hundreds of thousands of deaths globally each year.[1] In Australia, the health impacts from coal-fired power generation is estimated to cost $2.6 billion annually.[2]

The Opportunity for a Healthier Nation

A substantial and growing body of scientific evidence is highlighting that the public health risks posed by climate change represent a health emergency, which threatens to undermine the last 50 years of gains in development and global health.[7] In light of this, a high priority must be placed on addressing the impacts of climate change on human health to avoid placing Australian communities at further unnecessary and avoidable risk. Many climate change mitigation and adaptation policies are also "win-win" opportunities, which both reduce greenhouse gas emissions and the social and economic burden of ill-health.[7] Without effective action, Australia will be unable to capture the economic opportunities arising from these immediate and local health co-benefits.

With Australia's signing of the Paris Agreement and the associated obligation to consider citizens' 'right to health' in the national climate change response, there is both an imperative and opportunity to ensure the Australian community and the health sector are better prepared to protect Australians from the immediate and long-term health risks posed by climate change.

THE CLIMATE IMPERATIVE

Our climate is changing. Driven by atmospheric concentrations of carbon dioxide, methane and nitrous oxide unprecedented in at least the last 800,000 years, average global temperatures have risen by roughly 1°C since the pre-industrial era, with the 20 hottest years on record having occurred since 1981.[55,56] This warming trend continued in 2016, the hottest year on record, which surpassed the previous record set in 2015, which had in turn surpassed the record set in 2014.[57] The rate of this temperature increase is impacting on natural and human ecosystems across the planet, the health and stability of which we rely on for clean water, food, safety and security, and which are essential for good health.[58]

The effects of climate change impact all Australians. From our unique ecosystems to our agriculture, infrastructure and communities, our interaction with and reliance on the environment means that changes to our climate will affect all our lives. Climate-mediated events such as the 'Angry Summer' of 2016/2017, which saw over 200 temperature records broken nationwide in just 90 days, have clear implications for our environment, tourism and the economy, and the health and safety of our communities.[58]

Climate change is not simply an environmental issue, but is also an economic, societal, health and human rights issue. Beyond the impacts on the environment, Australia's changing climate represents a major challenge for individuals, communities, governments, business and industry and the environment.[60] Decisions made today about energy, infrastructure, water management, agriculture, biodiversity and health will have lasting consequences for all Australians, and climate change action is therefore essential to protect our health and prosperity. Effective adaptation and mitigation activities taken today will protect our unique environment and the health and well-being of our communities for generations to come, while also ensuring the continued economic prosperity of the nation.

THE ECONOMIC IMPERATIVE

Tackling climate change has been described as potentially the greatest global health opportunity of the 21st century.[7] Many climate change mitigation and adaptation policies offer significant co-benefits for health. For example, moving away from burning coal for electricity and diesel for motor vehicles will reduce harmful particulate air pollution, and will result in a decreased number of cases of related cardiovascular and respiratory diseases. Shifting to greater use of public and active forms of transport will result in reduced rates of obesity, diabetes, and improved mental health. Reducing illnesses and deaths associated with air pollution and sedentary lifestyles will contribute to improved life expectancy and a reduction in the burden on health care systems.[3] These co-benefits serve as further evidence that climate change action should not be viewed as a cost, but rather as an investment in an opportunity to reduce the social and economic burden of ill-health, while making accelerated progress towards climate goals.

Countries such as the United States and member nations of the European Union are already harnessing these co-benefits. The European Commission estimates that reduced air pollution from climate change mitigation policies could deliver health benefits of up to €17 billion per year by 2030,[61] while the United States Environmental Protection Agency (US EPA) estimated that the health benefits from implementing the Clean Power Plan could result in a total of 3600 fewer premature deaths and 90,000 fewer paediatric asthma attacks in 2030 alone, resulting in an annual economic saving of up to USD$54 billion.[62] In Organisation for Economic Co-operation and Development (OECD) countries plus India and China, the annual cost of the health effects of ambient air pollution is as high as USD $3.5 trillion, or around 5% of global GDP.[63]

Far from representing an economic burden, the human health benefits associated with air quality improvements from these policies can offset the cost of implementation by up to 10 times,[64] even before the inclusion of other economic benefits such as avoided damage to agriculture or public buildings and infrastructure from corrosive pollutants.[65]

Australia is recognised as one of the developed nations most vulnerable to the impacts of climate change.[66] As such, the co-benefits of climate change adaptation and mitigation activities represent a crucial health opportunity for the nation. Extreme heat and weather events already present major risks to Australian communities, and with climate change expected to increase the incidence and severity of these events, actions to mitigate and adapt to their impacts will have significant co-benefits.[25] In Australia, reduced productivity due to extreme heat days already represents an economic burden of over AUD$8 billion annually.[67] The economic costs associated with the health and social impacts of the Black Saturday bushfires and 2011 Queensland floods totalled AUD$3.9 and $7.4 billion respectively, sums greater than the economic costs from infrastructure damage.[68]

Significant action is underway globally to recognise, quantify and capture the social, environmental and health co-benefits of climate change action. In particular, the cost savings of the health co-benefits achieved by policies to reduce greenhouse gas emissions are potentially large, and offer an opportunity to not only protect the health and well-being of Australians, but also to prevent health impacts which could result in significant additional health expenditure from government and personal finances.[7]

A POLICY FRAMEWORK FOR A NATIONAL STRATEGY ON CLIMATE, HEALTH AND WELL-BEING FOR AUSTRALIA

VISION

"A fair and environmentally sustainable national policy framework that recognises, manages and addresses the health risks of climate change and promotes health through climate change action."

PRINCIPLES

The following principles provide the foundation for the intention, rationale and objectives of the Framework for a National Strategy on Climate, Health and Well-being for Australia. They serve to guide the application of the Framework, and provide a conceptual underpinning to the policy directions and recommendations.

1 **The right to health** — to fulfil individuals' and communities' right to health, action must be taken to protect the environment and achieve sustainable development that meets the needs of present and future generations.

2 **Community safety and resilience** — the safety and protection of the community must be paramount in policy development, along with the goal of creating the conditions to ensure communities are prepared for and able to respond to the impacts of climate change.

3 **Environmental protection as a foundation for health and well-being** — the dependence of human population health on a healthy functioning natural environment is recognised in many international treaties and must be core to policy development on climate change and health.[VII]

4 **Health in All Policies**[VIII] — all dimensions of climate change are intrinsically linked, and action to reduce the health risks from climate change requires working across all policy areas and sectors to consider the health impact of their policies and practices. This is best captured through a Health in All Policies approach.

5 **Intragenerational and intergenerational equity** — this refers to the obligation to ensure those most vulnerable to the impacts of climate change are protected, as well as to ensure the rights of all people and communities to access societal and environmental conditions for optimum health and well-being, now and for future generations. Australia also has a responsibility to its neighbours in the region who are disproportionately impacted by climate change and have limited capacity to both mitigate and adapt.

6 **Minimising and managing risk** — reducing and managing current risks and anticipating and preparing for future risks to health from climate change must be a key element of policy development, and should be incorporated into risk management strategies for all public and private institutions.

7 **Indigenous rights, recognition and reconciliation** — the rights and wisdom and unique cultures of Australia's Indigenous people must be central to policy development on climate mitigation and adaptation policies.

8 **Citizen engagement** — all policy development must occur in consultation with, and account for, the stated needs and priorities of affected communities and stakeholders.

VII Article 1 of the Legal Principles for Environmental Protection and Sustainable Development, adopted by the Expert Group of the Brundtland Commission. See http://www.who.int/hhr/information/Human_Rights_Health_and_Environmental_Protection.pdf

VIII Health in all Policies (HiAP) is an established approach to working on the social determinants of health across relevant areas of government. It is used to address complex issues such as health inequities, social determinants of health, and climate change for example. It has been used in South Australia for many years. A summary of the South Australia approach to the social determinants of health can be found at: http://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/health+reform/health+in+all+policies

APPLICATION

This framework is targeted at the federal level as it requires national leadership and coordination. However, it is intended that the National Strategy will facilitate both horizontal and vertical intergovernmental collaboration across multiple sectors including the health sector, primarily through the establishment of a Ministerial Health and Climate Change Forum with overall responsibility for development and implementation of the Strategy.[IX] Thus, it should be considered applicable to national, state/territory, and local government departments and agencies, as well as across multiple portfolio areas, including health, transport, energy, environment, agriculture, planning and infrastructure.

ROLES AND RESPONSIBILITIES OF GOVERNMENT

The consultation process which informed the development of this Framework identified key responsibilities of the Federal Government in order to provide leadership across climate change and health and in facilitation of a whole of government approach to protect the health and well-being of the community from climate-related impacts. The intention of the Framework is to provide a roadmap or suite of options that could be progressed into a formalised strategy and be implemented by the Federal Government into the future. This will require a clear plan of action detailing the policies, actions, targets and responsibilities required at multiple levels and sectors of government to address the health impacts of climate change. It will also require the establishment of appropriate governance and funding arrangements to facilitate the necessary partnerships for shared action and enhanced capacity, coordination and leadership on climate change and health initiatives.

A crucial role of the Federal Government in maximising health outcomes for communities will be in building Australia's health and climate research capacity and doing so in a manner consistent with international policy directions. The Federal Government has a responsibility to ensure policy development is informed by a deep understanding of the specific health threats climate change poses for Australian people and communities. The establishment of a world class climate and health research capacity is vital to identify priority needs, key vulnerabilities and the most effective mitigation and health adaptation measures.

The Federal Government and federal and state health departments also have a responsibility to support the creation of a low carbon and climate resilient health sector. This involves developing policies to enhance the climate resilience of health infrastructure as well as ensuring preparedness among the workforce to respond to climate change impacts. Engagement of health stakeholders in policy development is vital, and education and capacity building across all levels of the health sector is necessary to support this transition.

At the community level, the development of policies which resource and support communities to anticipate and adapt to climate risks is essential to protecting health and well-being. Federal, state and local governments have a responsibility to ongoing engagement supported by education efforts to enhance the community's understanding of specific vulnerabilities and opportunities for action to avoid health risks and improve health outcomes.

IX Refer to the section on Governance for a detailed explanation of the structure, roles and responsibilities of the proposed Ministerial Health and Climate Change Forum

INTERNATIONAL OBLIGATIONS

The implementation of the National Strategy on Climate, Health and Well-being will assist Australia in meeting its obligations under the following international conventions, agreements, and obligations:

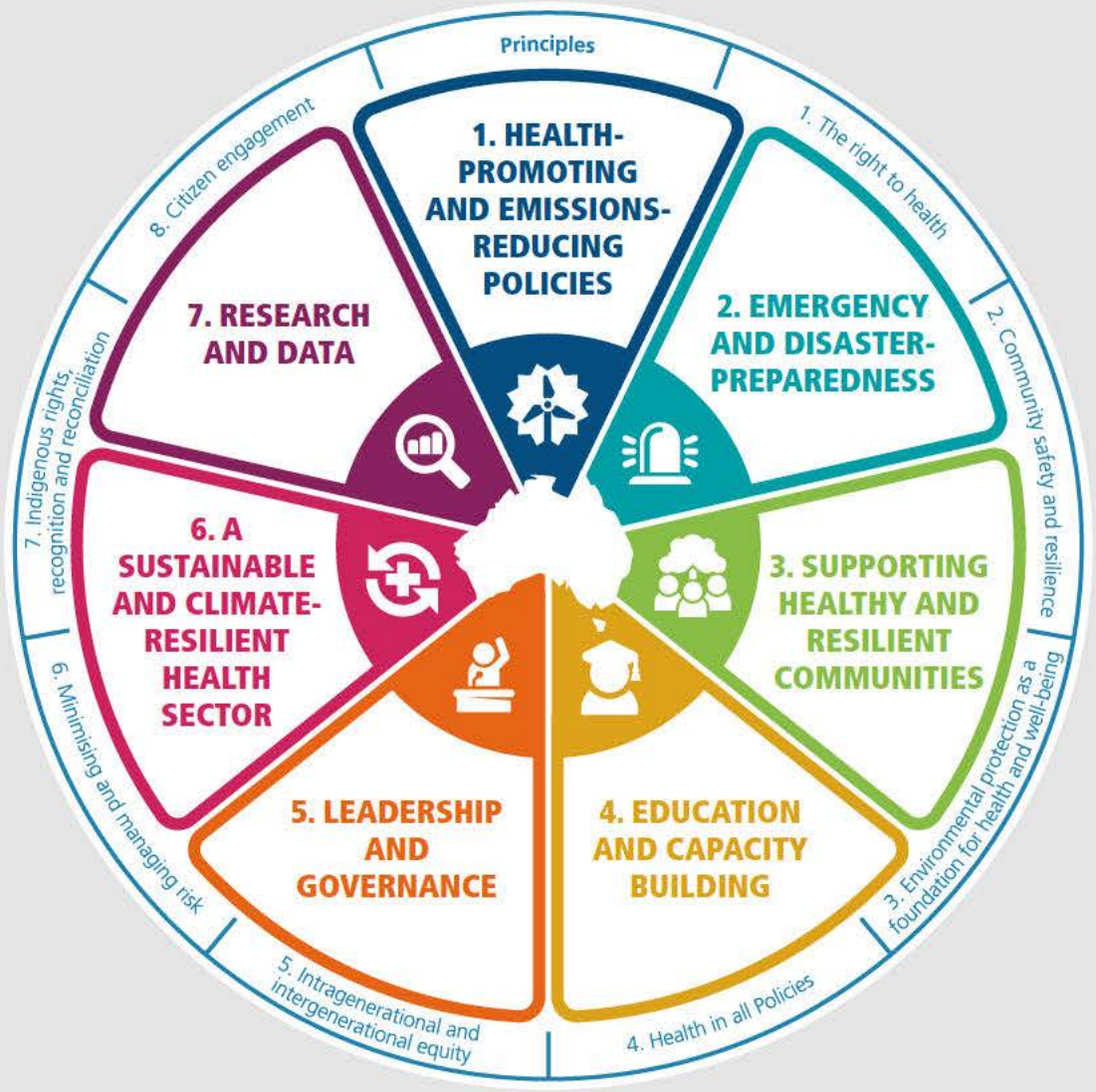
- **United Nations Framework Convention on Climate Change (UNFCCC)** — this international treaty obliges parties to stabilise "greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous interference with the climate system."[X] As a party to the Convention, the Federal Government is obliged to make national commitments consistent with its objective and purpose, and to develop national plans to mitigate climate change, and reduce and prevent greenhouse gas emissions.
- **Paris Agreement** of the United Nations Framework Convention on Climate Change (UNFCCC) obliges Australia as a party to that agreement to consider its citizens' 'right to health' in its national climate change response, and to recognise the health co-benefits in choices made in relation to mitigation action.
- **International Covenant on Economic Social and Cultural Rights** — this international treaty obliges Australia as a party to recognise the right of everyone in Australia to the highest attainable standard of physical and mental health, and to take steps to realise this by all appropriate means to the maximum of its available resources.[XI]
- **Sustainable Development Goals (SDGs)** — of particular relevance to this strategy are SDG Goals 3 (Good Health and Well-being) and 13 (Climate Action). Australia has adopted the SDGs, and as such, the Federal Government is expected to take ownership and establish national frameworks for the achievement of the 17 Goals, and for follow-up and review of the progress made in implementing the Goals.

X See Article 2 https://unfccc.int/resource/docs/convkp/conveng.pdf

XI See Articles 2.1 and 12.1 http://www.ohchr.org/EN/ProfessionalInterest/Pages/CESCR.aspx

THE SEVEN AREAS OF POLICY ACTION

The Framework is structured around seven key Areas of Policy Action. These have been identified through research and consultation with health professionals, health leaders, decision makers and experts in climate change and health.



Under each of these Areas of Policy Action, the desired outcome is identified, along with an overarching policy direction and specific policy recommendations for achieving this outcome. Policy recommendations are focused on areas which present opportunities for capturing health co-benefits of climate action and which will improve the resilience and health outcomes for Australian communities.

The Framework recognises that due to differences in national, state and local government responsibilities, some policy recommendations would be implemented at a federal level whereas others would be implemented at a state or local government level. In addition, the Framework recognises that some of the policy recommendations may require amendments to national, state or local government legislation, whereas others could be implemented without the need for regulatory change. Should these policy recommendations be progressed as part of a national strategy by the Federal Government, it is expected that the strategy would provide details of specific responsibilities across the various levels of government.

1. HEALTH-PROMOTING + EMISSIONS-REDUCING POLICIES

Policies that achieve better health and well-being outcomes and minimise risks while reducing greenhouse gas emissions are win-win options. Fortunately, many carefully designed climate mitigation policies (particularly in the areas of energy, transport, planning, and food/agriculture) can achieve both of these goals.

Effective and equitable policy design should also include consideration of gender differentiated patterns of use of energy and impacts of climate policy.

POLICY DIRECTION 1

Rapid transition towards renewable energy resources for energy and transport to reduce incidence of cardiovascular, respiratory and other illnesses related to air pollution associated with fossil fuel combustion.

OUTCOME

Cleaner air, healthier people: reduced morbidity and mortality associated with pollution from fossil fuel based energy sources for electricity (coal, gas, diesel) and transport (oil, diesel and gas).

Policy recommendations:

1.1 Establish national emissions reduction targets (and fully implement plans to achieve them) consistent with the recommendations of the Climate Change Authority and based on Australia's fair share of the global task to reduce emissions

1.2 Rapidly phase out coal-fired power for electricity and transition towards a non-fossil fuel based energy system, with appropriate support for affected workers and communities to ensure a just transition

1.3 Reform the national electricity grid to allow for a progressively increasing proportion of distributed generation from renewable energy sources such as wind and solar to ensure achievement of emissions reduction goals

1.4 Remove incentives (subsidies) currently available to fossil fuel based energy industries

1.5 Strengthen mechanisms for carbon pricing to discourage investment in and utilisation of fossil fuel based resources and technologies

1.6 Apply financial incentives to reduce energy consumption and improve energy efficiency and encourage fuel switching (to non-fossil fuel-based resources)

1.7 Develop programs and incentives to encourage utilisation of healthy, low emissions, active (walking and cycling) and public forms of transport (bus, tram, train)

1.8 Invest in low or zero emissions transport infrastructure (for example passenger/freight rail, bicycle paths)

1.9 Strengthen national emissions standards for motor vehicles, improve national fuel quality standards and introduce fuel efficiency standards

1.10 Develop incentives to encourage uptake of electric vehicles and expansion of associated infrastructure

1.11 Increase commitment to Australia's world class research and development in renewable energy technologies to ensure its potential contribution to global energy transitions is maximised

POLICY DIRECTION 2

Programs and initiatives that ensure the environmental conditions that favour healthy people are at the centre of land use, planning and infrastructure policy decisions.

OUTCOME

Healthy natural and built environments in both urban and rural settings support the health and well-being of the community, reduce greenhouse gas emissions, improve air quality and limit the urban heat island effect.

Policy recommendations:

1.12 Establish government incentives to encourage low and zero carbon, climate resilient buildings and infrastructure (including in the health sector)

1.13 Amend the National Construction Code to incorporate health-protecting and climate resilient measures into construction (for example including ability to withstand temperature extremes and natural disasters)

1.14 Incorporate health impact assessments in the evaluation of applications for land use change

1.15 Develop incentives to protect and restore biodiversity as a planning priority in both urban and rural areas, recognising that the loss of green spaces in urban areas contributes to increased emissions, poorer air quality, and the urban heat island effect, while biodiversity loss, ecosystem collapse and pests can lead to reduced agricultural productivity and an increase in vector-borne disease

1.16 Expand national programs to preserve natural environments, including wilderness areas and national parks, recognising their vital role in healthy human development and long-term health and well-being, as well as the profound benefits for mental and physical health from interaction with nature

1.17 Recognise the importance of connection to land for Aboriginal and Torres Strait Islander people's health and well-being, and ensure that access to traditional lands and respect for native title underpins decision-making with regard to land use and land use change

POLICY DIRECTION 3

Expansion of initiatives to promote a food production system that recognises the risks of climate change and environmental limits.

OUTCOME

Healthy low emission food production and distribution systems that optimise the health and well-being of the community.

Policy recommendations:

1.18 Develop incentives for farmers to invest in low emission resources, technologies and food production

1.19 Provide public funding for research into sustainable healthy dietary patterns and lifestyles which reduce emissions

1.20 Provide public funding for comprehensive programs to promote sustainable, healthy diets and lifestyles and to promote a reduction in food waste[XII]

1.21 Increase investment in sustainable water strategies and water infrastructure to support food production

POLICY DIRECTION 4

Application of a health lens (Health in All Policies approach) to address climate change and requisite emissions reductions.

OUTCOME

Decisions in all policy areas will be evaluated with regard to the potential for health benefits and health harms, maximising opportunities to improve community health and well-being and minimising perverse unintended consequences.

Policy recommendations:

1.22 Conduct a national study into the economic value of health co-benefits associated with a range of emissions reductions trajectories and a range of emissions reductions strategies

1.23 Establish mechanisms to incorporate health impact assessments and health cost-benefit analyses into environmental and economic decision-making processes (for example for all energy and transport infrastructure projects)

1.24 Include health considerations in any climate change mitigation and adaptation policies and plans

XII Improved diets and reduced food and agricultural waste have the potential to result in significant reductions in greenhouse gas emissions.[69]

POLICY DIRECTION 5

Application of a climate lens to health policies.

OUTCOME

The application of climate risk assessment to all aspects of health policy decision-making will limit adverse impacts on health, enhance climate preparedness, build climate resilience, and inform decision-making to support the transition to low and zero carbon operations.

Policy recommendations:

1.25 Include evaluation of climate risks, where relevant, in health policy development (federal, state and municipal levels) including areas such as health infrastructure, population and community health, the health workforce and safety and quality of care

1.26 Include life cycle analysis and the evaluation of embodied carbon in decisions about healthcare procurement, and establish incentives for low and zero carbon purchasing decisions

2. EMERGENCY + DISASTER-PREPAREDNESS

Climate change is predicted to increase both the frequency and severity of extreme events such as storms, flooding and heatwaves for Australia. Protecting the health and well-being of communities from the impacts of these events requires building the capacity of health and emergency services to identify vulnerabilities and to prepare and adequately respond.

Policies to support this also increase the ability of health and emergency services to respond to challenging or unexpected events, such as thunderstorm asthma, which may present unpredictably in a changing climate.

POLICY DIRECTION 1

Improve the overall preparedness and ability of the health and emergency services sectors at all levels to respond to climate threats to health, including from extreme weather events.

OUTCOME

Climate-resilient health and emergency services are adequately prepared for and able to respond to climate-related health threats, including those posed by extreme weather events.

Policy recommendations:

2.1 Expand investment in early warning systems to effectively identify potential climate-related threats to health, such as extreme weather events, to enable rapid response to mitigate the impacts on Australian communities

2.2 Expand investment in vulnerability mapping programs to identify and map vulnerable populations and infrastructure to inform climate adaptation strategies and emergency response plans

2.3 Incorporate climate-health risks in national health performance standards (for example add climate change to the risks requiring management in Standard 1 of the National Safety and Quality Health Service (NSQHS) Standards)[XIII]

2.4 Develop a new NSQHS Standard for minimising the health risks of climate change to the health of patients and to the delivery of safe, quality care. This should include performing organisation-wide risk assessments and planning for risks such as surges in service demand, destruction of infrastructure and equipment, and interruptions to workforce availability, access and supply chain

XIII Available at https://www.safetyandquality.gov.au/wp-content/uploads/2011/09/NSQHS-Standards-Sept-2012.pdf

3. SUPPORTING HEALTHY + RESILIENT COMMUNITIES

Policies are needed that enhance the capacities of community based health and social service organisations and local governments to support communities in preparing for climate related events and emergencies, minimising their impacts on health and well-being, and facilitating adaptation and resilience over the short, medium and long-term. Healthy and resilient communities also rely on a healthy natural environment and thriving ecosystems.

Policy action is also needed to address the expected impacts of climate change on the social determinants of health, which are defined by the World Health Organization as 'the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life.'[XIV] The social determinants of health are mostly responsible for health inequities, or the avoidable differences in health status seen within and between countries. These include factors such as Aboriginal and Torres Strait Islander identity, gender, housing, food security, employment and the urban environment.

POLICY DIRECTION 1

Enhance the capability of community based health and social service organisations and local government to prepare for, respond to and recover from climate change related incidents and emergencies (for example, extreme weather events).[XV]

OUTCOME

People in local communities are better able to prepare for, survive, cope with and recover from climate related events and emergencies, through the support of local government and community and social service organisations. The creation of a national network of organisations working within a consistent framework will enhance community resilience.

Policy recommendations:

3.1 Resource and support community based health and social service organisations to:

- develop their understanding of climate risks to service delivery and the population groups they serve, especially vulnerable groups such as older people, children and younger people and those on low incomes;

XIV World Health Organization 2017. Social determinants of health. Website accessed 19 April 2017. http://www.who.int/social_determinants/sdh_definition/en/

XV For further information on the importance of adaptive action by community based health and social service organisations, refer to Walker & Mason, *Climate change adaptation for health and social services*[70]

- identify the risks from extreme weather events to their service (organisation and service recipients) and to prepare emergency management and service continuity plans that enhance the resilience of their organisation and community;[XVI,XVII] and
- develop their understanding of specific vulnerabilities (for example gender, socio-economic status, rurality)

3.2 Adapt service delivery contracts to fund community-based health and social service organisations for their contributions to emergency planning, response and recovery activities

3.3 Include community-based health and social service provider organisations in emergency planning processes (national bodies at the national level, state bodies at state level and relevant service providers at local government level) with a focus on health and well-being outcomes for communities

POLICY DIRECTION 2

Address the impacts of climate change on the social determinants of health at national, state and local government levels.

OUTCOME

Enhanced community resilience through the implementation of policy options that address the impacts of climate change on social determinants of health.

Policy recommendations:

3.4 Support the development of resources to:

- assess the likely impacts of climate change on social determinants of health (such as housing, employment, food security and the built environment), including their associated costs;
- identify actions to mitigate these impacts; and
- quantify the health co-benefits of implementing these actions

3.5 Recognise that Aboriginal and Torres Strait Islander communities are particularly vulnerable to the health impacts of climate change and commit to closing the gap in Indigenous disadvantage by fully resourcing, supporting and implementing the *National Aboriginal and Torres Strait Islander Health Plan*

XVI ACOSS has developed a toolkit to assist organisations working to develop organizational and community resilience that could be part of such an initiative. See: http://resilience.acoss.org.au/

XVII The most substantial body of evidence on resilience in disaster readiness can be found in: Norris et al (2008) *Community Resilience as a Metaphor, Theory, Set of Capacities, and Strategy for Disaster Readiness*[71]

POLICY DIRECTION 3

Facilitate the empowerment of communities to participate in the care and wise use of natural resources, including the land and sea, and in particular enable and support traditional owners to care for their country.

OUTCOME

The restoration of a healthy natural environment and thriving ecosystems to meet the biophysical needs of the population for clean air, fresh water, shelter, food production, a stable climate, and management of waste streams, and for psychological, cultural and spiritual well-being.[XVIII] Greater awareness of these fundamental links will promote engagement and reinforce environmental protection as a health promotion initiative.

Policy recommendations:

3.6 Develop and expand programs at the national, state, and local levels to engage and support all communities in environmental connection and protection initiatives as a vital health promotion measure (for example, the Healthy Parks Healthy People framework, which has community health and wellbeing in a changing climate as a key focus area for action).[XIX]

XVIII Tait, P. et al. 2014. *Determinants of health: the contribution of the natural environment*, Australian and New Zealand Journal of Public Health, vol. 38 no. 2.

XIX The Healthy Parks Healthy People concept has been adopted in a number of states and territories, including Victoria and South Australia. See: http://parkweb.vic.gov.au/about-us/healthy-parks-healthy-people and http://www.hphpcentral.com/about

4. EDUCATION + CAPACITY BUILDING

While most Australians recognise that climate change is occurring, policies that educate and raise awareness of the health impacts of climate change help to build resilience in the Australian community as well as within the health workforce.

Processes and mechanisms for targeted communication and engagement are needed to help to overcome psychological distancing, motivational issues, perverse incentives and information asymmetry to enhance adoption of energy efficient, lower emission, and climate resilient lifestyles and behaviours.

POLICY DIRECTION 1

Educate and train current and future health professionals on the health impacts of climate change.

OUTCOME

Health professionals are well-educated and aware of the health risks of climate change, and better prepared to recognise and react to these risks.

Policy recommendations:

4.1 Develop a national education and training framework to support health professionals in recognising, preparing for and responding to the health impacts of climate change

4.2 Incorporate content addressing the significant health challenges associated with climate change in all undergraduate and relevant postgraduate health and medical curricula

POLICY DIRECTION 2

Enhance the climate change and health literacy of the general public.

OUTCOME

Greater community awareness of, and action to address, climate change at home, in organisations and communities.

Policy recommendations:

4.3 Develop a national educational campaign to inform communities about the health risks of climate change, health-protective adaptation strategies and the health benefits of reducing emissions and transitioning to a low-carbon future. Include specific strategies to engage all sections of the community, including for different genders and for those who may be difficult to reach with traditional education campaigns (e.g. low income and disadvantaged people, culturally and linguistically diverse communities, children and young people)

4.4 Develop a national certification and labelling scheme for products to communicate embodied carbon and to guide consumer behaviour towards low carbon choices

5. LEADERSHIP + GOVERNANCE

The success of a National Strategy on Climate, Health and Well-being will be dependent on the facilitation of collaboration both vertically (involving national, state and local governments) and horizontally (across multiple sectors and within the health sector itself).

Policies that promote collaboration will enhance the effectiveness of the overall strategy and ensure the health and well-being of Australians is protected in the most efficient and informed manner.

The success of the strategy will also depend on investment in human resources across government and the health sector more broadly to prepare for, respond to and adapt to climate-related health impacts. Internationally, Australia should capitalise on its global standing and regional leadership role to foster collaboration, advocate for and demonstrate commitment to addressing the impacts of climate change on health and well-being.

POLICY DIRECTION 1

Establishing effective governance arrangements to support a National Strategy for Climate, Health and Well-being for Australia.

OUTCOME

Effective governance arrangements which facilitate horizontal and vertical collaboration in implementing the National Strategy's objectives, projects and initiatives, and which ensure that health and climate considerations are thoroughly integrated in government-wide strategies.

Policy recommendations:

5.1 Establish a Ministerial Health and Climate Change Forum, based on the structure of the Ministerial Drug and Alcohol Forum and consisting of Commonwealth and State/Territory Ministers with responsibility for Health, Environment and Energy. This Forum will oversee implementation, monitoring and reporting of the National Strategy for Climate, Health and Well-being and would be responsible for reporting to COAG on the progress of the Strategy's objectives, initiatives and policies

5.2 Establish or nominate a National Agency (liaising with and supported by the Department of Health) to advise the Ministerial Health and Climate Change Forum and with responsibility for evaluating and monitoring of the outcomes and effectiveness of the programs and initiatives arising from the Strategy

POLICY DIRECTION 2

Advocate for and demonstrate leadership internationally on action to address the health impacts of climate change.

OUTCOME

Effective national leadership which facilitates increased international commitments to addressing the impacts of climate change on health and well-being.

Policy recommendation:

5.3 Advocate for the inclusion of health and climate change in high-level statements of the General Assembly of the United Nations (UNGA)

5.4 Ensure strong health representation from Australia at international climate forums, including sending health delegates to represent Australia at the annual UNFCCC climate talks and the annual WHO Climate and Health Summit

5.5 Ensure increased support for climate change adaptation and resilience building in the region and develop a comprehensive climate change strategy for Australia's aid program, including a focus on addressing the health risks from climate change

6. A SUSTAINABLE + CLIMATE-RESILIENT HEALTH SECTOR

International research suggests emissions from the health sector in Australia are between 4–8% of total national emissions.[XX] There is significant scope and opportunity for reducing both greenhouse gas emissions and the environmental footprint of the health sector.

The evidence demonstrates that a low carbon and environmentally sustainable health sector would deliver demonstrable economic, social and environmental benefits for Australia. If combined with initiatives to improve the sector's climate resilience, Australia's health sector will continue to deliver high-quality care which maximises these 'triple bottom line' benefits while reducing exposure to climate risks.

POLICY DIRECTION 1

Develop and implement nationally coordinated initiatives to transition to a low / zero carbon, climate-resilient, environmentally sustainable health sector in Australia.

OUTCOME

An Australian health system which delivers high-quality care in financially and environmentally sustainable ways and successfully manages climate risks, and in so doing, improves public health and community resilience.

Policy recommendations:

6.1 Establish a national sustainable healthcare unit within the Commonwealth Department of Health to provide leadership and direction to the health sector, support state and territory initiatives to implement sustainability initiatives through the provision of tools, resources and guidance, and collect and report data on health sector sustainability performance across Australia

6.2 Support the establishment state and territory healthcare sustainability units tasked with:

- Establishing appropriate sustainability metrics;
- Measuring the carbon and environmental footprint of health services in line with established indicators;
- Supporting health organisations within their jurisdictions to reduce and monitor their carbon emissions and environmental impacts; and

XX Healthcare emissions in England have been consistently estimated at 4% of national emissions, while the US healthcare sector is estimated at around 8%[72]

- Supporting the development, implementation and evaluation of healthcare-focused climate mitigation and adaptation plans

6.3 Support the establishment of collaborative networks of health organisations, as well as international partners and non-health sector institutions, to develop innovative, low carbon models of care. Areas of work may include: innovations in information communication technology, greater utilisation of primary and community care, establishing networks of multi-disciplinary health professionals committed to developing and implementing low carbon models of care in their area of clinical practice, and building social capital.[XXI] Work programs should include evaluation of health outcomes, as well as environmental and financial cost/benefit analysis of these models of care

POLICY DIRECTION 2

Establish standards for a climate resilient health sector and systems for their implementation, monitoring and achievement.

OUTCOME

A climate-resilient health sector, able to maintain a high standard of safe, quality care, with an appropriately skilled workforce able to meet the healthcare needs of the community in a changing climate.

Policy recommendations:

6.4 Expand and promote the Global Green and Healthy Hospitals initiative[XXII]

6.5 Integrate sustainable and resilient design solutions for health infrastructure that ensures continuity of health service delivery

6.6 Introduce mandatory standards and obligations for health facility design, construction and on-going management of both new and existing facilities, which prioritise building resilience to direct and indirect climate risks

6.7 Invest in secure technological innovations and knowledge management systems for health services to withstand power interruption in the event of emergencies or disasters, including extreme weather events

6.8 Build resilience of the interdependent agencies and critical infrastructure to avoid disruptions to health services

6.9 Mandate climate risk management in health care sector governance standards to ensure strategic and operational planning in the sector recognises and responds to climate change risks to infrastructure, service provision, the health workforce, and supply chains

XXI Evidence shows that building social capital (social networks, social relationships, social support, community resources) is as important as financial capital in supporting health care delivery. See https://hbr.org/2013/11/social-capital-is-as-important-as-financial-capital-in-health-care

XXII Global Green and Healthy Hospitals is an international network of hospitals, health care facilities, health systems, and health organizations dedicated to reducing their environmental footprint and promoting public and environmental health. See: www.greenhospitals.net

7. RESEARCH + DATA

Australia is one of the most vulnerable countries to climate change. Global warming is already increasing baseline heat and heat extremes, and increasing rainfall variability. The associated impacts on human health and the Australian society differ to other countries.

Understanding of the implications for the Australian population is required to respond to the challenges of climate change. This requires investment in Australian research, as well as collaborative partnerships with international researchers, to generate evidence and experience. Prioritisation should be given to partnerships with researchers in high emissions countries, in recognition of the global impacts of climate change.

POLICY DIRECTION 1

Establish and fund a world class climate and health research and health intelligence capacity that enables evaluation of priority needs and supports a response to Australia's specific health threats, as well as supporting climate-health research and responses in high emissions, less developed nations.

OUTCOME

Decision-making is informed by robust, Australian generated research on climate change health threats and the mechanisms of health impact, identification of vulnerable communities as well as co-benefits, and effective strategies to mitigate or adapt to health risk factors.

Policy recommendations:

7.1 Support Australia's health and climate research capacity through the establishment of an ongoing climate change and health funding stream via the National Health and Medical Research Council (NHMRC) and Medical Research Future Fund (MRFF), and restore and expand funding to the National Climate Change Adaptation Research Facility (NCCARF) to support the investigation of localized state and regionally-based climate health challenges, including:

- Identifying near and long-term health threats, and the development and evaluation of health protecting adaptation strategies;
- Assessment and forecasting of climate change health impacts across Australia's climatic zones;
- Establishment of an intersectoral group to identify relationships between human health and urban design, energy and water security, transport and other sectors, and identify potential solutions;
- Assessment of health-related economic benefits (i.e. co-benefits) to be gained from pro-health climate change mitigation and adaptation strategies that result from

building community resilience, improved air quality, active transport options, and other co-benefits associated with emissions reductions;

- Assessment of the health sector's contribution to Australia's total greenhouse emissions and support the sector's transition to low carbon operations;
- Assessment of the most effective interventions to mitigate risks from climate-sensitive infectious diseases (for example vector and zoonotic borne diseases); and
- Identifying, documenting and monitoring the psychological and social impacts of the ongoing threat of climate change and associated issues relating to indirect exposure

POLICY DIRECTION 2

Establish comprehensive national health surveillance systems which track and evaluate climate-related indicators and inform effective responses.

OUTCOME

National health surveillance systems ensure climate change and environmental health threats are identified and appropriate responses developed, thereby ensuring the best possible physical and social health and well-being of the community.

Policy recommendations:

7.2 Establish a national environmental health surveillance system which includes climate-related indicators[xxiii]

7.3 Provide continued investment in and support for the National Notifiable Diseases Surveillance Network, including a strong focus on disease outbreaks which may increase in frequency and severity as a result of climate change (for example vector and zoonotic borne disease outbreaks)

XXIII The establishment of a national environmental health surveillance system would complement the existing National Notifiable Diseases Surveillance Network, which is overseen by the Communicable Diseases Network Australia (a subcommittee of the Australian Health Protection Principal Committee (AHPPC)). The development of a national environmental health surveillance system could be overseen by the Environmental Health Standing Committee (a subcommittee of the AHPPC), with appropriate support and funding. An example of an existing national environmental health surveillance system is the United States Centers for Disease Control and Prevention National Environmental Public Health Tracking Network: https://www.cdc.gov/nceh/tracking/. Examples of climate-related indicators included in the tracking network are exposure to extreme heat and air quality.

IMPLEMENTING THE STRATEGY

The Framework does not only imply actions and strategies for the health portfolio and sector; in recognition of the systemic and complex nature of climate change... it prescribes policy directions for a

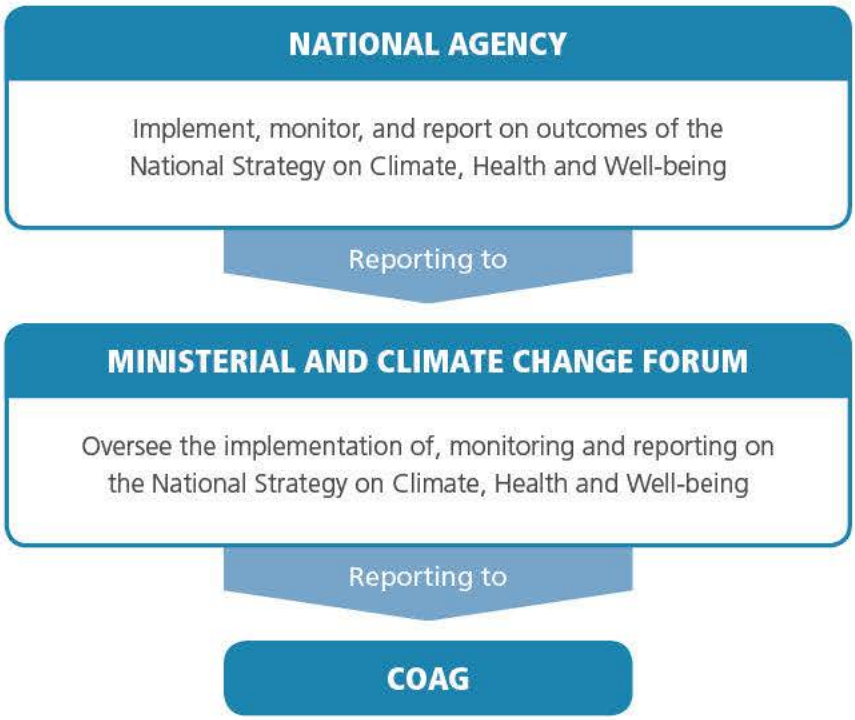
GOVERNANCE

The development and implementation of the National Strategy on Climate, Health and Well-being for Australia should be undertaken by a nominated or newly established agency, reporting to a Ministerial Health and Climate Change Forum.

This Forum, based on the structure developed for the Ministerial Drug and Alcohol Forum, should be co-chaired by the Commonwealth Ministers with portfolio responsibility for Health, Environment / Climate Change and Energy.

Membership should consist of Ministers from each jurisdiction with responsibility for these (or other similarly titled) portfolios, with the potential for the additional inclusion of Ministers with responsibility for related portfolios, such as Mental Health, Resources, Emergency Services, Planning, and Infrastructure.

The Ministerial Forum would have a shared responsibility for overseeing the development and implementation of the Strategy, including setting the overall policy direction and providing final approval for the Strategy's policies, programs and initiatives. This Forum should also be responsible for monitoring and reporting to COAG on the progress and outcomes from the implementation of the Strategy, which would also be detailed through the production of a publicly available annual report by the National Agency.



The National Agency would have responsibility for supporting the Forum in evaluating, monitoring and reporting on the outcomes and effectiveness of the programs and initiatives arising from the Strategy. These reports would also include a review of the Strategy and recommendations for amendments to ensure continued alignment with the vision, principles and desired outcomes.

STAKEHOLDER ENGAGEMENT

In accordance with the principle of citizen engagement, ensuring stakeholder engagement in the development and implementation of the Strategy is essential. Governments at all levels must take steps to facilitate ongoing engagement and collaboration with the health sector (e.g. health professionals, health care organisations and service providers), academic and research institutions, and the wider community to ensure the experiences, priorities and concerns of these groups are considered and the policies and initiatives outlined in the Framework maximise health outcomes.

The Commonwealth, States, and Territories should put in place arrangements to formally and regularly engage with stakeholders in the health sector regarding their views, needs and priorities to inform the development of climate and health policy in Australia. The Ministerial Forum with responsibility for oversight and implementation of the Strategy should hold a biannual national summit with health stakeholders to coincide with the release of the National Agency's annual report, with the potential for further forums on specific topics to be held as the implementation of the Strategy progresses.

EVALUATION, MONITORING AND REPORTING

Monitoring and reporting progress on the implementation of and outcomes associated with the Strategy will be vital to ensure that the objectives are being met and that the health and well-being of Australian communities is being protected from the impacts of climate change. It is therefore recommended that the National Agency develop and adopt a national performance framework to evaluate progress under the Strategy against a set of chosen indicators based on the Areas of Policy Action. A report from this evaluation should be published and made publicly available on an annual basis.

The national performance framework and relevant indicators should be developed in consultation with the health community and experts from across sectors.

Such a framework will enable Australia to demonstrate its progress on the international stage. Starting in 2017, Australia's performance will be evaluated annually against the Lancet Countdown indicators (an annual global evaluation of nations' responses to climate change, and the health benefits that emerge from the low carbon transition).

The indicators developed for the Lancet Countdown have informed the development of this document and serve as a useful guide for how cross-sectoral progress on climate change and health can be tracked at a national, state and local level.

EXAMPLES OF PROPOSED LANCET COUNTDOWN INDICATORS WHICH ALIGN CLOSELY WITH THE POLICIES AND INITIATIVES IN THIS FRAMEWORK

HEALTH IMPACTS OF CLIMATE HAZARDS

- Exposure to heatwaves
- Food security and undernutrition
- Changes in incidence and geographical range of climate-sensitive infectious diseases

HEALTH RESILIENCE AND ADAPTATION

- Assessment, early warning and decision-making tools across timescales to climate-related health impacts
- Human resources to prepare, respond and adapt to climate-related health impacts

CO-BENEFITS OF MITIGATION

- Carbon intensity of the energy system
- Greenhouse gas emissions of healthcare systems

ECONOMICS AND FINANCE

- Valuing the economic health co-benefits of climate change mitigation

POLITICAL AND BROADER ENGAGEMENT

- Inclusion of health and climate change in medical and public health curricula
- Inclusion of health and climate change in high-level statements of the UNGA

The final Lancet Countdown Indicators will be available at http://lancetcountdown.org with the production of the first annual global report in November 2017.

The report on Australia's own evaluation should be tabled in the federal parliament each year and made publicly available. This will provide insight into the implementation and progress of the National Strategy and its associated health and climate outcomes, as well as the extent of stakeholder and community engagement, to highlight areas of concern as well as future directions.

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