



CLIMATE<sup>AND</sup>  
HEALTH  
ALLIANCE

Submission to the  
Productivity Commission Inquiry into  
Barriers to Effective Climate Change Adaptation

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## About the Climate and Health Alliance

The Climate and Health Alliance (CAHA) is a not for profit organisation and a national alliance of organisations and people in the health sector who work together to raise awareness about the health risks of climate change and the health benefits of emissions reductions.

CAHA's members recognise that health care stakeholders have a particular responsibility to the community in advocating for public policy that will promote and protect human health.

The membership of the Climate and Health Alliance includes a broad cross section of the health sector with 25 organisational members, representing health care professionals from a range of disciplines, health care service providers, institutions, academics, researchers, and consumers.

For more information about the membership and governance of the Climate and Health Alliance, please see Appendix C. For further information see [www.caha.org.au](http://www.caha.org.au)

## Introduction

**“Understanding the health impacts of climate change is one of the most vital pieces of information we need to make sound decisions about climate change adaptation. We hear about sea-level rise, changes in vegetation, forest fires . . . but compared with other impacts, we hear very little about human health.”<sup>1</sup>**

- *Michelle Bell, Yale University*

The Climate and Health Alliance is responding to the Productivity Commission Draft Report on Climate Change Adaptation out of concern that the issue of health protection through effective adaptation is being overlooked in Australia's adaptation responses and in the Commission's report.

The fact there is no submission from any health agencies to this Inquiry reflects the lack of understanding within health departments and the health sector more broadly about the risks posed to health from climate change and the importance of protecting health through effective adaptive responses.

This submission will provide a short overview of the key challenges to adaptation as seen by the Climate and Health Alliance and offers a series of supplementary papers (see Appendix B) that we hope will provide further insight into some of these challenges.

A brief personal account from a health professional is provided at Appendix A to illustrate some of the challenges to effective adaptation to protect health.

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<sup>1</sup> Cooney, C. Preparing a People: Climate Change and Public Health, Environmental Health Perspectives, 119: 4 , 2011.

## The importance of health protection

In 2009, the international medical journal *The Lancet* identified climate change as “the biggest global health threat of the 21<sup>st</sup> century”.<sup>2</sup>

A large body of evidence exists about the serious and increasing risks to human health from climate change and yet there has been little in the way of responses from Australian policymakers that either recognises this threat or prepares to address it.

The Australian and global population face the most serious threat to public health in human history, with global mean temperatures now predicted to rise by three degrees by the middle of this century.

Australian policymakers, the health sector, and the Australian community are seriously underprepared for the changes that are predicted to occur as a result of unmitigated global warming, which will likely pose unprecedented risks for health and wellbeing.

Australians already face serious risks to health from climate change. And as it is ‘risk multiplier’, the national burden of disease is likely to be significantly increased by climate change.

Existing diseases are likely to be amplified by rising temperatures while other disease burdens will emerge. Climate sensitive infectious diseases are likely to increase in incidence and distribution; severe weather events will increase in frequency and severity and pose greater risks to more people from direct physical harm as well as serious mental health impacts.<sup>3</sup>

Increases in air pollution from ground level ozone amplified by increasing global temperatures will contribute to an increasing burden of respiratory disease and cardiovascular disease.<sup>4</sup>

Increasing food and water insecurity pose increasing risks to health, and as temperatures rise, climate change will amplify the adverse impacts of other environmental stressors that contribute to disease.

## Adaptation for health

One of the best available government reports on climate change adaptation strategies for health in Australia is the one developed by the Western Australian Department of Health - *Health impacts of climate change: Adaptation strategies for Western Australia*.

- A copy of this report is provided as a supplementary paper to this submission.

This report identifies many challenges to adaptation measures to reduce or mitigate the impact of climate change on human health, many of which require actions across a range of sectors,

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<sup>2</sup> Costello, A. et al. Managing the health effects of climate change, *The Lancet*, Vol 373, 16 May 2009.

<sup>3</sup> McMichael T., Montgomery, H. and Costello, A. Health risks, present and future, from global climate change, *British Medical Journal*, 19 March 2012.

<sup>4</sup> Organisation for Economic Cooperation and Development, *Environmental Outlook to 2050*, March 2012.

including in the legislative/regulatory domain; public education and communication; public health surveillance and monitoring; ecosystem protection; infrastructure; engineering and technology; and direct health interventions.

In contrast, the last risk assessment by the federal health department on climate change and health was in 2002. No resources on climate change and health adaptation or mitigation, either for health professionals or the public, have yet been developed.

## Overview of barriers to adaptation

### Improving understanding about risks

Preparing to protect health from climate change through effective adaptation requires a thorough understanding of the risks and what constitutes effective strategies to protect health.

However, as referred to above, **there is limited understanding among policymakers, the health sector, and the community about the risks to health from climate change, which has no doubt led to the failure to develop effective adaptation responses.**

Increasing awareness among health professionals could assist in developing more effective adaptive responses as well as provide for better communication with the public about risks to health and effective strategies for health protection.

Little evaluation has been undertaken in Australia in relation to climate 'literacy' among health professionals, however international evaluations reveal public health bureaucrats<sup>5</sup> and public health nurses<sup>6</sup> are ill prepared to respond to climate change and have not yet made climate change adaptation a priority. One study of public health department directors in the US (attached) suggests climate change adaptation and prevention are not currently major activities at most health departments, and that all will require assistance in making a transition to doing so. The 2012 evaluation of public health nurses' knowledge and attitudes regarding climate change (also attached) suggests they lack a thorough understanding of the evidence regarding human induced climate change and its implications.

A national community engagement campaign is needed to convey the risk to health from climate change in order that the community understand the risks they face, thereby facilitating more effective adaptive responses as well as greater support for the development of effective public policy responses.

- The report: *Community Engagement and Climate Change: Benefits, Challenges and Strategies* produced by the McCaughey Centre for Population Health at the University of Melbourne, in collaboration the Victorian Council of Social Service and Council on the Ageing, Victoria provides an excellent overview of the importance of effective community

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<sup>5</sup> Maibach, E.W. et al. Change change and local public health in the United States: Preparedness, Programs and Perceptions of Local Public Health Department Directors, *Climate Change and Health*, PLoS One, 3:7, 2008.

<sup>6</sup> Polivka, B. et al. Public Health Nurses' Knowledge and Attitudes Regarding Climate Change, *Environmental Health Perspectives*, 120:3, 2012.

engagement for climate change and adaptation and mitigation and is attached as a supplementary paper.

### **Recognising the health benefits of climate action**

Building public support for the implementation of policies to protect health from climate change would be considerably enhanced by raising awareness about the evidence that many strategies to reduce risks to health can also reduce emissions.

Many adaptation and mitigation strategies involving built environment, sustainable transport and renewable energy will all bring public health benefits. Frequently however these benefits are not being evaluated in the context of decisions about adaptation and mitigation and therefore the opportunities to improve health are being overlooked.

For example, the installation of effective insulation can help reducing the adverse health impacts from heatwaves, while at the same time reducing energy use which can also have health implications for households, for whom socio-economic factors constitute a health risk.

Measures to reduce the current health risks from climate change are, in large part, the same strategies that are needed to mitigate risks. A better understanding of the interaction between public health outcomes and adaptation and mitigation strategies can mean that measures can be developed that are cost effective and improve health.

The evidence suggests that if action is taken promptly, the health benefits from effective adaptive responses could outweigh the costs of implementing these policies.<sup>7</sup>

Where health and economic co-benefits can be realised, adaptation programs and strategies should be prioritised.

The following papers about the health benefits of reducing emissions are provided as supplementary materials to this submission:

- Health Care Without Harm and Health and Environment Alliance, *Acting Now for Better Health*, 2010.
- Haines, A. and Dora, C. How the low carbon economy can improve health, *British Medical Journal*, 344, 19 March 2012.

### **Ensuring adequate health risk surveillance and response systems**

Effective adaptive responses to climate change to protect health should include building resilience in communities and in health systems.

Part of this requires improving understanding of risks as well as enhancing responses.

- A 2011 Australian Health Review article (attached) by Weaver et al identifies six strategies for preparing the health system for climate change: health promotion; health

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<sup>7</sup> Campbell-Lendrum, D. et al. Health and climate change: a roadmap for applied research, *The Lancet*, Vol 373 16 May 2009.

protection; disaster preparedness; workforce development; strategic and service planning; and healthcare financing.

Improvements in early warning systems are needed for extreme weather events such as heatwaves, floods and storms and outbreaks of infectious diseases.

Increasing the preparedness of emergency services and disaster response teams for extreme events is needed.

Enhancing community understanding of climate change risks is another important adaptation measure, as is the adequate financing of health care and providing equitable access to care to ensure all those who require health care are able to access it.<sup>8</sup>

Improvements are needed to existing public health surveillance systems to ensure they are sufficiently comprehensive and sensitive enough to monitor the effects of climate change on health.

Where monitoring does exist, as with air pollution monitoring for example, public health responses are inadequate. Ozone pollution levels frequently exceeds the national standard several times a year, and yet there is no public health warning system to advise the public about these risks nor offer advice about how to avoid exposure.

Regional risk and health impact assessments are important to assist in the development of effective responses of services and communities at a local level.

While local plans for adaptation are vital, national climate and health adaptation and mitigation plans are also needed. There is a major gap in policy leadership from the federal health bureaucracy on protecting health from climate change and this should be addressed through the development of a National Plan for Health in Responding to Climate Change (Adaptation and Mitigation).

### **Incentives and motivation to manage risks**

Climate change threatens natural and built systems that protect and preserve health, ranging from direct infrastructure damage to disruption of the social and organisational structures required for community resilience.

The health care sector requires support and policy initiatives to enable an effective sectoral response to the risks from climate change and to commence the necessary transition to becoming a low emissions industry. This includes identifying risks to existing infrastructure as well assisting the sector to transition to low carbon operations through the identification of effective strategies to cut emissions and reduce the environmental footprint of health care.

Comprehensive evaluation of health sector risks from climate change is needed to identify existing weaknesses in health and public health systems eg developing or improving early

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<sup>8</sup> Weaver, H. et al. Climate change and Australia's healthcare system, *Australian Health Review*, 2010.

warning systems of environmental threats; developing plans to protect health; and formulating responses to environmental disasters such as floods, hurricanes, bushfires and heatwaves.

Improved risk assessment practices and the wider utilization of health impact assessments is needed to evaluate risks to health from a range of drivers, such as extreme weather, food insecurity, population displacement, reduced water quality and declining quality of other ecosystem services. Understanding risks to specific populations will assist planning and responses and help inform community adaptation and response plans. Health impact assessment is important to inform policy makers and the community about health impacts at a local, national and international level.

This knowledge will help build motivation for proactive adaptation responses as well as help to build capacity to ensure effective management of ongoing and emerging risks and help strengthen disaster responses.

Given the scale and nature of the threats to health from climate change, the amount of research funding applied to climate and health research in Australia is extremely small. In the decade 2000-2010, just 0.23% of the total funding from the National Health and Medical Research Council was spent on projects related to climate change.<sup>9</sup>

Increasing investment in climate and health research on both adaptation and mitigation is both necessary and urgent.

### **Strengthening health service preparedness and resilience**

The health care workforce is ill prepared to respond to climate change. An effective adaptation plan for health should be looking at ways to assist health professionals to comprehend the implications of climate change for their practice and for societal health and wellbeing. However, little research has been conducted to determine what health professionals do understand about climate change or what resources they require to assist them develop evidence based responses to climate impacts.

Initiatives are needed to improve awareness among those within the existing health professions as well as improve education for future health students about climate change and health.

Healthcare infrastructure itself faces risk from climate change.<sup>10</sup> More information is needed about future demand for health services, likely physical impacts on facilities and their ability to cope with these, strategies to improve coping capacity, associated costs, as well as integrated

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<sup>9</sup> Dr Erica Bell, University of Tasmania, Personal Communication, March 2012.

<sup>10</sup> Carthey, J. Et al. (2009) "Adapting Australian health facilities to cope with climate-related extreme weather events", *Journal of Facilities Management*, 7:1, pp.36 – 51.

disaster plans to ensure health services can continue to function during extreme weather events.<sup>11</sup>

There are many opportunities for the health care sector to respond to climate change in ways that reduce energy use, reduce waste, save money and improve health. The health sector needs to be supported to begin to implement adaptive strategies that will improve its resilience to climate change impacts, improve its capacity to deliver services and to provide an example of leadership in beginning to demonstrate the economic and health benefits of low carbon operations.

Health care providers should be supported to reduce the environmental footprint of the sector in ways that will protect them from future shocks in terms of energy prices, water shortages and resource shortages. Adaptation measures that create a sustainable and resilient healthcare sector will provide ongoing benefits for the community.

A useful guide to evaluating health risk and vulnerability to climate change is the Pan American Health Organisation/ World Health Organisation tool: Protecting Health from Climate Change – Vulnerability and Adaptation Assessment. This is provided as a Supplementary Paper to this submission.

## Recommendations

### The Climate and Health Alliance recommends:

1. The development of a National Plan for Health in Responding to Climate Change (Adaptation and Mitigation).
2. A national community engagement campaign to build understanding about the risks from climate change.
3. The development and implementation of programs to increase awareness among health professionals about the health risks from climate change to assist in developing more effective adaptive responses.
4. A substantial increase in the funding available for climate and health research in Australia, including regional health impact assessments, and a specific emphasis on evaluating the health benefits of effective adaptation and mitigation.
5. Increased investment in research on climate change communication to support translation of evidence into policy action.
6. Improvements in disease surveillance, health risk monitoring, early warning systems, emergency response and disaster preparedness.
7. Improving community resilience through greater investment in health promotion and disease prevention.
8. Evaluation of projected health care demand from climate change; physical impacts on health care infrastructure from climate change; and projected associated costs.
9. Increasing health sector resilience through initiatives to 'green' the health sector.

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<sup>11</sup> Carthey, J. Et al. (2009) "Adapting Australian health facilities to cope with climate-related extreme weather events", *Journal of Facilities Management*, 7:1, pp.36 – 51.



## APPENDIX A

**A Victorian paediatrician shared the following story with CAHA to illustrate the complexity of the challenges associated with protecting health through adaptation to climate change.**

This relates to risks to the agricultural sector, affecting food safety and security; risks to mental and health physical health associated with the inability to access health services; risks from water borne diseases, associated with extreme weather events; and impacts on health services from extreme events, affecting health service provision and public health.

*“Listening to the local ABC this morning...I'm home because the morning patients cancelled due to flooding on the roads.*

*“The local weir is spilling at major flood levels. This is causing power outages which, coupled with road closures, mean local dairy farmers can't milk their herd, and if they can, the milk trucks won't be able to get through.*

*“So their cows will get mastitis. When there is an increase of inflammatory cells in milk, this increases antibiotic use, which leads to lower profits, and creates a problem in dealing with the waste milk. Where do you tip megalitres of milk?*

*“This is just an example of increased risk from food and less food security as more dairy farmers give up - because it's getting too hard. I heard on radio that dairy farmers will lose \$30,000-\$50,000. Along the [location deleted] vegetable growers were quoted as losing \$300,000 from soil, fertiliser and seedlings being washed away, pumps damaged etc. What does all that do to the mental health of those families?*

*“From a personal perspective, I am planning to Skype consult a young patient who is suicidal who can't travel to see me because the roads are cut. Let's hope the power is on at both ends at the appointed hour.*

*“Since 2003 we have had three bushfires that led to patients not being able to get through and nursing homes being emptied to the coast, displacing people in other communities.”*

*“We have also had five floods cutting highways since 2007. I have a classic shot of the flood waters pouring through the toilet block at the entrance to [location deleted]... two of my patients were riding their bikes in it just a short way downstream.*

*“Despite all of above, I think the greatest barrier is the fact that the drought broke. People have moved back to relaxed and comfortable and their values are all around keeping up with the Jones, and worrying about economic issues, instead of caring about the future for their family, their health, and the environment.”*

## APPENDIX B

### Supplementary Papers and Reports (in the order referred to in this submission)

Western Australian Department of Health, *Health impacts of climate change: Adaptation strategies for Western Australia*.

Maibach, E.W. et al. Climate change and local public health in the United States: Preparedness, Programs and Perceptions of Local Public Health Department Directors, *Climate Change and Health*, PLoS One, 3:7, 2008.

Polivka, B. et al. Public Health Nurses' Knowledge and Attitudes Regarding Climate Change, *Environmental Health Perspectives*, 120:3, 2012.

Fritze, J., Williamson, L. and Wiseman, J. *Community Engagement and Climate Change: Benefits, Challenges and Strategies*, Report for Department of Planning and Community Development, Victorian Government, produced by McCaughey Centre for Population Health at the University of Melbourne, in collaboration the Victorian Council of Social Service and Council on the Ageing, Victoria, 2009.

Health Care Without Harm and Health and Environment Alliance, *Acting Now for Better Health*, 2010.

Haines, A. and Dora, C. How the low carbon economy can improve health, *British Medical Journal*, 344, 19 March 2012.

Weaver, H. et al. Climate change and Australia's healthcare system, *Australian Health Review*, 2010.

Carthey, J. et al. Adapting Australian health facilities to cope with climate-related extreme weather, *Journal of Facilities Management*, 2009, 7:1.

Pan American Health Organisation and World Health Organisation, *Protecting Health from Climate Change – Vulnerability and Adaptation Assessment*, 2012.

## **APPENDIX C**

### **Climate and Health Alliance Committee of Management**

Fiona Armstrong (CAHA President and Convenor)  
Erica Bell (Australian Rural Health Education Network)  
Lance Emerson (Australian Research Council for Children and Youth)  
Liz Hanna (Royal College of Nursing, Australia)  
Bret Hart (Alliance for Future Health)  
Ursula King (Australian College of Rural and Remote Medicine)  
Michael Moore (Public Health Association of Australia)  
Elizabeth Reale (Australian Nursing Federation)  
Kristine Olaris (Women's Health East)  
Julia Stewart (CRANApplus)

### **CAHA Organisational Members**

Australian Association of Social Workers (AASW)  
Australian College of Rural and Remote Medicine (ACRRM)  
Australian Council of Social Service (ACOSS)  
Australian Hospitals and Healthcare Association (AHHA)  
Australian Health Promotion Association (AHPA)  
Australian Institute of Health Innovation (AIHI)  
Australian Women's Health Network (AWHN)  
Australian Nursing Federation (ANF)  
Australian Psychological Society  
Australian Research Council for Children and Youth (ARACY)  
Australian Rural Health Education Network (ARHEN)  
CRANApplus  
Doctors for the Environment Australia (DEA)  
Doctors Reform Society (DRS)  
Friends of CAHA  
Health Consumers' Network (Qld)  
Health Issues Centre (HIC)  
Public Health Association of Australia (PHAA)  
Royal College of Nursing, Australia (RCNA)  
Royal Australasian College of Physicians (RACP)  
North Yarra Community Health (NYCH)  
Services for Australian Rural and Remote Allied Health (SARRAH)  
Women's Health East  
Women's Health in the North  
World Vision

### **Expert Advisory Committee**

Dr Erica Bell, University Department of Rural Health, University of Tasmania  
Associate Professor Grant Blashki, Nossal Institute for Global Health  
Associate Professor Colin Butler, College of Medicine, Biology and Environment, Australian National University  
Professor Garry Egger, School of Health & Human Sciences, Southern Cross University  
Professor David Karoly, Federation Fellow in the School of Earth Sciences, University of Melbourne  
Professor Stephan Lewandowsky, School of Psychology, University of Western Australia  
Dr Peter Tait, RACGP General Practitioner of the Year 2007, Alice Springs  
Professor Anthony Capon, National Centre for Epidemiology and Population Health, Australian National University  
Professor Simon Chapman, Professor of Public Health, University of Sydney  
Dr Susie Burke, Senior Psychologist, Public Interest, Environment & Disaster Response, Australian Psychological Society  
Dr Marion Carey, Senior Research Fellow, Monash Sustainability Institute.