CLIMATE AND HEALTH ALLIANCE

Submission to the Strategic Review of Health and Medical Research

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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 24 organisational members, representing health care professionals from a range of disciplines, health care service providers, institutions, academics, researchers, and consumers.

The Climate and Health Alliance has a committee of management to guide its work, and an expert advisory committee with senior health and climate researchers to ensure the positions of the Alliance reflect an evidence-based approach.

For more information about the membership and governance of the Climate and Health Alliance, please see Appendix A. For further information see www.caha.org.au

Overview

The Climate and Health Alliance will make a brief submission addressing the following *Terms of Reference* for the Review:

5. In relation to "likely future developments in health and medical research, both in Australia and internationally".

8. In relation to the need "to improve national and international collaboration between education, research, clinical and other public health related sectors to support the rapid translation of research outcomes into improved health policies and practices".

12. In relation to the need for "alignment between Australia's health and medical research activities and the determinants of good health, the nation's burden of disease profile and national health priorities".

13. With respect to the opportunities for "Australia's health and medical research activities to assist in combating some of the major barriers to improved health globally".

Summary

The Climate and Health Alliance is concerned that the Australian health and medical research agenda is failing to reflect the risks posed to human health posed by unprecedented global environmental change from unmitigated global warming and climate change.

The risks to health from climate change are not simply collateral damage - health is not a tradeable commodity that we can do without.[1]

Human health, and human society, depend on the health of the biosphere and on a stable climate, the characteristics of which were present on Earth for the last 12,000 years, during the Holocene, a period during which human civilisation flourished, until around 50 years ago. Anthropogenic activities over the last 150 years have changed those conditions significantly, and if we do not alter our present course, may lead to irreversible changes that are incompatible with human civilisation.[2]

The primary determinants of health are those processes of nature on which humans are entirely dependent – the production of clean air, soil and water, the supply of food and fibre and natural protection from pathogens. The sustainability of population health depends on the effective functioning (and protection) of these processes.

These determinants of health are fundamentally threatened by human activities. Our national health and medical agenda must reflect the nature, scale and urgency of these threats and focus on their mitigation if we are to protect health and preserve human civilisation.

These determinants of health are currently being overlooked in public policy development. There is an important role for health and medical research to make more explicit the relationship between human health and broader determinants of population health in relation such as healthy ecosystems, biodiversity, energy production, waste, transport, food and agriculture, industrial practices, water use, and citizen engagement, for example.

Australian policymakers, the health sector, and the Australian community are seriously underprepared for the predicted approaching environmental crisis, which will likely have severe implications for economic and social stability, and pose unprecedented risks for health and wellbeing.

Effective health protection is possible, but the window is rapidly closing. The recent Climate Commission report on climate change and health says decisions made between now and 2020 will determine the severity of climate change our children and grandchildren will experience – and the longer we wait to act, the more serious the consequences.[3] And if we act quickly, the

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[1] McMichael, A. and Butler, C. Climate change and human health: recognising the really inconvenient truth, *Medical Journal of Australia*, Volume 191 Number 11/12, 7/21 December 2009.

[2] Hansen, et al. Target Atmospheric CO2: Where should humanity aim? *The Open Atmospheric Science Journal*, 2008, 2, 217-231.

[3] Climate Commission, *The Critical Decade: Climate change and health*, November 2011.

health benefits from effective mitigation could substantially outweigh the costs of many mitigation policies.[4]

Community engagement and behaviour change strategies are important aspects of the societal response to climate change but have to date been too little investigated. Research is also needed to support advocacy efforts to convey evidence to policy and decision makers.

Introduction

The Climate and Health Alliance welcomes the opportunity to contribute to the national health and medical research agenda and congratulates the federal government on initiating this review to ensure Australia continues to produce world class health and medical research to enhance the health and wellbeing of the Australian and global community.

Research is one of the Climate and Health Alliance's key priorities and CAHA is currently developing a Position Statement to support its advocacy on this topic. **This expected to be available by mid 2012.**

In this submission, CAHA seeks to highlight the importance of health and medical research in relation to the risks posed to human health from climate change and environmental degradation.

As identified in the international medical journal *The Lancet* in 2009, "climate change is the biggest global health threat of the 21st century".[5]

A 2011 report from the Australian Institute of Health and Welfare indicates that 24% of the global burden of disease is due to modifiable environmental factors. The same report noted that a lack of data in Australia means that the health implications of many environmental factors have not yet been fully evaluated.[6]

Despite the serious implications for the health of people in Australia from rapidly rising global mean temperatures driving changes to the climate, and ecological degradation due to human factors, the national health and medical research agenda has however failed to allocate resources to mitigating these threats.

The Australian and global population face the most serious threat to global public health in human history, with global mean temperatures now predicted to rise by three degrees by the middle of this century. Yet little research has been conducted to understand the implications of a temperature rise of this magnitude on the Australian community.

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[4] Campbell-Lendrum, D. et al. Health and climate change: a roadmap for applied research, *The Lancet*, Vol 373 16 May 2009.

[5] Costello, A. et al. Managing the health effects of climate change, *The Lancet*, Vol 373, 16 May 2009.

[6] Australian Institute of Health and Welfare 2011. *Health and the environment: a compilation of evidence*. Cat. no. PHE 136. Canberra: AIHW.

There is little research on the links between anticipated population growth and population health, and almost no research on the likely impacts of climate change, ecosystem disruption, or energy and resource scarcity on births and deaths.

While there have been laudable efforts to investigate strategies for adaptation from unavoidable climate change, a focus on ***mitigation*** has been demonstrably absent from the climate and health research agenda in Australia.

Building public support for the implementation of policies to reduce emission and protect health from unmitigated climate change would be considerably enhanced by research that investigated the opportunities to protect and promote health by the implementation of strategies to reduce emissions.

The development of effective national and regional responses to the potentially dramatic impacts of food and water insecurity, energy poverty, unpredictable extreme weather events, increasing incidence of vector borne disease, amplification of chronic illnesses, social disruption and civil disorder that may manifest in coming decades would be assisted by the development of a range of scenarios that explore the implications for human health from all these pressures.

It is argued that the Australian policymakers, the health sector, and the Australian community are seriously underprepared for the predicted approaching environmental crisis, which will likely have severe implications for economic and social stability, and pose unprecedented risks for health and wellbeing.

It is to investigate the implications of these risks to health and the development of national responses to prevent them that, the Climate and Health Alliance argues, a considerable proportion of the national health and medical research agenda should be devoted in the coming decade.

In addition to researching the health risks from climate change, the health and medical research agenda should investigate and evaluate the implications for health from the implementation of strategies to reduce emissions.

TOR 5. "Likely future developments in health and medical research, both in Australia and internationally"

As climate change progresses and climate impacts become more severe, it is likely that climate and health research will shift from documenting the types and severity of risk to minimizing harm to health from climate change.

Much of the climate and health research agenda to date has focused on the "identification, characterisation and quantification of the linkages between climate and health",[7] but there has

[7] World Health Organisation, *Protecting health from climate change: global research priorities*, 2009.

been less of an emphasis on applied research to reduce the associated health risks or in knowledge translation to ensure that evidence is translated into policy action.

An important focus of future research must surely be in relation to translating the extensive body of knowledge that exists about climate change and health into policy responses that reduce the unprecedented risks to health and society.

As is now apparent in both the US and Australia in particular, there are many challenges in communicating the science of climate change to the public and to policymakers, and in the development of evidence based policy responses.

Community engagement and behaviour change strategies are important aspects of the societal response to climate change but have to date been too little investigated. Research is also needed to support advocacy efforts to convey evidence to policy and decision makers.

Greater efforts need to be made through health and medical research to understand the complexities associated with cognitive and psychological responses to climate change in order to facilitate the necessary political support for the development of effective programs to mitigate and adapt to climate change to protect health.

An important part of this agenda is the need for national and international health and medical research to contribute to the emerging global body of knowledge regarding the economic costs and benefits of mitigation and adaptation decisions.

The research available to date suggests unmitigated climate change will substantially increase financial costs to health services, but that health co-benefits from mitigation could substantially outweigh the costs of many mitigation policies.[8]

These findings are likely to contribute to public support for mitigation and adaptation policies, and help reduce further risks to health from unmitigated global warming.

Other emerging issues in international research are likely to include the increasing evidence about the links between inequality and poor health outcomes.[9]

As climate change is likely to exacerbate both inequality and risks to health, the national health and medical research agenda should include a strong focus on investigating the links between inequality and health, and the identification of pathways to reduce societal inequality as a causal factor in poor health.

[8] Campbell-Lendrum, D. et al. Health and climate change: a roadmap for applied research, *The Lancet*, Vol 373 16 May 2009.
[9] Wilkinson, R. and Pickett, K. *The Spirit Level*, Penguin, 2009.

TOR 8. The need to "improve national and international collaboration between education, research, clinical and other public health related sectors to support the rapid translation of research outcomes into improved health policies and practices"

There is a great need to better coordinate national and international research into the health effects of climate change and the health benefits of mitigation in order to develop interventions to reduce adverse effects and facilitate effective adaptation to climate change.

Managing the health effects of climate change and realising improvements to health from strategies to cut emissions requires the establishment of integrated research programs which are interdisciplinary and multi-agency.

The complex nature of climate and health research requires the involvement of a broad spectrum of researchers from diverse backgrounds – from research scientists to epidemiologists and physicians to environmental engineers and community planners. Research programs should be flexible enough to accommodate interdisciplinary collaboration and responsive to enable them to respond to new information.

Greater emphasis is needed on developing and maintaining interdisciplinary and inter-institutional collaborations, and applying the resources and expertise of all of the relevant disciplines, including climatology, modeling, environmental science, risk assessment, public health, economics, and communications and education to these challenges.

Many disciplines such as ecology, social science, economics, geography, behavioral psychology, transport, water, and energy are also relevant to climate and health research and decision making.

Engaging effectively in interdisciplinary research will require capacity building, especially in linking climate and health sciences with agencies from other sectors and professionals from other disciplines.

The establishment of an international catalogue of climate change impacts, research needs and projects and outcomes, as well as existing national and international collaborations would help improve coordination and dissemination of findings and research outcomes.

Collaboration between education, research, clinical and other public health related sectors is needed to support translation of research outcomes into policy and practice. Establishing mechanisms for cross disciplinary collaboration and information exchange on either specific issues or for specific geographical areas can help foster understanding between different stakeholders.[10]

[10] World Health Organisation, *Protecting health from climate change: global research priorities*, 2009.

TOR 12. The need for "alignment between Australia's health and medical research activities and the determinants of good health, the nation's burden of disease profile and national health priorities"

Given the complexity and expansive scale of the health impacts of climate change, it is vital that Australia's health and medical research agenda takes a broad approach to identifying the determinants of good health, and considers the implications of climate change on the national burden of disease profile and national health priorities.

Each of the burdens of disease identified in the current National Health Priority Areas are likely to be amplified and exacerbated by climate change.

More significantly however, the broader determinants of health are currently being overlooked in public policy development. There is an important role for health and medical research to make more explicit the relationship between human health and broader determinants of population health in relation such as healthy ecosystems, biodiversity, energy production, waste, transport, food and agriculture, industrial practices, water use, and citizen engagement, for example.

Addressing this would require a revision of national health priorities to achieve greater alignment between national health and medical research activities and the determinants of good health.

One of the major determinants of human health is that of a healthy environment, and the health of ecosystems that provide us with clean air, soil and water. All of these are threatened by climate change; therefore protecting health into the future will depend on the extent to which we protect our natural ecosystems.

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.

Research is needed to support the health care sector respond 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 minimise the environmental footprints of health care service providers and healthcare institutions.

Ongoing research is needed to strengthen existing weaknesses in health and public health systems eg improving early warning systems of environmental threats; developing plans to protect health; and formulating responses to environmental disasters such as floods, hurricanes, bushfires and heatwaves. This knowledge will help to build capacity to ensure effective management of ongoing and emerging risks as well as strengthen disaster responses. Regional risk based research is important to assist in the development of effective responses of services and communities at a local level.

The health care workforce is ill prepared to respond to climate change. An effective health and medical research agenda 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.

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.

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.

Research conducted by Associate Professor Erica Bell at the University of Tasmania's Rural Health Department is investigating the ways in which deficits in current adaptation policy and practice, including for rural communities, are linked to the values and systems that shape research production.

She has found that: *'Australia's Health and Medical Research Council, administering the climate and health research funding program for one of the world's most climate-vulnerable developed countries, spends around 4% of its funding on health services research. Between 2000 and 2010 a total of $13,081,934 had been committed for all grants with any relationship to climate change as specified by the chief investigators leading individual projects. This represents a tiny 0.23% of all NHMRC committed funding (a total of $5,572M) for biomedical and health research in the same period.'*"

The national burden of disease is likely to significantly affected by climate change. Existing diseases are likely to be amplified by rising temperatures and other disease burdens will emerge. Climate sensitive infectious diseases are likely to increases 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.[11]

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

[11] McMichael T., Montgomery, H. and Costello, A. Health risks, present and future, from global climate change, *British Medical Journal*, 19 March 2012.

According to the recent OECD *Environmental Outlook to 2050*, increases in air pollution from ground level ozone amplified by increasing global temperatures will contribute to an increasing burden of respiratory disease, for example.

Premature deaths from ground-level ozone expected to double worldwide by 2050, with OECD countries particularly vulnerable.[12] While only one example, this serves to highlight the changing nature of disease burdens in response to climate change and the need for health and medical research agenda to be responsive to these changes.

TOR 13. The opportunities for "Australia's health and medical research activities to assist in combating some of the major barriers to improved health globally".

In its 2009 report on global research priorities for climate and health, the World Health Organisation said: "*Research on climate change and health must be placed more firmly within the overall context of improving global health, and health equity, rather than being considered as a stand-alone issue*."[13]

As a wealthy country, but one extremely vulnerable to climate change, with a large land mass, highly variable climate, water insecurity and a recent history of health problems following catastrophic weather events, Australia should see itself as a leader in the field of climate-associated health research.

The negative health, environmental and economic effects of climate change does and will affect the entire global population, but will always be greatest for those who have made least contribution to its cause and have least access to the world's resources. The Stern report highlighted the risk of economic collapse, environmental displacement, migration, increasing urbanization and conflict which will disrupt the lives of many, particularly the poor.[6,7] Many low-income countries and groups that are most vulnerable to the health effects of climate change have the weakest research base.

There is strong agreement internationally that research on the health risks from climate change must be a core element of efforts to improve health globally.

The roadmap for applied research in the Lancet in 2009[14] and the Australian National Adaptation Research Plan - Human Health,[15] the American Public Health Association,[16] and leading international climate and health researchers[17] all agree that research to reduce the

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[12] Organisation for Economic Cooperation and Development, *Environmental Outlook to 2050*, March 2012.
[13] World Health Organisation, *Protecting health from climate change: global research priorities*, 2009.
[14] Campbell-Lendrum, D. et al. Health and climate change: a roadmap for applied research, *The Lancet*, Vol 373 16 May 2009.
[15] National Adaptation Research Plan – Human Health – of the National Climate Change Research Facility, ANU.
[16] American Public Health Association, *Climate change: Mastering the Public Health Role*. APHA. 2011.
[17] McMichael, A.J. *Population health prospects in Asia*, EastAsia Forum, 23 Feb 2012.

direct effects of climate change and improve should be part of a collaborative global health improvement program.

The Lancet Roadmap for Applied Research (2009) highlights the importance of developing nations assisting the low-income countries to build interdisciplinary research capacity in climate and health, particularly those that are most vulnerable to the health effects of climate change and have the weakest research base.

While this requires investment and resources, as the authors point out: the necessary investment will be "**very small** compared with current investment in climate research, **marginal** compared with the economic implications of adaption and mitigation decisions, and **trivial** compared with the potential health consequences of unmanaged climate change or poorly designed climate policies".[18]

Recommendations

The Climate and Health Alliance recommends:

1. The establishment of a national health priority related to environmental protection, given the current and predicted threats to natural ecosystems and biodiversity, the essential underpinnings of human health and wellbeing
2. A substantial increase in the funding available for climate and health research in Australia, including a specific emphasis on mitigation research to evaluate the health consequences of unmitigated climate change as well as evaluating the health benefits of effective action for mitigation
3. The establishment of an international catalogue of climate change impacts, research needs and projects and outcomes, as well as existing national and international collaborations to help improve coordination and dissemination of findings and research outcomes
4. Increased research on climate change communication to support translation of evidence into policy action
5. Expanding health and medical research programs to support interdisciplinary research in developing nations to support adaptation and climate change response strategies

[18] Campbell-Lendrum, D. et al. Health and climate change: a roadmap for applied research, *The Lancet*, Vol 373 16 May 2009.

APPENDIX A

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)
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Australian Research Council for Children and Youth (ARACY)
Australian Rural Health Education Network (ARHEN)
CRANA*plus*
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)
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