National Climate Change and Health Research Priorities

Briefing Paper

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About the Climate and Health Alliance

The Climate and Health Alliance (CAHA) is a national alliance of organisations and people in the health sector working together to raise awareness about the health risks of climate change and the health benefits of emissions reductions. As its name suggests, CAHA is concerned with the health threats from climate change, and the organisation works to raise awareness of those risks and advocate for effective societal responses, including public policies, to reduce risks to health.

Membership of the CAHA includes a broad cross section of the health sector with 27 organisational members, representing hundreds of thousands of health care professionals from a range of disciplines, health care service providers, institutions, academics, researchers, and health consumers.

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.

CAHA has produced a significant number of reports and publications to assist policymakers and to inform health stakeholders and the wider community. These include the National Strategy on Climate, Health and Well-being for Australia in 2017; the preceding Discussion Paper in 2016; the joint report Healthy Investments (with Doctors for the Environment) in 2016; the seminal report Coal and Health in the Hunter: Lessons from One Valley for the World in 2015; the multi-stakeholder Joint Position Statement and Background Paper on Health and Energy Choices in 2014; the joint report 'Our Uncashed Dividend' (with The Climate Institute) in 2012 on the health benefits of reducing greenhouse gas emissions. CAHA conducted a national Roundtable on the Health Implications of Energy Policy in 2013 and prepared a Briefing Paper on the same topic.

CAHA produced a film on the risks to health and climate from coal and gas, the Human Cost of Power in 2013; and has conducted many innovative and ground breaking public events, including the Healthcare Environmental Sustainability Forum (with Western Health and Institute for Hospital Engineers Australia) in 2017 and 2016; the Our Climate Our Health Seminar in 2015, featuring an innovative thought experiment: Imagining 2030 as a healthy low carbon world; a Public Seminar on Protecting Health from Climate Change in 2014 (jointly hosted with University of NSW); and the national Forum on Climate and Health: Research, Policy and Advocacy in 2013. CAHA also contributes to many conferences, community dialogues, and forums, both nationally and internationally on these issues.

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

Background

> ***"Australia now lags behind many international efforts in linking climate change and health, and an initiative to reinvigorate this interdisciplinary public health area is badly overdue."*** [*1∞]

Climate change poses significant immediate, medium-term and long-term risks to the health of Australians and communities around the world. [1,2,3,4]

Despite the substantial body of scientific evidence highlighting these risks, and growing evidence that climate change represents a 'health emergency'[5] 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 support a research agenda that will enable the development of 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.

This requires a multidisciplinary research agenda across health, energy, environment, transport, planning and infrastructure.

Australia has provided very limited funding to research investigating the impact of climate change on human health despite the area being identified government and NHMRC as a priority 25 years ago.

It is vital that Australia invests in building health and climate research capacity to evaluate specific health threats, priority needs, and to monitor trends and opportunities for maximising multi-sector benefits.

In contrast to global efforts, Australian research on climate change and human health has failed to maintain momentum, particularly since 2014, largely due to the lack of funding from National Health and Medical Research Council in this field.

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.[6]

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.[7]

[1∞] UNSW NEWS, Research funding neglects health impacts of climate change, 1 February 2017. Available at: https://med.unsw.edu.au/news/research-funding-neglects-health-impacts-climate-change

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 world. The aligned issue of climate change and planetary health has been recognised in a research agenda supported by the Wellcome Trust, however this is yet to be supported by a well-resourced research agenda in Australia.

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.[5]

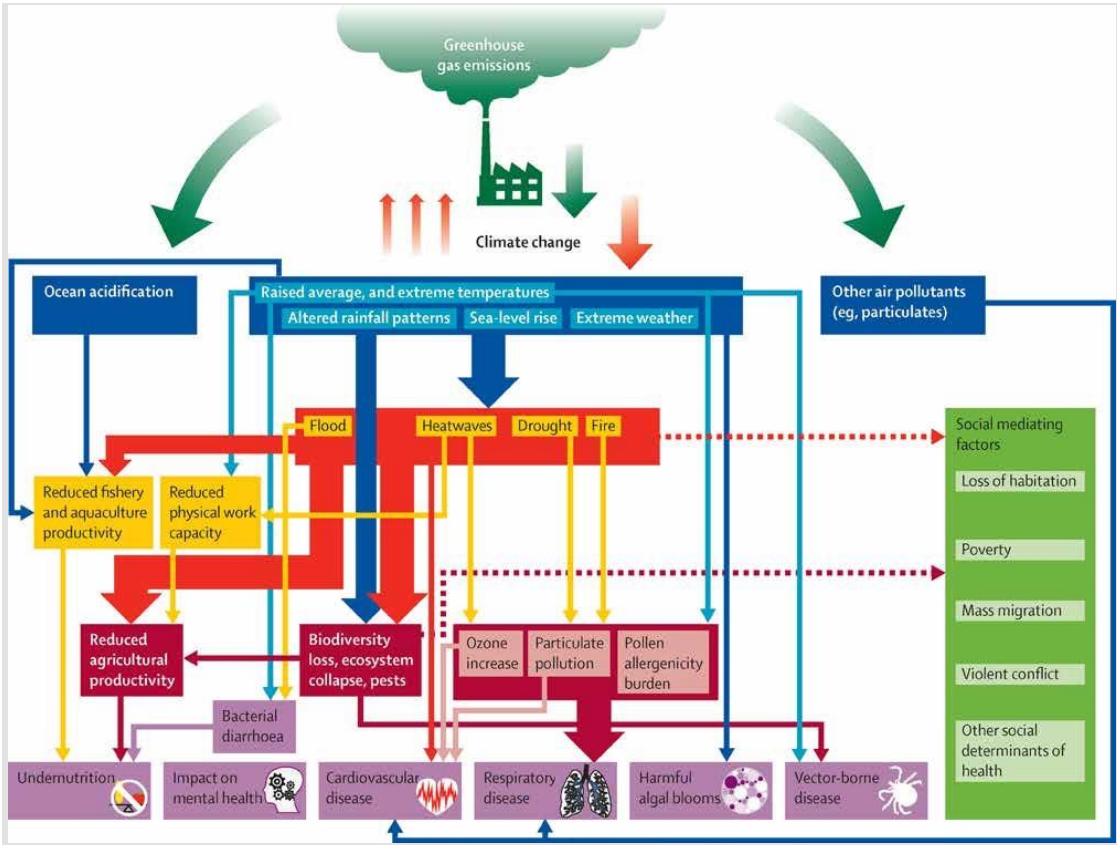

Figure 1: An overview of the health impacts of climate change. Source: The Lancet Commission, 2015.[5]

Australia is recognised as one of the developed nations most vulnerable to the impacts of climate change.[8] 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.[9] In Australia, reduced productivity due to extreme heat days already represents an economic burden of over AUD$8 billion annually.[10]

Climate change is causing a dramatic increase in the incidence and severity of extreme weather events causing natural disasters such as bushfires and floods. The economic costs associated with the health impacts of these events is immense – for example, 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.[11]

Research Rationale

Australia's unique geography and climate means that many of the climate-related health challenges are also unique. Australian specific research on climate change and health is required to understand the regionally diverse climate vulnerability among high risk sub-populations, the distinct pathways of impact and range of health threats. Some progress has been made, but efforts have recently stalled, and left a shortfall in climate-health research expertise.

The economic implications of the personal and population-wide health impacts of climate change in Australia are not well established. Failure to include these full costs distorts decisions made solely on limited economic information and leads to cost shifting and deterioration of Australia's capacity. Full economic accounting of health implications of energy and transport options is urgently needed to inform rational decision making. This is an urgent area of research, as is evaluating the health impacts associated with the cost of damage to water supplies, land productivity under climate change, and a range of adaptation and mitigation options. Food, water and clean air are fundamental necessities of good health, and safeguarding these underpins the health, viability and productivity of communities across the nation.

Additional research is required to trial and evaluate adaptation and resilience building options across the major health risks. There is a need to monitor ongoing health relevant climate changes and guide health policy and program development, implementation and efficacy. Development of climate relevant indicators to support surveillance, monitoring and assessment of health risks, and equally, to track the co-benefits of climate change mitigation policy and strategies, is therefore required. Such knowledge is critical to identify system inefficiencies and deliver the necessary evidence to promote broader uptake of successful strategies. Australia's performance on this critical issue will be judged in the forthcoming evaluation by the Lancet Countdown, a global project which will report annually on the performance of nations in tackling the health impacts of climate change.

The emergence of climate-related morbidity and mortality is already apparent in Australia, with modest warming of 1°C, and is projected to markedly escalate with ongoing warming. Building an effective national health protective response requires a

deep understanding of the dynamic situation. Ongoing research capacity and infrastructure needs to be secured through the establishment of a stable national level funding stream for climate and health research.

Priorities in context

Research is a core element of the *Framework for a National Strategy on Climate, Health and Well-being for Australia*.[12] Published in 2017, the Framework is a world first initiative by a coalition of leading health experts and organisations, along with federal parliamentarians, to set out 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.

This Framework is the result of extensive consultation with Australia's health stakeholders, including professional health and hospital groups, health leaders, academics, scientists, parliamentarians and policymakers during 2016 - 2017. Consultation revealed deepening concerns about climate change within the health community and the desire for federal leadership for urgent action. The yawning gap between the growing body of scientific evidence on the broad scale human health impacts of climate change, and the tardy development of effective and specific public policy responses has prompted the national and global health and medical community to step forward to fill this gap.

Figure 2: Areas of Policy Action in the *Framework for a National Strategy on Climate, Health and Well-being for Australia,* CAHA, 2017.[12]

The Framework for a National Strategy on Climate, Health and Wellbeing calls for enhancing 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 the Medical Research Future Fund (MRFF).

It also calls for funding to support a national climate change research network to support the investigation of localized state and regionally-based climate health challenges. This would ensure the development of a coordinated research agenda and support the development of research expertise to address major gaps and challenges associated with the impacts of climate change on population health and the health sector itself. This should build on previous work of the National Climate Change Adaptation Research Facility to provide a national comprehensive assessment of the health risks of climate change, updated on a regular basis to inform the development, implementation and evaluation of national mitigation and adaptation strategies.

Research Priorities

The following research priorities have been identified during the consultation for the Framework for a National Strategy on Climate, Health and Well-being for Australia during 2016-2017 and during further consultation during 2018-2019 with climate and health researchers, academics, experts, and policy advocates

1. Assessment of the **economic value of health benefits associated with health-promoting climate change mitigation and adaptation strategies** (e.g. associated with improved air quality, increased uptake of active and public transport options, and other low carbon and zero carbon strategies;
2. **Assessment and forecasting of climate change - related health impacts and environmental -related health impacts across Australia's climatic zones** to inform resource allocation and climate adaptation strategies;
3. Identifying **near and long-term health threats from climate change**, to inform the development and evaluation of health protecting adaptation strategies;
4. **Multidisciplinary research programs** to identify relationships between chronic disease and urban design, energy and water security, transport and other sectors, and identify potential solutions;
5. Further **assessment of the carbon and environmental impacts of the healthcare sector**, including regular evaluation of total greenhouse emissions of healthcare operations, and identification of initiatives to support the sector's transition to low carbon operations;
6. Assessment of the most **effective interventions to mitigate risks from climate-sensitive infectious diseases** (for example vector-borne and zoonotic diseases);
7. Identifying, documenting and monitoring the **psychological and social impacts of the ongoing threat of climate change** and associated issues relating to indirect exposure and strategies to minimise these impacts, particularly among

vulnerable population groups, including mental health impacts of climate change in regional communities;

8. **Assessment of the psychological impacts of climate change on mental health in relation to children and young people**;
9. Establishing a **national environmental health surveillance system**[2*] which includes climate-related indicators;
10. Providing continued investment in and support for the **National Notifiable Diseases Surveillance Network**, including a strong focus on disease outbreaks which are likely to increase in frequency and severity as a result of climate change (for example, vector-borne and zoonotic disease outbreaks);
11. Expanding investment in **vulnerability mapping programs to identify and map vulnerable populations and infrastructure** to inform climate adaptation strategies and emergency response plans;
12. Evaluating the **health and economic negative effects on occupational health and productivity caused by increasing daily heat levels** and during heat waves.
13. **Assessment of the impacts of climate change on Australia's ageing population** and implications for health services planning and emergency responses;
14. **Assessing the likely impacts of climate change on determinants of health** (such as housing, employment, food security and the built environment), including their associated costs; identifying actions to mitigate these impacts and quantifying their health benefits;
15. **Assessment of regional health impacts** (e.g. Pacific) and potential flow on effects for migration and regional security;
16. **Evaluation of best strategies for engaging communities in building resilience** and facilitating mitigation and adaptation.
17. **Evaluation of best strategies for getting health and climate change on the policy agenda** i.e. determining successful political advocacy activities.
18. **Assessment of climate change related inequities in health based on indigeneity, ethnicity and language.**
19. **Establishment of a sustainable system to support medium- and long-term climate and health research**. Features of the system may include but are not limited to the establishment of national research priorities, funding streams, research infrastructure/s, Centre/s for Research Excellence, climate change research network, researcher career development pathways etc.
20. **Multi-disciplinary and inter-disciplinary research on food and waste including sustainable agricultural and food systems research**.
21. **Identification and documentation of the changing nature of work and workplaces** due to climate change impacts.

[2*] The development 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/.

22. **Assessment and evaluation of housing designs** that minimise carbon emissions and protect/promote health in different settings, particularly regional and rural settings;
23. **Assessment of the specific needs of rural and remote communities** in relation to climate change mitigation and adaptation;
24. **Expansion of health and nature research agenda** to include climate change issues;
25. **Health service research and planning for climate change mitigation and adaptation** in the distinct areas of a) health service infrastructure b) service design and c) workforce;
26. **Investigation into the characteristics of bio-sensitive societies** including research on Indigenous knowledge systems.

References

1 Australian Academy of Science, 2015, *Climate change challenges to health: Risks and opportunities. Recommendations from the 2014 Theo Murphy High Flyers Think Tank*. Canberra: Australian Academy of Science.

2 Bambrick, H, Dear, K, Woodruff, R, Hanigan, & McMichael, A, 2008, *The impacts of climate change on three health outcomes: temperature-related mortality and hospitalisations, salmonellosis and other bacterial gastroenteritis, and population at risk from dengue*. Garnaut Climate Change Review. Canberra: Commonwealth of Australia.

3 Hughes, L, & McMichael, A 2011, *The Critical Decade:Climate change and health*. Canberra: Department of Climate Change and Energy Efficiency, Commonwealth of Australia.

4 Smith, KR, Woodward, A, Campbell-Lendrum, D, Chadee, DD, Honda, Y, Liu, Q., Olwoch, J.M., Revich, B, Sauerborn, R, 2014, 'Human health: impacts, adaptation, and co- benefit' In: *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects*. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Field, C.B., Barros V.R., Dokken, D.J., Mach K.J., Mastrandrea, M.D., Bilir, T.E., Chatterjee, M., Ebi, K.L., Estrada, Y.O., Genova, R.C., Girma, B., Kissel, E.S., Levy, A.N., MacCracken, S., Mastrandrea, P.R., White, L.L. (eds.)]. Cambridge, United Kingdom and New York, USA; Cambridge University Press, pp. 709-754.

5 Watts, N, et al., 2015, **'**Health and climate change: policy responses to protect public health,**'** The Lancet Commissions. *Lancet,* 386, 10006, pp. 1861–1914.

6 McMichael, A, Friel, S, Nyong, A, & Corvalan, C. 2008, **'**Global environmental change and health: impacts, inequalities, and the health sector,**'** *British Medical Journal*, 7637, p. 19.

7 Watts, N, et al., 2017, **'**The Lancet Countdown: tracking progress on health and climate change,**'** *Lancet*, 389, 10074, pp. 1151–1164.

8 Paun, A. et al. 2018. Fragile Planet: Scoring Climate Change Risks Around the World, HSBC Global Research, March 2018.

9 Steffen, W, Hughes, L, Alexander, D & Rice, M, 2017, **'**Cranking Up The Intensity: Climate Change and Extreme Weather Events**',** *Climate Council of Australia*, Available at: https://www.climatecouncil.org.au/uploads/1b331044fb03fd0997c4a4946705606b.pdf

10 Zander, K, Botzen, W, Oppermann, E, Kjellstrom, T, & Garnett, S 2015, **'**Heat stress causes substantial labour productivity loss in Australia**'**, *Nature Climate Change*, 5, 7, p. 64.

11 Deloitte Access Economics 2015, **'**The economic cost of the social impact of natural disasters,**'** *Report for Australian Business Roundtable for Disaster Resilience & Safer Communities*.

12 Horsburgh, N, Armstrong, F. & Mulvenna, 2017, *A Framework for a National Strategy on Climate, Health and Well-being for Australia*. Climate and Health Alliance, June. Available at: http://www.caha.org.au/national_strategy_framework_launch