

Heatwave resilience and impacts

RESEARCH TEAM

Prof Peng Bi, lead researcher, The University of Adelaide

Project duration: 2.5 years

Background

Climate change threatens human health and is increasing the intensity and frequency of natural hazards. Heatwaves are responsible for more deaths in Australia than all other natural hazards combined and disproportionately impact vulnerable populations. The National Heatwave Warning Framework (2022), developed by emergency services, health agencies, the Bureau of Meteorology, and Emergency Management Australia, provides seven-day forecasts to help agencies prepare and issue public warnings. It is essential to understand how the public, media and local governments interpret these warnings and whether they effectively reduce harm from heatwaves.

The full impacts of heatwaves remain poorly documented, with many injuries, mental health effects and indirect costs unrecorded. Without a complete understanding of these impacts, effective planning, response and risk reduction are challenging.

SUPPORTING ORGANISATIONS

The Bureau of Meteorology, Energy Networks Australia, Monash University, The University of Sydney, Australian National University, Charles Sturt University, Virginia Tech, Swinburne University of Technology, WA Health, NT Health, Australian Institute of Health and Welfare, Australian Institute of Health and Safety, Country Fire Service (SA), Australian Bureau of Statistics Resilient South, The University of New South Wales

Project description

This project seeks to:

- explore the efficacy, reach and impact of the national heatwave service which includes the Bureau of Meteorology's decision support and warning products and agency heatwave warnings
- develop a methodology to enable accurate, near real-time mortality reporting from extreme heat events
- explore the full impacts and costs of extreme heat events
- explore the electricity sector's role in community vulnerabilities to extreme heat and opportunities for adaptation.

Intended outcomes

The project will deliver multiple outcomes, including:

1. A national workshop leading to a final report to inform stakeholder agencies on how heatwave warning information is flowing to the community and responders, and its role in driving behaviour change to mitigate risks. This information will inform more effective heat risk messaging in the community, particularly among vulnerable groups such as CALD and First Nations communities, outdoor workers, older individuals and people with existing health conditions
2. A comprehensive exploration of real-time mortality and ambulance usage during heatwaves to inform resource allocation and identify barriers to the prompt availability of data. Findings will inform a roadmap for the operationalisation of a real-time mortality surveillance system during heatwaves.
3. A methodology that applies to all jurisdictions and enables the estimation of future tangible and intangible heat-attributable costs in the context of a warming climate. Projections will be made using different climate change scenarios, data on demographic changes and levels of community adaptation.
4. Enhanced understanding of the cascading impacts of electricity supply failure, including excess morbidity and mortality and vulnerability maps development across the nation. Implementation of the developed methodology will inform planning and adaptation measures to enhance resilience in the context of a warming climate.

Translation and implementation potential

Key stakeholders will be actively engaged throughout the project to enhance the translation and implementation potential of the research findings.

National workshops will be held to enable meaningful input from stakeholders and community members into the development of policy suggestions.

Further information

For full project details head to: <https://www.naturalhazards.com.au/research/research-projects/heatwave-resilience-and-impacts>

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