Building health system resilience to climate change: lessons from cardiovascular disease

In December 2023, the Australian Government released its first National Health and Climate Strategy.[1] Acknowledging that the health effects of a changing climate are already being felt across the country, this strategy set out a whole-of-government plan for addressing the health and wellbeing impacts of climate change. A core component of this strategy is health system resilience — that is, building capacity to anticipate, understand, plan for, and respond to escalating climate impacts on health, wellbeing, and the delivery of care.

What does it mean in practice to build health system resilience to climate change? In this issue of the *MJA*, Stewart and colleagues[2] present findings from a randomised controlled trial that provides an instructive example. Their research was premised on the recognition that seasonal and acute weather conditions are drivers of cardiovascular events. Climate change is expected to generate more weather extremes that will, in turn, provoke more cardiovascular events. They hypothesised that a tailored, multifaceted intervention designed to build resilience to external provocations to health would increase days alive and out of hospital among people with multimorbid heart disease, compared with standard care. Their intervention aimed to address the bio-behavioural vulnerability to environmental challenges to cardiovascular health, including participant behaviours, home environmental conditions, clinical factors, and socio-economic resources.

The study did not find statistically significant overall differences between the intervention and standard care groups for the primary outcome (days alive and out-of-hospital) and all-cause hospital readmission and death. However, hospital readmissions were more frequent after dynamic weather events, including storms and acute temperature changes. After adjusting for timing of follow-up, the intervention was associated with significantly fewer days of hospital stay during the summer months. These findings, the authors contend, "challenge the assumption that the management of people with chronic heart disease should be the same all year round" and provide a compelling basis for future research.

Writing in the editorial linked to this research,[3] Hunter explains that "despite its negative findings, this trial illustrates a critical inflection point in how we conceptualise health and disease in the context of an increasingly volatile climate" and that "the biopsychosocial model must evolve to more explicitly acknowledge the foundational relationship between human health and the environment".

The National Health and Climate Strategy represents a positive move in this direction, as does the incorporation of climate change, environmentally sustainable health practice, and planetary health into medical school curricula,[4] and the development of climate change and health adaptation plans by Australian states and territories.[5-7] Yet there is still clearly a long way to go, with recent Australian research[8] indicating that despite health system adaptations to extreme weather events resulting in workforce capability, costs, demand, and health outcome benefits, important gaps remain in areas such as financing and access to medicines, and, crucially, "how these elements come together to build health system resilience is unclear". At the *MJA*, we look forward to the opportunity to publish future work that advances our understanding of this important area. ■

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3 Hunter A. Biology–society–environment: a changing paradigm for the changing Australian climate. *Med J Aust* 2025; 223: 75-76.

4 Pendrey CGA, Chanchlani S, Beaton LJ, Madden DL. Planetary health: a new standard for medical education. *Med J Aust* 2023; 219: 512-515. https://www.mja.com.au/journal/2023/219/11/planetary-health-new-standard-medical-education

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7 Victorian Department of Health. Health and Human Services Climate Change Adaptation Action Plan 2022–26. https://www.health.vic.gov.au/environmental-health/climate-change-and-sustainability-in-the-health-sector (viewed June 2025).

8 Legg R, Prior J, McIntyre E, et al. Health system adaptation to extreme weather events in Australia: a scoping review. *J Clim Change Health* 2025; 22: 100443. ■