

Methods of assessing future health care costs in a changing climate: A case study of heatwaves and ambulance dispatches in Tasmania, Australia

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DOI: 10.1029/2023GH000914

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Background

Anthropogenic climate change is causing a rise in global temperatures, with this trend projected to increase into the future. Rising temperatures result in an increase in the frequency and severity of heatwave events, with an associated increase in poor health outcomes. This places an increasing strain on health care services. However, methods calculating future health care costs associated with this trend are poorly understood.

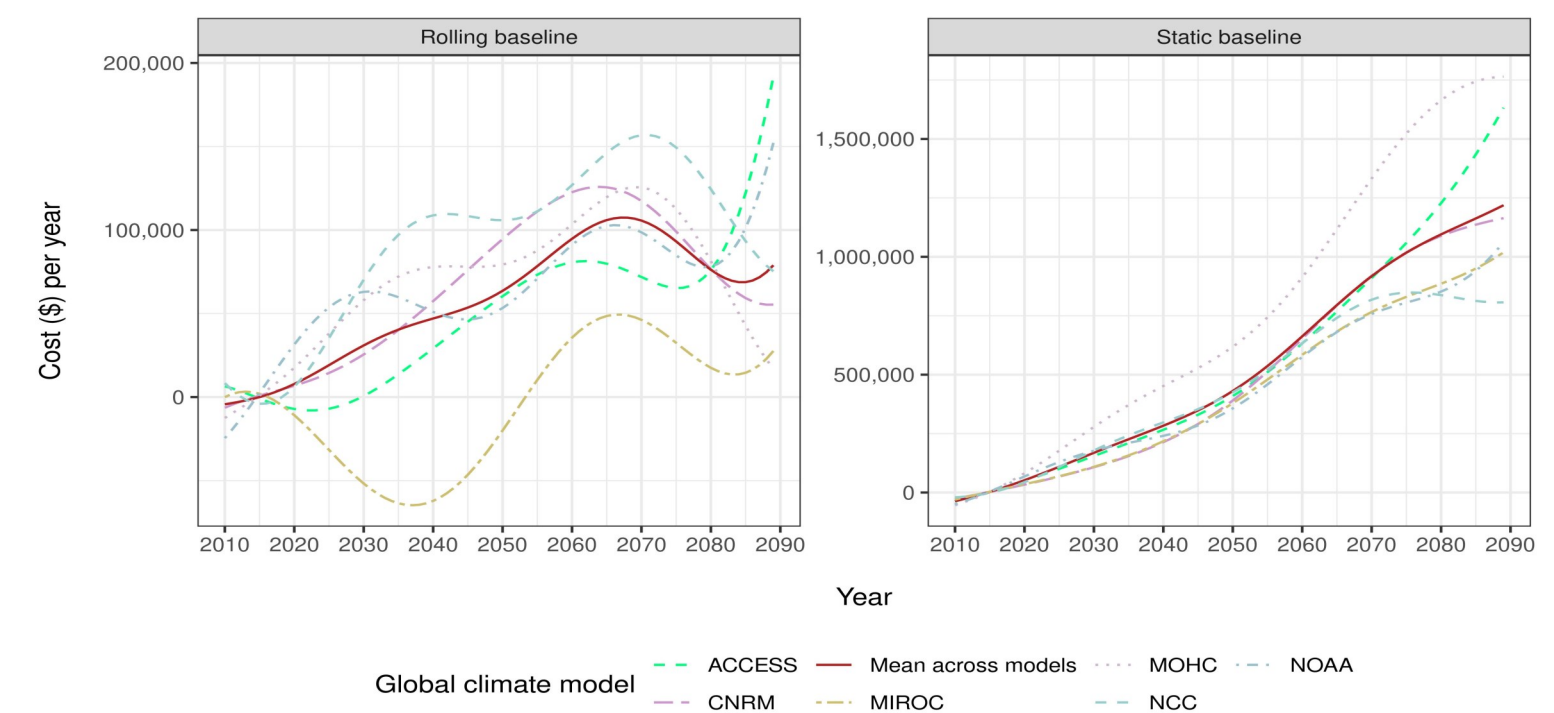


Methods

We calculated health care costs attributable to heatwave events in Tasmania 2009-2019, using ambulance dispatches as a case study. We also modelled the expected health and economic burden for projected heatwave frequencies between 2010 and 2089. We developed our models based on two possible approaches to describing population adaptation to heatwaves – an adapted population calculated by determining heatwave episodes using a rolling baseline, and a non-adapted population calculated by determining heatwave episodes using a static baseline.

Results

Using a rolling baseline calculation for 2010 to 2089, we estimated additional ambulance costs averaging AUD\$57,147 per year and totalling AUD\$4,571,788. For the same period using a static baseline, we estimated additional ambulance costs averaging AUD\$517,342 per year and totalling AUD\$41,387,349, a nine-fold difference.



Conclusion

Different methods of estimating heatwaves, modelling an adapted versus non-adapted population, provide substantial differences in projected costs. There is potential for considerable health system cost savings when a population is supported to adapt to extreme heat.