

Climate Health WA Inquiry

About your submission

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No

Yes

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Your contact details

The following information will not be published without your permission but enables the Inquiry to contact you about your submission if required.

First name	Paul
Surname	Beggs
Address	[REDACTED]
Phone	[REDACTED]
Email	[REDACTED]

Publication of submissions

Submissions will be published with the name of the submitter unless otherwise indicated below. Do you consent to be identified in the published submission?

Yes, I / my organisation agree to be identified

No, I / my organisation request to remain anonymous

Terms of Reference

You are encouraged to address at least ONE of the Terms of Reference as listed below. Please select which item/s you will address:

- 1. Establish current knowledge on the implications of climate change for health in Western Australia (WA) and recommend a framework for evaluating future implications.
- 2. Identify and recommend a program of work to manage the implications of climate change for health in WA, which will protect the public from the harmful health impacts of climate change.
- 3. Identify and recommend a program of work to manage the implications of climate change for health in WA, which will strengthen the preparedness and resilience of communities and health services against extreme weather events, with a focus on the

most vulnerable in the community.

- 4. Identify and recommend a program of work to manage the implications of climate change for health in WA, which will reduce the contribution of WA health services to climate change and other detrimental impacts.
- 5. Identify and recommend a program of work to manage the implications of climate change for health in WA, which will enable WA Health services to implement change, including energy efficiency, to a more sustainable model.
- 6. Evaluate the likely benefits (health and wellbeing, social and economic) arising from climate change mitigation strategies, with a focus on WA health services.
- 7. Define the role of the Department of Health in leading public policy on climate change and health.
- 8. Recommend the Terms of Reference, scope and preferred methods for undertaking a climate change vulnerability assessment for the health sector.
- 9. Recommend the Terms of Reference, scope and preferred methods for developing a Climate Change Adaptation Plan for the health sector.

Submissions response field

Please type your response to the item(s) selected above into the field below. Alternatively you may provide your submission as a separate attachment (suggested maximum 5 pages).

Written Submission To The
Climate Health WA Inquiry
Associate Professor Paul Beggs
Macquarie University
30 August 2019

I wish to congratulate the Government of Western Australia on its inquiry into the impacts of climate change on health in Western Australia (WA), conducted under the *Public Health Act 2016*. This is an extremely important inquiry, and should lay a solid foundation for proactive and effective climate change mitigation and adaptation with respect to human health in this state. My submission relates primarily to two initiatives that are directly relevant to several of the inquiry's Specific Terms of Reference. These are (i) the *MJA-Lancet* Countdown on health and climate change, and (ii) climate change, allergens, and allergic diseases. I also note some other considerations at the end of my submission.

(i) *MJA-Lancet* Countdown

The *Lancet* Countdown (<http://www.lancetcountdown.org/>) is an international research collaboration dedicated to tracking the world's response to climate change, and the resultant health costs and benefits, across five broad domains. Reporting annually in the prestigious medical journal, *The Lancet*, it has achieved critical acclaim and exceptional international publicity.

Last year, in partnership with *The Lancet*, University College London, and *The Medical Journal of Australia*, Australia was the first and remains the only country to produce its own national Countdown assessment report (the *MJA-Lancet*

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Countdown) (Beggs and Zhang 2018; Zhang and Beggs 2018; Zhang et al. 2018). That report found that Australia is vulnerable to the impacts of climate change on health and that policy inaction in this regard threatens Australian lives. The *MJA-Lancet* Countdown assessment will be conducted annually through to 2030, tracking Australia's engagement with and progress on this vitally important issue.

The *MJA-Lancet* Countdown is a comprehensive assessment examining 41 indicators across five broad domains: climate change impacts, exposures and vulnerability; adaptation, planning and resilience for health; mitigation actions and health co-benefits; economics and finance; and public and political engagement. It has a national and sub-national focus, including states and territories where appropriate and possible. Findings specific to Western Australia include:

- an association between mean annual maximum temperature and suicide rate, with an increase in the former associated with an increase in the latter (in combination with most other Australian states and territories);
- the quantification of premature deaths in Perth and the rest of WA from exposure to anthropogenic airborne particulate pollution (PM2.5), as an indicator of the local direct health impacts of fossil fuel combustion, and the potential health benefits (i.e., reduction in such premature deaths) from a transition to renewables;
- the absence of a Western Australian climate change and human health adaptation plan;
- the quantification of WA's contribution to the national health care carbon dioxide equivalent (CO₂-equivalent) footprint (in 2014-2015);
- the lowest rate of electric vehicle sales of all the Australian states and territories; and
- the coverage of health and climate change in the Western Australian media.

Further, a set of five recommendations were developed directly from the 2018 *MJA-Lancet* Countdown report. These recommendations apply to Australia as a whole as well as each of its states and territories, including Western Australia. These five recommendations are (from Behrens et al. 2018):

“Recommendation 1

Increase investment in monitoring and early warning systems for climate-sensitive infectious diseases to inform necessary preparation of public health systems.

Recommendation 2

Update all Australian medical school curricula to include the impacts of climate change on human health in order to build the health sector's capacity to help prevent and respond to the health impacts of climate change.

Recommendation 3

Accelerate decarbonisation of Australia's energy sector, with strong political and financial commitments to achieve phase-out of coal-fired electricity generation.

Recommendation 4

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Provide adequate funding and support to active transport initiatives nationwide in order to capitalise on the environmental, health and economic benefits of a more active population and a less polluting transport system.

Recommendation 5

Invest in research to identify, map and examine populations particularly vulnerable to the mental health impacts of climate change, and to inform the development of appropriate resilience-building measures in all communities.”

The *MJA-Lancet* Countdown is led by Macquarie University and The University of Sydney (Co-Chaired by Associate Professor Paul Beggs and Dr Ying Zhang respectively). It is a collaboration of about 20 Australian climate change and health experts from multiple institutions and several states and territories. While we aim for a diversity of authors in this respect, we have to date had no author from Western Australia. The inclusion of an author from WA would be welcomed, particularly where the person had outstanding experience and expertise relevant to one or more indicators that we currently lack such experience and expertise for.

The *MJA-Lancet* Countdown has been unfunded to date. There is considerable scope for the Australian Government but also the state and territory governments, including the Government of Western Australia (perhaps through its Department of Health), to fund this initiative, its research on health and climate change, and its broader community engagement activities. 3

References

Beggs PJ, Zhang Y. The *MJA-Lancet* Countdown on health and climate change: Australian policy inaction threatens lives. *The Medical Journal of Australia* 2018;209(11):474-475. <https://doi.org/10.5694/mja18.00789ps>

Behrens G, Zhang Y, Beggs P. Lancet Countdown 2018 Report: Briefing for Australian Policymakers. Lancet Countdown, 2018. <http://www.lancetcountdown.org/media/1394/2018-lancet-countdown-australia-policy-brief-final-for-upload.pdf>

Zhang Y, Beggs PJ. The *Lancet* Countdown down-under: tracking progress on health and climate change in Australia. *The Medical Journal of Australia* 2018;208(7):285-286. <https://doi.org/10.5694/mja17.01245>

Zhang Y, Beggs PJ, Bambrick H, Berry HL, Linnenluecke MK, Trueck S, Alders R, Bi P, Boylan SM, Green D, Guo Y, Hanigan IC, Hanna EG, Malik A, Morgan GG, Stevenson M, Tong S, Watts N, Capon AG. The *MJA-Lancet* Countdown on health and climate change: Australian policy inaction threatens lives. *The Medical Journal of Australia* 2018;209(11):1.e1- 1.e21. <https://doi.org/10.5694/mja18.00789>

(ii) Climate Change, Allergens, and Allergic Diseases

The impacts of climate change on allergens and allergic diseases are important and potentially serious in Australia. Australia is highly vulnerable to such impacts because of its very high prevalence of allergic respiratory diseases such as asthma and allergic rhinitis, and allergic sensitisation to environmental allergens such as

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certain pollens and fungal spores (Beggs 2018). Almost a quarter of a million (237,100) Western Australians have asthma and almost half a million (495,700) Western Australians have hayfever and allergic rhinitis (Australian Bureau of Statistics 2019). Western Australians are currently particularly vulnerable to impacts of aeroallergens on their health due to the absence of aeroallergen monitoring, reporting and forecasting in this state (see, for example, NEII 2019 and EAACI 2019). This presents a particular challenge to WA, and with it a corresponding opportunity.

Impacts of climate change on pollen include effects on pollen production and atmospheric pollen concentration, pollen seasonality, pollen allergenicity, and the dispersion and spatial distribution of pollen. Similarly, there is evidence for effects on fungal spore production, seasonality and allergenicity (Beggs 2018).

Long-term year-round monitoring, reporting, and forecasting of aeroallergens such as pollen and fungal spores could and should be funded by the Government of Western Australia through, for example, the WA Department of Water and Environmental Regulation and/or Department of Health. This could be a collaboration with appropriately qualified university-based scientists in the state. Such monitoring, reporting, and forecasting should be integrated into the Australian Airborne Pollen and Spore Monitoring Network that is now serving several other states and territories well (e.g., Beggs et al. 2018; Milic et al. 2019).

Short-term monitoring is about to commence by staff from Curtin University's School of Public Health with support from outside Western Australia.

The establishment of this monitoring would enable WA to tap into the very significant advances that have been made elsewhere in Australia, including collaboration with the Bureau of Meteorology, CSIRO, other state/territory departments and relevant scientific and health expertise in universities and the like.

This would be the most productive thing WA could do in terms of climate change adaptation with respect to airborne allergen and allergic respiratory diseases such as asthma and allergic rhinitis, with very significant public benefit both now and into the future (e.g., Medek et al. 2019).

I am currently funded to conduct a project for the New South Wales (NSW) Government titled "Climate change and allergy in NSW: vulnerability and adaptation". There would be benefit in WA conducting a similar assessment. I would be willing to conduct or contribute to such a project focussed on Western Australia.

References

Australian Bureau of Statistics. National Health Survey: First Results, 2017-18 – Western Australia (Table 3.1 Long-term health conditions, Persons). Catalogue Number 4364.0.55.001. ABS, Canberra, 2019.

<https://www.abs.gov.au/AUSSTATS/subscriber.nsf/log?openagent&4364055001do0>

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Beggs PJ. Climate change and allergy in Australia: an innovative, high-income

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Beggs PJ, Davies JM, Milic A, Haberle SG, Johnston FH, Jones PJ, Katelaris CH, Newbigin E. Australian Airborne Pollen and Spore Monitoring Network Interim Standard and Protocols. Version 2, 14 September 2018. Australasian Society of Clinical Immunology and Allergy.

https://www.allergy.org.au/images/stories/pospapers/Australian_Pollen_and_Spore_Monitoring_Interim_Standard_and_Protocols_v2_14092018.pdf

European Academy of Allergy and Clinical Immunology (EAACI). Worldwide Map of Pollen Monitoring Stations. EAACI, Zurich, 2019. <https://www.eaaci.org/19-activities/task-forces/4342-pollen-monitoring-stations-of-the-world.html>

Medek DE, Simunovic M, Erbas B, Katelaris CH, Lampugnani ER, Huete A, Beggs PJ, Davies JM. Enabling self-management of pollen allergies: a pre-season questionnaire evaluating the perceived benefit of providing local pollen information. *Aerobiologia* 2019. <https://doi.org/10.1007/s10453-019-09602-1>

Milic A, Addison-Smith B, Jones PJ, Beggs PJ, Erbas B, Davies JM. Quality control of pollen identification and quantification exercise for the AusPollen Aerobiology Collaboration Network: a pilot study. *Aerobiologia* 2019.

<https://doi.org/10.1007/s10453-019-09580-4>

National Environmental Information Infrastructure (NEII). National Environmental Monitoring Sites Register. Australian Government, 2019. Add data: AusPollen Aerobiology Collaboration Monitoring Network. <http://neii.gov.au/viewer/>

(iii) Other Considerations

In terms of recommending the terms of reference, scope and preferred methods for developing a WA Climate Change Adaptation Plan for the health sector, the recently published *Human Health and Wellbeing Climate Change Adaptation Plan for Queensland* would be an excellent starting point (see https://www.qld.gov.au/_data/assets/pdf_file/0022/64237/h-cap-qld.pdf).

In terms of identifying and recommending a program of work to manage the implications of climate change for health in WA, which will strengthen the preparedness and resilience of communities and health services against extreme weather events, with a focus on the most vulnerable in the community, the Victorian Inspector-General for Emergency Management's *Review of Response to the Thunderstorm Asthma Event of 21–22 November 2016: Final Report* (IGEM 2017) includes 16 recommendations, most of which relate broadly to emergency management and will likely be relevant to Western Australia. The Government of Western Australia implementing such recommendations where appropriate and relevant would be a significant advance in addressing this specific term of reference for the inquiry.

Reference

Inspector-General for Emergency Management (IGEM). Review of Response to the Thunderstorm Asthma Event of 21–22 November 2016: Final Report. Inspector-

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General for Emergency Management, Department of Justice and Regulation, Victoria State Government, 2017. <https://www.igem.vic.gov.au/reports-and-publications/igem-reports/review-of-response-to-the-thunderstorm-asthma-event-of-21-22-0>

See also:

Inspector-General for Emergency Management (IGEM). Implementation of Recommendations from the *Review of response to the thunderstorm asthma event of 21-22 November 2016* Progress Report – 2019. Inspector-General for Emergency Management, Department of Justice and Community Safety, Victoria State Government, 2019. <https://www.igem.vic.gov.au/reports-and-publications/publications/progressreport2019>

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