

Firstly I would like to thank the health department for conducting an enquiry into climate health in WA. Climate change is already a major public health issue, with thousands of preventable deaths occurring annually due to the effects of changing climate. These deaths are due to lung and heart disease from increasing air pollution, direct effects of heat, suicide, skin cancers and direct effects from climate induced 'natural' disasters.

air pollution

² A recent study on 2500 children showed that small increases in NO₂ (one of the common air pollutants) to only 9 parts per billion results in a significant increase in asthma rates. Current 'safe levels' have been set at 30 parts per billion.

direct effects of heat

¹ BRASH syndrome - low blood pressure, renal failure, altered sodium and low potassium, has become increasingly common in Queensland emergency departments. ⁵ Prolonged exposure to heat leads to dehydration, heatstroke, and worsening of existing conditions. There are a number of observational studies related to the increased incidence of unexplained renal failure in outdoor workers in the 40-50 yr old age group in climates more prone to heat. ¹¹ During the 2009 Victorian heat wave (3 days of increased heat) there were 374 excess deaths, and a 12% increase in emergency presentations.

Heatwaves and reduced rainfall also increase the probability of bushfires which can have both direct (burns, death) and indirect effects on health (asthma, COPD exacerbations, mental health effects of trauma).

Mental health

There are direct effects from natural disasters, resulting in PTSD, grief and trauma. This is easy to quantify and prove, with many examples including the ⁵ increase in antidepressant prescription rates after cyclone Yasi for one. The indirect effects are a little harder to measure, but no one would argue that we have a huge surge in youth mental health presentations, and is this at all difficult to understand with the future they are set to inherit?

⁷ Mental health declines significantly in farming communities at times of drought. ¹⁰ There is data linking a decrease in rainfall with an 8% increase in suicide rates.

Skin cancers

⁸ non melanomatous skin cancers have increased by 86% between 1997-2010 and ⁹ melanomatous skin cancers also increased during this time until just recently when the effect of public health campaigns on reducing UV exposure in early life finally resulted in a quantifiable effect.

Natural disasters

Direct effects from 'natural' disasters including floods and storm surges which displace thousands of people, cause interruptions in safe water supply, increasing the risk of gastrointestinal diseases. The 2011 QLD floods resulted in 36 deaths, and the fires in Victoria in 2009 resulted in 173 deaths.

³ effects on fertility and pregnancy

There is data linking air pollution and intrauterine growth retardation and other pregnancy complications.

⁴ Increased effects of influenza

Each year our morbidity and mortality rates from influenza rise. There is an increasing amount of evidence this is related to fluctuations in temperatures, humidity levels and air pollution.

Projected effects

The increased cost of living due to reduced food supply attributable to a decline in rainfall, will amplify the effects of poverty and the increase the effect of social determinates of health.

Increasing temperatures will increase mosquito populations and mosquito borne diseases. Tropical diseases, skin infections and food borne bacterial infections are all likely to rise.

Medico-legal time bomb

Part of the health departments role is to warn the public about health risks of behaviours or toxins and put measures in place to protect them from such harms. We don't need to look far back into history to recall the medico-legal consequences of ignoring this role, with compensation cases for asbestos ongoing.

What role should the health department play in the climate crisis?

The climate crisis is primarily a public health issue, it is therefore imperative that the health department take the lead in tackling this issue.

Currently, the medical industry is responsible for 7% of greenhouse gas emissions, 44% of this being from hospitals. We produce an enormous amount of waste, the majority of which, is not recycled. For a start, we need to reduce our contribution to the problem. There are many hospitals that have made exciting progress with this, including Sydney Childrens hospital war on waste 2018. Many other examples and case studies can be found www.greenhospitals.net. This website also has guidance documents for sustainable action, providing all the 'how to' information on waste management, energy production, water use and reducing resource consumption.

Globally, we can see much progress being made by the UK's Sustainable development unit, and rather than reinvent the wheel we could just 'take a leaf'.

Climate change is not a national problem but a global problem, thus it can only be effectively managed through collaborative global actions. By leaving no country behind and ensuring that we are moving towards an improved standard of living for those who need it most we will ensure the cooperation and participation of all. Each Australian hospital should be given a sister hospital to sponsor in a developing country. Funds should be diverted to these places for projects that improve sustainable practices and reduce the environmental impact of these hospitals. Not only are we setting an example for future governments and leaders but we are also improving international relations and closing the poverty gap, improving equality and fairness, and thus reducing risk of global conflict. Small actions can make big ripples.

Education about health risks is one of the most important roles of the health department. Education campaigns about the effect that air pollution is already having on our children lungs, the effects of heat on the vulnerable and why we are experiencing these issues, are imperative. Without public awareness, we cannot expect people to understand why it is important to move to green energy, reduce waste and sponsor developing nations. Without knowledge of the health risks the public will never know how to reduce the risks and live the healthiest life they can. It is our role as doctors to educate and inform, as we know, any treatment is useless without compliance.

Political advocacy needs to be a priority. We need to speak loudly and clearly to our government about the irreversible risks of continuing to burn fossil fuels. We need to push for an urgent national transition to renewable energy and REAL reduction in emissions, with a target to net zero emissions by 2050. There is no other way to safe guard the health of Australians.

We need to strengthen our health system in order to cope with the increased demand that will inevitably occur as a result of climate change. I work as a doctor in an emergency department. It is a daily occurrence to have issues with bed blocking and psych pts that sit in the department for days on end. In fact when i walk through the front doors to start my shift, if i don't see a waiting room full of angry patients and ambulance stretches backed up the corridor i am seriously perplexed. How then will this already stretched system cope with even the smallest increase in demand? I definitely don't have all the answers to this complex problem but a few obvious solutions would be to create more mental health beds, increase staffing levels during a heat wave, make and practice protocols for natural disasters/ massive influx of patients, and utilise and collaborate with other services including St Johns urgent care clinics, hospital in the home and GP practices.

The climate crisis is a public health disaster on a mammoth scale. We can already see increased asthma rates, increases in cardiovascular disease, poor mental health, direct effects of heat and other natural disasters, and skin cancers, not to mention the projected effects of food shortages, tropical diseases and effects of displaced persons should we continue on our current trajectory. The health department needs to take a brave and firm stance on the issue and do everything in its power to reduce our contribution to the problem, educate the public, prepare for increased numbers of hospital patients, and lead the way by sponsoring developing countries.

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References

- 1) Brisbane Times 11 Aug 2019
- 2) Knibbs, Cortes, Toelle, Guo. The Australian Child Health and Air pollution Study (ACHAPS): A national population-based cross sectional study of long - term exposure to outdoor air pollution, asthma and lung function. *Environment International*, 120, 394-403.
- 3) PereiraG, Cook AG. Locally derived traffic related air pollution and fetal growth restriction: a retrospective cohort study. *Occupational and environmental medicine* 2012, 69(11), 815-822.
- Fu L, Chen Y; The associations of air pollution exposure during pregnancy with fetal growth and anthropometric measurements at birth: a systematic review and meta-analysis. *Env sci pollute* 2019 Jul;26(20):20137-20147.
- 4) Xuz, Hu wb. Air pollution, temperature and paediatric influenza in Brisbane, Australia. *Environment International* 2013, 59, 384-388.
- 5) Climate Commission 2011
- 6) Usher et al. 2012
- 7) Edwards Et al. 2014
- 8) Marloes Fransen et al. Non-melanoma skin cancer in Australia. *MJA*, Vol 197, issue 10.
- 9) Australian Bureau of statistics.
- 10) Nichols et all, 2006.
- 11) https://www.parliament.vic.gov.au/images/stories/downloads/Committee_reports/SCFPA_Report08Heatwave.pdf