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Lessons to be learned in relation to the Australian bushfire season 2019-20

Terms of reference

As a medical research institute, The George Institute for Global Health will focus our submission on the following terms of reference:

(b) the respective roles and responsibilities of different levels of government, and agencies within government, in relation to bushfire planning, mitigation, response, and recovery;

(d) the adequacy of the Federal Government's existing measures and policies to reduce future bushfire risk, including in relation to assessing, mitigating and adapting to expected climate change impacts, land use planning and management, hazard reduction, Indigenous fire practices, support for firefighters and other disaster mitigation measures;

(e) best practice funding models and policy measures to reduce future bushfire risk, both within Australia and internationally;

(g) the role and process of advising Government and the Federal Parliament of scientific advice; and

(h) an examination of the physical and mental health impacts of bushfires on the Australian population, and the Federal Government's response to those impacts.

About this submission

The bushfires during the summer of 2019-20 were tragic for Australia, both for communities that were directly affected by fire through the loss of their homes and/or livelihoods; and for millions of Australians who were affected by the fires through exposure to smoke and witnessing the horrific scenes reported in the media. This has significantly impacted the health and wellbeing of Australians.

Whilst bushfires raged, Australia experienced its hottest year on record in 2019 in addition to the ongoing drought impacting many parts of the country. The George Institute believes high temperatures, bushfires and drought is largely due to human-induced climate change.

The long-term impacts of climate change on our health are not yet fully understood, particularly concerning prolonged exposure to smoke and pollutant particles. The Federal Government should be taking swift and comprehensive action to combat the impacts of climate change, according to recommendations by the World Health Organization, the United Nations Sustainable Development Goals 7, 11, 12, 13, 14 and 15 and The Paris Agreement.

The George Institute has a mature program of research and in-house expertise related to Aboriginal and Torres Strait Islander peoples, health systems, chronic diseases, including respiratory conditions and mental health, and injury. These are important considerations for the scope of the inquiry into, *Lessons to be learned in relation to the Australian bushfire season 2019-20.* Please find below our response to the terms of reference of the inquiry.

About The George Institute for Global Health

The George Institute for Global Health is a leading independent global medical research institute established and headquartered in Sydney. It has major centres in China, India and the UK, and an international network of experts and collaborators.

Our mission is to improve the health of millions of people worldwide by using innovative approaches to prevent and treat the world's biggest killers: non-communicable diseases and injury.

Our work aims to generate effective, evidence-based and affordable solutions to the world's biggest health challenges. We research the chronic and critical conditions that cause the greatest loss of life and quality of life, and the most substantial economic burden, particularly in resource-poor settings.

The George Institute for Global Health acknowledges the Gadigal People of the Eora Nation as the Traditional Custodians of the land on which our Australia office is built and this submission report was written. We pay our respect to Elders past, present and emerging.

B. The respective roles and responsibilities of different levels of government, and agencies within government, in relation to bushfire planning, mitigation, response, and recovery

The George Institute for Global Health recommends the following be considered in relation to bushfire planning, mitigation, response and recovery.

Importance of funding research
State and federal governments, and their respective agencies, play a crucial role in the funding of research to assess the short- and long-term impacts of climate change-related disasters, including bushfires. There are knowledge gaps related to prolonged exposure of bushfire smoke that need urgent attention to mitigate future health challenges, and aid in response and recovery.

Understanding and embracing Aboriginal knowledges
Bushfire risk has shifted as Aboriginal fire practices have historically been disregarded and undervalued as a rich and continuing knowledge system that has allowed the relationship between peoples and the land to thrive for millennia. While there are clear measures focussed on firefighting, there needs to be a greater focus on bushfire prevention. By working with Aboriginal peoples with local knowledge of land management, better fire prevention practices can be enacted. This should include collaboration with Aboriginal Affairs and the National Indigenous Australians Agency to ensure that appropriate Indigenous governance principles are adhered to, where relevant. Genuine engagement with traditional knowledge holders in Aboriginal and Torres Strait Islander communities around bushfire planning, mitigation, response and recovery is also crucial to inform any decision making. There must be proper inclusion and leadership from Aboriginal peoples within governance, as well as recognition and respect of intellectual property over cultural fire practices.

Clearer communication
Clear communication across state and federal governments, and their associated agencies, is essential. In particular, there is a need for a clear, long-term, whole-of-government approach to the health and wealth of Australians at risk from bushfire.

Ongoing and continuous community consultation
Community engagement and consultation on bushfire planning, mitigation, response and recovery is essential to ensure its efficacy. This includes people in rural and remote settings, as well as targeting at-risk groups within communities such as people from non-English speaking backgrounds.

> **D. The adequacy of the Federal Government's existing measures and policies to reduce future bushfire risk, including in relation to assessing, mitigating and adapting to expected climate change impacts, land use planning and management, hazard reduction, Indigenous fire practices, support for firefighters and other disaster mitigation measures**

The George Institute for Global Health recommends the following measures be considered to adequately respond to future bushfire risk.

Working closely with Aboriginal communities:

- **Aboriginal fire and land management methods:** It is important to consider our ancient history of Aboriginal peoples having undertaken on our land/Country for many thousands of years prior to colonisation and subsequent removal of Aboriginal peoples from traditional lands. There needs to be a better level of understanding of the interplay between ecological management and cultural practices as a Country that includes First Peoples with sophisticated knowledge systems around land management and fire practices. There needs to be better collective consciousness raising and valuing of an Indigenous paradigm that values the interconnectedness and relationship between people and land/Country.

- **Aboriginal fire training programs:** Consideration should be made for using Aboriginal cultural fire practices alongside conventional fire management strategies. This could include involving firefighters in Aboriginal fire training programs (with adequate resourcing of these programs that also considers broader cultural competency training, as required).

- **Climate change and bushfire risk:** Existing measures and policies to reduce bushfire risk have not adequately understood or included Aboriginal cultural fire practices or recognised the many thousands of years of practice in land use and management techniques for risk reduction. This also extends to climate change and reductions in greenhouse gas emissions from cultural burning practices.

- **Review past recommendations:** There has been inaction on past recommendations that have been made following previous bushfires in relation to Aboriginal land management practices. Previous recommendations and reviews should be synthesised and reconsidered by state and federal governments with a commitment to adopt applicable recommendations.

First responders and volunteers
It is important to highlight health risks faced by first responders and volunteers at the frontlines of bushfire management, including impacts on mental health, respiratory health, and injuries. This includes increasing capacity to conduct appropriate pre-work assessments and building the evidence base for smoke inhalation risks, use of safety equipment, and modelling the immediate and long-term risks of post-exposure lung disease. Long-term, evidence-based mitigation strategies should be developed and implemented to reduce poor health outcomes. Strategies to protect bushfire fighters and ensure their sustained workforce participation should be based on evidence obtained from frontline personnel before and immediately after acute events, as well as for the longer term, post-exposure.

Bushfire smoke exposure
Exposure to bushfire smoke for millions of people across communities in Australia has historically been more strongly associated with respiratory morbidity than cardiovascular morbidity and mortality (which is seen more often in association with traffic pollution). Long-term follow-up is needed among exposed communities to assess risk factors and the consequences of exposure, along with the incorporation of evidence into guidelines to protect the long-term respiratory health of children and adults.

E. Best practice funding models and policy measures to reduce future bushfire risk, both within Australia and internationally

The George Institute for Global Health recommends the following to be considered as opportunities to work with Aboriginal communities.

Best fire practices
Investigate Aboriginal fire practices, including adequate resourcing of Aboriginal fire experts within communities. This may include adopting cultural burning practices as part of mainstream fire management plans, and training programs to be adequately resourced.

Disaster management opportunities
Support more jobs and opportunities within disaster management for Aboriginal and Torres Strait Islander peoples and communities, particularly to increase employment opportunities within local communities.

More funding for prevention
Review current investment into future firefighting capacity to increase focus on preventative efforts that invites Aboriginal knowledge holders to work on Country now. To achieve this, economies need to be developed that support cultural practice and acknowledge the traditional custodianship of Country.

G. The role and process of advising Government and the Federal Parliament of scientific advice

The George Institute for Global Health recommends the following improvements be considered related to the role and process of providing scientific advice.

Embrace Aboriginal knowledges
Before any advising or decision making occurs, it is important to first highlight that the notion of what constitutes 'scientific advice' is contested and often excludes Indigenous knowledges and experiences (Denzin and Lincoln, 2008). By contextualising 'science' and 'knowledge' through a decolonising lens, Indigenous knowledge is based on many thousands of years of living and thriving on Country and must begin to be recognised and valued as 'legitimate'.

Knowledge exchange and co-operation
Aboriginal and mainstream fire management groups should be supported to work together where ideas/knowledge/practices can be exchanged and valued. This involves working at the interface between Western knowledge and Indigenous knowledge systems that considers a cross-cultural space with differing theories and meanings, that does not value one way over the other (Nakata, 2006).

Evidence-based health policy
Scientific advice related to health and strategy should be at the forefront of government and parliamentary decision-making. This should include engagement with health experts, including clinicians, researchers and systems experts, to improve mitigation strategies and policy.

Establish a national body
To be successful in improving processes for sharing scientific advice with governments and parliaments, the establishment of a national office that covers planetary health is essential. The establishment of such an office can create a shift from short-term focus on immediate climate disasters to a long-term, whole-of-government approach with evidence-based policy and practice. The creation of a National Expert Committee on Air Pollution and Health Protection within this body should also be established to allow for long-term planning and assessment of the health impacts of air pollution.

Accelerate implementation of the Sendai Framework
Accelerate the Sendai Framework by increasing the funding and capacity of the National Resilience Taskforce within the Department of Home Affairs to improve the process of providing scientific advice. In particular, efforts should be made to focus on priority four: "Enhancing disaster preparedness for effective response and to 'build back better' in recovery, rehabilitation and reconstruction".

Accelerate implementation of the National Fire Danger Ratings System

H. An examination of the physical and mental health impacts of bushfires on the population, and the Federal Government's response to those impacts

Given the likely increase in the severity and frequency of climate-related disasters in the future, including bushfires, The George Institute for Global Health recommends the following be considered with regard to the physical and mental health impacts of bushfires on population health.

Health and wellbeing impacted by climate change
As stated in our introduction, climate change is impacting the health of all humans around the world. In Australia, this is most felt through drought and bushfire. In order to reduce the impacts of climate change on human health, the government should be taking swift and comprehensive action to combat its impacts, according to recommendations by the World Health Organization, the United Nations Sustainable Development Goals 7, 11, 12, 13, 14 and 15 and The Paris Agreement.

Social determinants of health
It should be recognised that bushfire crises have the potential to worsen existing social inequities, including physical and mental health impacts, and therefore an equity and cultural lens should be applied in any policy response. This includes a prioritisation for communities who experience vulnerability and are directly impacted by bushfires.

Aboriginal and Torres Strait Islander health
Any examination of impacts on the population should recognise and value an Aboriginal and Torres Strait Islander holistic understanding of health and wellbeing that includes the physical, social, emotional, cultural and spiritual health of individuals and communities. By understanding Indigenous ways of knowing, being and doing (i.e., epistemology, ontology and axiology), we can better understand the link between human beings and land/Country. Through this paradigm, it becomes clear that when Country is unwell (i.e., the negative effects of bushfires on flora, fauna and climate), then the population is also unwell, placing an increased burden on our healthcare and social systems. All health programs and staff should include a cultural competency framework to support Aboriginal and Torres Strait Islander Peoples' access to healthcare.

Respiratory
People in rural and remote settings, as well as those in urban settings, were greatly impacted by the prolonged bushfire season of 2019/20. During this fire season, exposure to poor air quality due to smoke was up to 10 times higher over several days than levels considered safe, depending on location and weather conditions. Such hazardous levels of smoke impacts respiratory patients in particular, who suffer increased symptoms with even small concentrations of air pollutants created by bushfires. This is especially the case for people with asthma and chronic obstructive pulmonary disease, for whom increased hospital admissions have been seen in bushfire smoke exposure settings around the world.

Such an increased symptom burden adds pressure on emergency health agencies through higher demands on ambulance services and health professionals. As increased hospitalisations and early mortality may result from increased atmospheric smoke levels, examination of the physical impacts of the bushfire season should have a primary focus on respiratory diseases. A key outcome should be a long-term strategy for assessment and mitigation, and not only a short-term emergency response. These health consequences are important in relation to bushfire emergencies as well as controlled back burning, which has been associated with increased hospital admissions in Australia. Careful pre- and post-exposure assessment of firefighters and community members in these controlled burn settings could help to guide recommendations for safer approaches to fire control and hazard reduction, both during and out of the bushfire season.

Mental health

While the current National Bushfire Recovery Fund includes support measures and funding for individuals in crisis, it does not allow for ongoing and long-term support needed for recovery of bushfire victims, their families and communities. A long-term, community led approach is needed to fully address the mental health needs of residents in bushfire affected regions. This should also include culturally safe programs for Indigenous Australians and programs to prevent psychological problems associated with the enduring effects of climate change, drought and fire in the new era where physical distancing, isolation and quarantine may co-exist with evacuation orders and emergency shelters.

Community engagement

To ensure best practice and uptake, residents in bushfire-affected regions should be adequately consulted about proposed and existing programs to support recovery.

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