

16 April 2020

Royal Commission into National Natural Disaster Arrangements

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Dear Commission

## **Actuaries Institute Submission to Royal Commission into National Natural Disaster Arrangements**

The Actuaries Institute (“the Institute”) is the professional body for Actuaries in Australia. The Institute is committed to promoting and maintaining a high standard of actuarial practice and contributing to public policy through policy submissions, thought leadership and expert analysis.

The Institute provides commentary on public policy issues where there is uncertainty of future financial outcomes. We strive to act in the public interest and our contributions to public policy issues are guided by the principles of transparency, a ‘level playing field’ and good regulation (proportional and the most appropriate regulatory tool/s).

Actuaries have extensively contributed to the many public policy discussions regarding natural disasters in Australia. The profession’s focus has been particularly on understanding the current and future risks, ensuring sustainable coverage for and pricing of those risks, and related measures to improve the resilience of the community. This reflects the role actuaries play in advising insurers on pricing for home (and other) insurance, including an allowance for natural disaster costs. Under the prudential standards set by the Australian Prudential Regulation Authority (APRA), all APRA-regulated insurers must designate an Appointed Actuary to provide independent advice to boards and senior management on key financial risks.

The Institute notes that immediate emergency response is critical in the preservation of life and an important part of disaster arrangements, but we have confined our comments to issues regarding mitigation and adaptation, insurance and long-term financial recovery for communities. Specifically, our submission responds to the Royal Commission’s Terms of Reference b, d and f. In recent years the work of the Institute and its members has included research publications<sup>1</sup>, the launch and quarterly updating of the Australian Actuaries Climate Index<sup>2</sup> and submissions to many inquiries – including by the Australian Competition and Consumer Commission<sup>3</sup>, the Productivity Commission<sup>4</sup>, The Treasury<sup>5</sup>, other Government

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<sup>1</sup> See [The impact of climate change on mortality and retirement incomes in Australia](#), [Climate Risk Disclosure – financial institutions feel the heat](#) and [The cost and funding of natural disasters in Australia – current position paper](#)

<sup>2</sup> See [Australian Actuaries Climate Index](#)

<sup>3</sup> See [Northern Australia Insurance Inquiry – Second Update Report](#)

<sup>4</sup> See [Submission to Draft Report into Natural Disaster Funding Arrangements, Addressing the effectiveness of current national natural disaster funding arrangements, Climate change and insurance, and Response to Natural Disaster Insurance Review Issues Paper](#).

<sup>5</sup> See [Submission on Northern Australia Insurance Premiums Taskforce Interim Report 2015 Addressing the high cost of home and strata title insurance in North Queensland, Reforming Flood Insurance Submission – Response to Consultation Paper](#) and various Pre-Budget submissions available at: <https://www.actuaries.asn.au/public-policy-and-media/submissions>

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Departments<sup>6</sup>, the Senate<sup>7</sup>, and State Government Commissions of inquiry into specific natural disasters<sup>8</sup>.

This submission synthesises the findings from that body of work under four main areas: natural disasters in Australia, the changing climate, affordability of insurance and health impacts.

## 1. Natural Disasters in Australia

Key points:

- The Institute strongly supports a greater balance of spending on natural disasters to be pre-funding on mitigation and adaptation to prevent property damage, rather than post-disaster funding on relief and recovery.
- The Institute encourages land use planning processes to be dynamic to reflect the continually evolving understanding of localised risks. Furthermore, as the understanding of risks improves and the suitability of land to specific uses changes, consideration needs to be given to equitable remediation processes.
- The Institute strongly encourages reconsideration of the Australian Building Codes Board's remit to explicitly include consideration of proportionate and cost-effective protection of property over the expected lifetime of the building and to take account of likely future conditions and stresses those structures should be able to withstand over that lifetime.
- Infrastructure to reduce the financial loss and property damage from individual natural perils must be well maintained to ensure it remains fit for purpose over a long structural life.
- The Institute strongly supports the continued progression of, and funding for, the work commenced by the National Resilience Taskforce now within the Disaster Resilience branch of the Department of Home Affairs.
- We also strongly support the recommendations of the Productivity Commission in its 2015 report on Natural Disaster Funding Arrangements that the Australian and State and Territory governments include transparent natural disaster liabilities in their budgets.

In 2016 the Actuaries Institute estimated an annual natural disaster cost to Australia of \$11-12 billion, of which only 40 per cent was insured<sup>9</sup>. This cost figure covers the cost of damage to public assets and intangible losses such as the impacts on mental health, loss of life, biodiversity and community well-being as a result of natural disasters. The former is self-insured and self-funded by government (sometimes at significant cost to the Commonwealth Government even if the asset is State or Local government owned) and the latter is usually funded by welfare payments and police, justice and health budgets (also largely Commonwealth funded, either directly or indirectly). Additionally, there is a significant cost to charities and volunteers.

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<sup>6</sup> See [NDRRA Submission](#)

<sup>7</sup> See [Inquiry into recent trends in and preparedness for extreme weather events](#)

<sup>8</sup> See [Submission to the Queensland Floods Commission of Inquiry](#) and [Institute of Actuaries of Australia Submission to Victorian Bushfires Royal Commission](#)

<sup>9</sup> See [The cost and funding of natural disasters in Australia – current position paper](#)



- As an important aside, the Institute notes the distinction between “natural perils” and “natural disasters”. Natural perils are events such as floods, bushfires, cyclones, storms and earthquakes. Natural perils become disasters when our built environment lacks the resilience required to withstand these events. The disaster is the loss of life, financial loss to individuals, insurers, reinsurers, governments, emergency services and impact on health and social services.

Obtaining a picture on the longer-term outlook for the annual cost of natural disasters requires consideration of inflation, population growth by region, and changes to the nature of the built environment and future land use. In addition, there are changes in the exposure of areas to natural disasters (e.g. coastal development is typically becoming higher risk, including to storm surge which is typically not insured), as well as anticipated changes in the frequency and severity of natural perils due to climate change (this latter aspect is discussed in section 2). Climate cycles and variability make the assessment of cause and effect difficult and add to the uncertainty of forecasts of the future.

The Institute strongly supports a greater balance of spending on natural disasters to be pre-funding on mitigation and adaptation measures that improve the resilience of individuals, businesses and the community to better withstand or avoid natural perils, rather than post-disaster funding of natural disaster relief and recovery. In this context ‘mitigation’ refers to measures which avoid the financial loss and property damage arising from natural perils (e.g. building of a flood levee to avoid future floods) and ‘adaptation’ refers to measures which strengthen the resilience of the built environment to withstand natural perils (e.g. retrofitting homes and upgrading of building standards).

In addition, mitigation and adaptation measures can reduce insurance premiums, providing greater access to financial security for all Australians, and less reliance on the government and public expenditure. Currently, the balance of spending is heavily weighted towards post-disaster funding. It is accepted that the return on investment from considered pre-funding is many times greater than the return on post-disaster funding.

As noted in the Deloitte Access Economics report for the Australian Business Roundtable<sup>10</sup>, there is a double dividend from investments in resilience. First, it reduces the cost of natural disaster events and, second, it drives social and economic ‘co-benefits’ that arise even in the absence of a disaster. Governments at all levels have a role to play in improving community resilience as they often bear considerable economic loss directly through restoration of essential public infrastructure and disaster recovery payments. There are also costs through loss of taxation revenue if business continuity and employment are affected, and governments also face increased outlays on health and social services.

The Deloitte Access Economics report recognises that approximately \$50 million per annum has been spent on resiliency over the period 2013/14 to 2016/17. However, this is a fraction of the post-disaster costs of \$1.8 billion per annum over the period 2007–2016. The report also projected the future cost of natural disasters in Australia to increase by 3.4 per cent annually (after inflation) to \$39.3 billion by 2050 from a base of \$1.2 billion in 2017. A wide range of solutions were illustrated in the report along with the recommendation that all levels of government and stakeholders should improve their understanding of natural perils and collaborate in a coordinated approach to build resilience and address the long-term costs of natural disasters. It notes that “targeted investments in physical (such as infrastructure) and

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<sup>10</sup> [Building resilience to natural disasters in our states and territories, Deloitte Access Economics, 2017.](#)



community (such as preparedness programs) resilience measures are predicted to significantly lessen this increase in costs”<sup>11</sup>.

There are four key areas of mitigation and adaptation that currently exist in Australia to improve pre-disaster resilience. The return on investment of any specific mitigation and adaptation measure will be highly project dependent although some generalised comments are provided in [The cost and funding of natural disasters in Australia – current position paper](#) (page 14).

- Land use planning – For example local councils incorporating natural perils risk in their zoning process. The Institute encourages these processes to be dynamic to reflect the continually evolving understanding of localised risks due to:
  - improved technology, including the changing built environment and advances in catastrophe modelling;
  - higher resolution data at an address level; and
  - learnings from recent events, such as the Queensland Floods, Cyclone Yasi or the 2019/20 bushfires.

Furthermore, as the understanding of risks improves and the suitability of land to specific uses changes, consideration needs to be given to equitable remediation processes. The relocation of Grantham, Queensland, is a useful case study where this impacted a whole town.<sup>12</sup>

- Building standards – The Institute notes these standards are primarily set with regard to protection of life. While that was appropriate when the standards were developed, this may be below current community expectations of what is appropriate, especially when the high cost of natural disasters (including uninsured losses as well as intangible losses) is considered. The Institute notes that the Australian Building Codes Board (ABCB) has indicated to the ACCC that “the primary purpose of the ABCB is to set minimum standards through the National Construction Code (NCC) that are proportional and cost effective for occupational health and safety within buildings, not property protection.”<sup>13</sup> The Institute strongly encourages reconsideration of the ABCB’s remit to explicitly include consideration of proportionate and cost-effective protection of property over the expected lifetime of the building. This is especially important when we consider that a significant proportion of Australians’ wealth is in their homes. While existing standards may protect life, they are not designed to optimally protect property, lifestyle or livelihood. Such a change to the remit would enable the ABCB to work collaboratively with the insurance industry to identify potential changes to the NCC and how that would improve insurance availability and affordability, and coverage for those properties in the future.

The implications of a changing climate for building standards are also very significant (and some specific examples are provided at the end of section 2 of this submission). Furthermore, given the expected long structural life for new houses and other buildings, it is important building standards take account of likely future conditions and stresses those structures should be able to withstand, including from natural perils, over that long

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<sup>11</sup> Ibid, p. iii.

<sup>12</sup> See [Productivity Commission, Natural Disaster Funding Arrangements](#), p.377 and <http://theconversation.com/moving-grantham-relocating-flood-prone-towns-is-nothing-new-4878> for details.

<sup>13</sup> ACCC, [Northern Australia Insurance Inquiry - Second Interim Report](#), p.258



life. Recognising that protection against future costs generates long term benefits with short term cost, it is essential that cost-benefit analyses take a multidecadal view.

- Retrofitting existing properties – There are widespread examples, including the Queensland Household Resilience Program financing up to 75 per cent of the cost of improvements capped at \$11,250 for homes in cyclone impacted areas north from Bundaberg on a means tested basis. The improvements supported roof replacement and tie-downs and window protection, amongst other retrofitting demonstrated to be effective at reducing property damage from cyclone. Subsequently, the buildings insurance premiums for these improved homes reduced. This retrofitting is typically more expensive than insurance premium discounts over a 3-5 year period and difficult for insurers to incentivise. The inclusion of resiliency in new build is expected to be more economical than retrofitting, underscoring the importance of timely change to building standards.
- Infrastructure to reduce the frequency and severity of individual natural perils - The construction of a flood levee in Roma is a key example. It also highlights the partnership role that insurers can play with councils. Another example, the flood walls and other works pre- and post- Hurricane Katrina in New Orleans, highlight the importance of maintaining infrastructure so it remains fit for purpose over a long structural life.

The Institute strongly supports the continued progression of, and funding for, the work commenced by the National Resilience Taskforce now within the Disaster Resilience branch of the Department of Home Affairs, which is examining many of these issues. We also welcome the recent announcement to create Resilience NSW to ensure co-ordination within NSW.

The Institute also strongly supports the recommendations of the Productivity Commission in its 2015 report on Natural Disaster Funding Arrangements, that:

- the Australian Government include estimates of future costs of natural disasters in the Statement of Risks section of the budget<sup>14</sup>, which the Institute suggests be both at an expected level and at different annual return intervals (i.e. 1 in 10 year event or 1 in 100 year event), and
- State and Territory governments include transparent natural disaster liabilities in their budgets<sup>15</sup>.

Such steps would provide transparency and encourage planning for the expected cost of natural disasters. As noted by the Productivity Commission, “Where governments make no explicit budget provision for the costs of recovery from future natural disasters, there is a systematic bias in risk management against mitigation and insurance”.<sup>16</sup> These recommendations could be extended to local government given its shared responsibility in natural disaster mitigation and relief and recovery.

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<sup>14</sup> [Recommendation 3.6](#)

<sup>15</sup> [Recommendation 3.7](#)

<sup>16</sup> [Finding 2.2](#)



## 2. The changing climate

Key points:

- Based on expert scientific findings<sup>17</sup>, the Institute recognises that climate change is expected to have major environmental, economic and social impacts, and poses a serious risk to industries and financial institutions.
- The Australian Actuaries Climate Index (AACI) for Spring 2019 (the latest available at this time) showed a combination of weather conditions that are likely to have increased the likelihood and severity of the Summer 2019/20 bushfires.
- The preventative measures to mitigate and adapt our built environment for the natural perils of today will need to evolve as the climate changes. Specifically, consideration should be given to likely impacts of climate change including: the poleward (southerly) migration of severe cyclones to areas which currently do not have adequate protection against cyclones within building standards; increased intensity of rainfall and flash flooding; increased frequency, intensity and/or duration of heatwaves; potential increase in severe hail; sea level rise increasing storm surge risk; and increased bushfire risk as the number of hotter and drier days increases.

Long-term consideration of climate change is essential as it is likely to trigger further changes in risk and our understanding of it. In particular, the implications of climate change need to be considered in each of the key mitigation and adaptation areas noted above – land use planning, building standards, retrofitting of properties and infrastructure investment decisions.

Based on expert scientific findings<sup>18</sup>, the Institute recognises that climate change is expected to have major environmental, economic and social impacts, and poses a serious risk to the industries that actuaries advise. In particular, the Institute has been developing an understanding of the cyclical weather patterns and monitoring weather patterns to provide insights into the potential links to natural perils. Based on the scientific evidence climate change is expected to result in an overall increase in risks, acknowledging that some risks may decrease.

In late 2018 the Institute launched the Australian Actuaries Climate Index (AACI), an objective measure of extreme weather conditions and changes to sea levels, to help policymakers and Australia's businesses assess how the frequency of weather extremes is changing over time.

The AACI, which includes a number of sub-components, tracks changes in the frequency of extreme high and low temperatures, heavy precipitation, dry days, strong wind and changes in sea level, mainly concentrating on the 99<sup>th</sup> percentile of observations (that is, the top 1 per cent of the most extreme observations). All data is compared to measurements over the 30-year reference period of 1981 to 2010. The index is available for 12 regions of Australia.

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<sup>17</sup> IPCC, 2014: [Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change](#) [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland.

<sup>18</sup> IPCC, 2014: [Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change](#) [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland.

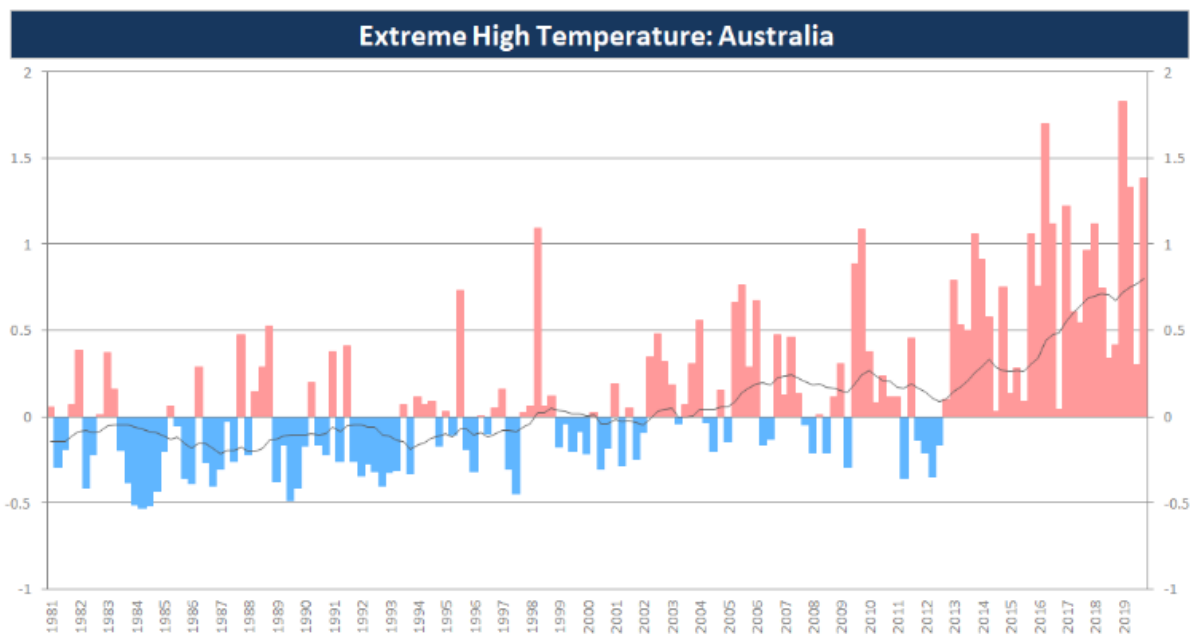


The components of the index were chosen due to their link to risk, an area of expertise for actuaries, and because extremes have the greatest potential impact on people and, often, the largest cost to the economy. The specific value for the threshold for these extremes at the 99<sup>th</sup> percentile varies by region. The index was the culmination of an extensive research and implementation process, including with the Bureau of Meteorology.

The Spring 2019 quarterly update of the AACI (the latest available at the time of this submission) showed a combination of weather conditions that are likely to have fuelled the Summer 2019/20 bushfires. Every region recorded below reference period average extreme rainfall, above reference period average extreme high temperatures and several regions broke records. Every region except Tasmania recorded above reference period average consecutive dry days. The index also showed extreme wind levels for Australia as a whole were the fourth highest on record.

The figure below shows the extreme high temperature component of the AACI for Australia. Additional graphics for other weather components, by region and for all of Australia, are available in the media release<sup>19</sup> and on the [AACI website](#).

**Figure: Australian Actuaries Climate Index**



Notes: Vertical axis shows the standardised anomaly from the average during the reference period of 1981-2010. The black line shows the five-year moving average and bars show individual seasons. A description of methodology issues is available on the AACI website.

As noted in the Institute's media release for this quarterly update fire risk is influenced by a number of weather conditions, including high temperature and dryness, which increase the risk of the initial outbreak of fire, and high winds result in bushfires spreading rapidly.

As also noted, several cyclical patterns affected Australia in Spring 2019, including a neutral El Niño–Southern Oscillation (ENSO), an exceptionally strong positive Indian Ocean Dipole and sudden stratospheric warming over Antarctica. This combination can lead to warmer than

<sup>19</sup> See [Australian Actuaries Climate Index shows extreme conditions prevailed in Spring 2019 with records set across States](#)





average Spring temperatures and below average rainfall across large parts of Australia, which is what occurred.

Specific key likely impacts of climate change which need to be considered in the context of resilience and relief and recovery measures include:

- The poleward (southerly) migration of severe cyclones to areas which currently do not have adequate protection against cyclones within building standards;
- Increased intensity of rainfall and flash flooding;
- Increased frequency, intensity and/or duration of heatwaves;
- Potential increase in severe hail;
- Sea level rise increasing storm surge risk; and
- Increased bushfire risk as the number of hotter and drier days increases.

### 3. Affordability of insurance

Key points:

- General insurance plays an important role in helping Australians understand and manage disasters, but not all risks are insurable and affordability is becoming an increasingly important issue.
- It is difficult for explicit cross-subsidies to persist in a competitive market armed with high resolution pricing tools and a consumer market which has ready access to quotes from a range of companies and no material barriers to changing insurer.
- The Institute encourages the Government to consider affordability concerns and any measures to address them to be informed by the work of the ACCC Inquiry, the Institute submission to that Inquiry and our Working Group's expected publication on this topic mid-year 2020.

General insurance plays an important role in helping Australian households, businesses and governments understand and manage natural disasters. Nonetheless, as noted in section 1, not all risks are insurable, including for the potentially significant intangible losses associated with natural disasters.

Although the Productivity Commission noted in 2015 "in general, insurance markets in Australia for natural disaster risk are working well"<sup>20</sup>, affordability is becoming an increasingly important issue. Affordability concerns have grown with the refinement of risk intelligence and risk-based pricing and insufficient investment in mitigation and adaptation.

Risk based pricing is intended to have the positive effect of sending economic signals about risk and providing incentives for risk mitigation and adaptation, thus lowering aggregate costs for all Australians over time. However, a limited cohort of policyholders may experience significant insurance price increases when moving from a prior state of less refined rating to one focused on risk at the location level.

The protection gap arising from non-insurance and underinsurance is more complex than just the pricing levels of insurance. Affordability of insurance is also a function of homeowners'

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<sup>20</sup> [Productivity Commission, Natural Disaster Funding Arrangements, p.214](#)





perception of need and value of insurance, their income and funds available to pay premiums, and whether the change in premium from one year to the next is reasonably within the household budget.

One tool for managing affordability is cross-subsidies. It is, however, difficult for explicit cross-subsidies to persist in today's insurance market. The supply of insurance is competitive, including that insurers use high resolution pricing tools to understand and provide for risk at address level. On the demand side, consumers have ready access to quotes from multiple insurers and no material barriers to changing insurer. Insurers which therefore cross subsidise from low risk addresses to high risk addresses (by overpricing policies on low risk properties and underpricing on high properties) would face a loss of many, if not all, customers of low risk properties and influx of customers of high risk properties. The result will be an insurer with insufficient premium revenue to build adequate reserves, cover expected claims costs and honour claims.

Other mechanisms to ensure affordability therefore need to be considered. Mechanisms warranting investigation include (but are not necessarily limited to) operation of a reinsurance pool whereby governments accept some risk to take specific natural disaster risk off insurers, schemes to support retrofitting for resilient homes, grants or tax allowances for insurance premiums (similar to health insurance) and compulsory basic insurance (at least in relation to some natural perils).

Reflecting the importance and complexity of these issues, an Institute Working Group is conducting further research. The Institute encourages the Government to consider affordability concerns and any measures to address them to be informed by the work of the ACCC Inquiry, the Institute submission to that Inquiry and our Working Group's expected publication on this topic mid-year 2020. We also refer the Royal Commission to APRA's submission to that ACCC Inquiry.

#### 4. Health impacts

Key points:

- The Institute urges government to explore ways to increase the preparedness of communities and the health system for the health effects of heatwaves and bushfire smoke, two natural perils with material health consequences that are more likely to occur in the future due to climate change.
- Delivering effective mental health support following a natural disaster also needs advance preparation and early intervention. The Institute urges government to adopt the roadmap set out in the *Beyond Bushfires Study*. We also encourage the use of risk-based forecasting tools to help identify those most at risk and the Government consider a role for an adviser, which could include private health insurers, to help people effectively navigate the health system.

Heatwaves have killed more Australians since 1890 than bushfires, cyclones, earthquakes, floods and severe storms combined. As discussed in Section 2, extreme heat events are becoming an increasingly common occurrence throughout Australia due to climate change. Heatwaves are associated with increased risk of heat related deaths and illness, with consequential impacts on community, infrastructure and services as well as heightened bushfire risk in some situations. Most State and Territory governments recognise these risks and have prepared emergency management plans designed to ensure that public health services



are well prepared to manage during a heatwave, even if critical infrastructure fails. There is a range of maturity across these plans. Some lack strong processes for audit and ongoing review, others have not set minimum standards for content in sub-plans, and publicly available information on how these plans are tested or assessed (in advance of a major event) is scant. The Institute encourages ongoing improvements to increase the preparedness of all States to respond effectively to a prolonged heatwave.

In addition, long term bushfire resilience also means focusing on health preparedness well before bushfire seasons. Two key areas specific for bushfires are respiratory and mental health.<sup>21</sup> At some time during this bushfire season 80 per cent of Australia's population was blanketed by smoke. Sydney, for example, experienced more than 80 days of poor air quality in 2019, including 28 days categorised as 'hazardous'<sup>22</sup>. Health information was confusing and unclear, with Asthma Australia urging people to seek 'clean air shelters', which for many simply meant leaving the city. Research recently published in the Medical Journal of Australia estimated that bushfire smoke in 2019-20 was responsible for 417 excess deaths in Australia – far more than were directly killed during the bushfires; there were 1,124 hospitalisations for cardiovascular problems, 2,027 hospitalisations for respiratory problems and 1,305 presentations to emergency departments with asthma.<sup>23</sup>

The Institute urges government to explore ways to prepare communities well in advance for the health effects of bushfire smoke. First, less than one-third of Australians with asthma have a written asthma plan<sup>24</sup>, despite compelling evidence that such plans reduce asthma attacks, hospital visits, emergency visits to GPs and days off work<sup>25</sup>, and recommendations from the National Asthma Council that every person with asthma must have such a plan. We must do better. Furthermore, respiratory health is important in the COVID-19 pandemic - yet another reason for investing in better preventative care.

Second, delivering effective mental health support following a natural disaster also needs advance preparation and early intervention. The Beyond Bushfires Study<sup>26</sup> of the 2009 Black Saturday bushfires identified that five years after those fires one-fifth experienced serious mental health challenges. The research identified key factors occurring both during and in the immediate aftermath of the bushfires that increased the risk of poor mental health.<sup>27</sup>

It found that the stress of having to navigate a system that is often poorly targeted and/or coordinated led to poorer mental health outcomes.

The Institute's submission to the Productivity Commission review of mental health<sup>28</sup> highlighted the important role that private health insurance plays in funding mental health services, and asked the Government to consider a role for private health insurers in helping their customers effectively navigate the health system; this role could also be served by others to ensure all

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<sup>21</sup> Further discussion of some of these issues is provided in [The Impact of climate change on mortality and retirement incomes in Australia](#).

<sup>22</sup> NSW Department of Planning, Industry and Environment

<sup>23</sup> Borchers Arriagada N et al, Unprecedented smoke-related health burden associated with the 2019-20 bushfires in eastern Australia, *MJA* 12 March 2020

<sup>24</sup> ABS (Australian Bureau of Statistics) 2018. *National Health Survey: First results, 2017-18*. ABS cat. no. 4364.0.55.001. Canberra: ABS

<sup>25</sup> Gibson PG, Powell H. *Written action plans for asthma: an evidence-based review of the key components*. Thorax 2004; 59: 94-99

<sup>26</sup> Gibbs L, et al. *Beyond Bushfires: Community Resilience and Recovery Final Report*. November 2016, University of Melbourne, Victoria, Australia

<sup>27</sup> There are also excellent resources available from New Zealand following their experience with earthquakes; see, for example, <https://www.mentalhealth.org.nz/earthquake-information/>

<sup>28</sup> Available at <https://www.actuaries.asn.au/Library/Submissions/Health/2020/MentalHealthInquiry.pdf>



people, irrespective of their insurance coverage, receive appropriate care. That submission also identified the need to explore clinical workforce availability and training, a particularly challenging issue in regional areas affected by bushfires. The Institute encourages early intervention and the use of risk-based forecasting tools to help identify those most at risk of mental injury following a natural disaster<sup>29</sup>. Finally, we urge government to adopt the roadmap set out in the *Beyond Bushfires Study* to address individual mental health needs and build community resilience.

## Conclusions

We thank the Royal Commission for the opportunity to make this submission. If you would like to further discuss this with us, please contact Elayne Grace, Chief Executive Officer of the Actuaries Institute, [elayne.grace@actuaries.asn.au](mailto:elayne.grace@actuaries.asn.au) or on (02) 9239 6100.

Yours sincerely

Hoa Bui  
President

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<sup>29</sup> Available at: <https://www.actuaries.asn.au/public-policy-and-media/thought-leadership/green-papers/mental-health-and-insurance>