Australasian College
for Emergency Medicine

34 Jeffcott Street West Melbourne Victoria 3003, Australia
+61 3 9320 0444 | admin@acem.org.au | ABN 76 009 090 715

Submission to the House Standing Committee on the Environment and Energy regarding the Climate Change (National Framework for Adaptation and Mitigation) Bill 2020

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Introduction

The Australasian College for Emergency Medicine (ACEM; the College) welcomes the opportunity to respond to the House Standing Committee on the Environment and Energy's call for submissions on the Climate Change (National Framework for Adaptation and Mitigation) Bill 2020 (The Bill).

As the peak professional organisation for emergency medicine, ACEM is responsible for the training of emergency physicians and the advancement of professional standards in emergency medicine (EM) in Australia and New Zealand. ACEM has a vital interest in ensuring the highest standards of medical care are provided for all patients presenting to an emergency department (ED).

As physicians trained in the scientific method, we have great trust in the research and evidence of the thousands of scientists who have demonstrated unequivocally and overwhelmingly that human-produced greenhouse gases (such as CO_2, methane and nitrous oxide) contribute significantly to global warming.

The evidence for climate change is unequivocal, overwhelming and touches every aspect of life on this planet. The Intergovernmental Panel on Climate Change , an expert panel of 1300 independent scientific experts has concluded that there is a greater than 95% probability that over the last 50 years, human produced greenhouse gases (such as CO_2, methane and nitrous oxide) have contributed significantly to global warming. Concentrations of CO_2 have risen precipitously from 280 to over 400 parts per million in the last 100 years.

We are deeply concerned about the short and long-term impacts of climate change on the physical and mental health of our population, as well as the capacity and ability of EDs, our health systems and the medical workforce to cope with increased demand and more frequent and intense disasters.

Climate change is the greatest present risk to global population health[i] and immediate action is needed to mitigate irreversible change to the environment and the consequential effects on people's health. In the last 25 years, weather-related disasters such as heatwaves, droughts, floods, storms and bushfires have increased in intensity and frequency causing increased injury, morbidity and mortality.[ii] Ongoing climatic changes resulting in rises in global temperatures and extremes of precipitation have both immediate and delayed health impacts. Projections show that climate change will cause a significant rise in the number of overall ED presentations, an increase in the complexity of presentations as well as surges resulting from climate disasters.[iii]

Increased heat and aeroallergens have led to global increases in asthma and chronic obstructive pulmonary disease (COPD) attributed ED presentations.[iv] Climate change also impacts indirectly on human health, with a clear association between increased heat, mental illness and ED presentations.[v]

Australian EDs are at the forefront of these impacts, which will only worsen in years to come. Given that many EDs and hospitals are already operating at or above capacity, climate change presents a risk in the ability of EDs and hospital systems to cope. As physicians at the forefront of our health system, ACEM will address the health impacts of climate change in this submission.

ACEM believes all levels of government need to take immediate, effective, evidence-based and sustained action to address and mitigate the impacts of climate change. As part of the Australian Government's contribution to this urgent issue, ACEM supports the introduction of the Climate Change Bill 2020 by Independent MP Zali Steggall, and in particular, the establishment of a National Climate Change Adaptation and Mitigation Framework, a Climate Change Risk Assessment for Australia and the creation of a Climate Change Commission.

1. ACEM's Position on Climate Change

ACEM considers climate change and the associated health impacts to be a population health emergency.

Climate change presents an immediate risk to the capacity and ability of EDs, health systems and the medical workforce to cope with increased demand and more frequent and intense disasters. Climate change is a medical emergency; it thus demands an emergency response. ACEM calls for urgent action to establish mechanisms to mitigate and adapt to these threats to ensure the ongoing sustainability of our health systems.

ACEM calls on governments at all levels, including the Australian Government, to take immediate and sustained action to address and mitigate the impacts that this climate emergency presents.

ACEM supports efforts to minimise the impact of climate change and actively supports measures to reduce the carbon footprint of hospitals and health systems.

2. Health Impacts on the Community

Over a decade ago *The Lancet* identified climate change as the single biggest threat to the health and wellbeing of the global population in the 21st Century.[vi] The health effects of climate change are already being felt both locally and globally as a result of rising temperatures, poorer air quality and increasingly frequent natural disasters. The World Health Organisation (WHO) estimates that climate change will cause over 250,000 additional deaths globally between 2030 and 2050[vii].

2.1 Heat

Although it does not garner the media attention of all the other climate related events, heat illness has killed more people in Australia than all other natural disasters, in aggregate, since 1900.[viii] In fact, more people died in the 2009 heatwave than the subsequent 'Black Saturday' fires.

Populations at increased vulnerability to heat-related morbidity and mortality include the elderly or very young, pregnant women, people living with chronic cardiorespiratory or mental illness, those living with disability, people experiencing socioeconomic disadvantage or coming from non-English speaking backgrounds, homeless people and outdoor workers. With an ageing population, this already significant cohort will increase. These groups in aggregate make up most Australians, such that every family will have at least one member, if not more, who is at higher risk – a child, a pregnant woman, a person over 65, a person living with a chronic condition or a disability.

Urban populations, particularly those of a lower socioeconomic status, are at higher risk of adverse health outcomes due to the 'heat island effect' which results in densely populated and urbanised areas being warmer than surrounding areas due to city design.[ix] Rural, remote and isolated communities are also vulnerable to the impacts of climate change due to the social and economic impacts of drought compounded by increased isolation and poorer infrastructure.

In Australia, extreme heat conditions are linked with large increases in hospital ED presentations, admissions and deaths.[x] As an example, the 2009 Victorian heatwave resulted in a 12% increase in overall ED presentations compared to the same time in the five years prior.[xi] However, the largest increase was seen in people aged over 75; these presentations increased by 37%.[xii] There are also increased presentations to EDs with people with mental health issues and suicidal ideation during periods of extreme heat.[xiii] In terms of the acuity of all presentations, resuscitation presentations (ATS 1) increased by 64%, emergency presentations (ATS 2) increased by 26%, and presentations considered urgent (ATS 3) increased by 25%.

2.2 Respiratory Illnesses and Poor Air Quality

Increased heat, aeroallergens and extreme weather as a result of climate change have led to global increases in asthma and COPD attributed ED presentations.[xiv, xv] The population cohort at increased vulnerability to poor air quality overlaps significantly with those at increased risk from heat. Furthermore, the effects of hazardous air quality events are amplified when the events coincide with heatwaves, as commonly occurs during bushfire season, with an increased risk of mortality.[xvi]

Air pollution over the last bushfire season (2019-20) was estimated to have contributed to 417 excess deaths, 1124 hospitalisations for cardiovascular problems and 1305 presentations to Emergency Departments with asthma in NSW, Queensland, the ACT and Victoria.[xvii] NSW data shows a distinct increase in presentations with a principal diagnosis related to diseases of the respiratory system (and particularly asthma and COPD) during the December 2019.[xviii]

Exposure to bushfire smoke has a number of hidden short and long-term impacts, many of which are being examined now in light of unprecedented population exposures to prolonged smoke events. Of particular note is the emerging evidence of negative health effects for pregnant women. There is already evidence that exposure to bushfire smoke during pregnancy is associated with gestational diabetes and lower birthweight in babies.[xix] In-utero exposure to a prolonged smoke event, the Hazelwood coalmine fire, was associated with increased respiratory infections and wheeze.[xx]

Respiratory illness may also increase due to the confluence of extreme weather, such as thunderstorms, with extended pollen seasons which raise the risk of more frequent epidemic thunderstorm asthma events, such as those seen in Melbourne in 2016 that resulted in nine deaths.[xxi]

2.3 Natural Disasters

In the last 25 years, weather-related disasters such as heatwaves, droughts, floods, storms and bushfires have increased in intensity and frequency causing increased injury, morbidity and mortality.[xxii] Ongoing climatic changes resulting in rises in global temperatures and extremes of precipitation have both immediate and delayed health impacts. Australasian EDs are at the forefront of these impacts, which will only worsen in years to come. Projections show that climate change will cause a significant rise in the number of overall ED presentations, an increase in the complexity of presentations as well as surges resulting from climate disasters.[xxiii] For example, Townsville Hospital reported a 40% increase in ED presentations as a result of cyclone Yasi compared to the two years prior.[xxiv] The closure of community health, primary care services and loss of power to homes also contributed to increased presentations.[xxv] Given that climate disasters will only continue to increase in intensity and frequency, EDs will need to be staffed and equipped with resources including space and an appropriate surge response to cope.[xxvi]

The necessary steps to address such environmental catastrophes in future have been set in out in great detail by the 2020 Royal Commission into National Natural Disaster Arrangements.[xxvii] Many of the principles arising from the Royal Commission are applicable dealing with the health impacts of climate change.

Between 80-90% of all documented disasters from natural hazards during the past 10 years have resulted from floods, droughts, tropical cyclones, heat waves and severe storms.[xxviii]

2.3.1 Bushfires

Bushfire events are a dramatic illustration of the future we face with unmitigated climate change. The 2019–2020 season has been unprecedented according to experts in the field, in terms of its immediate morbidity (direct effects of fire, risk multipliers for those with chronic diseases, effects from participate air pollution and mental health crises) and mortality effects on affected communities. Effects will be felt far more insidiously with long term disruptions to families and their livelihoods, infrastructure and the social fabric of communities.

2.3.2 Storms and Flooding

Like bushfires, storms and flooding can have immediate and long-term effects on the health of populations. In the short term, the effects include immediate morbidity and mortality related to injury and drowning, disruption to supply chains for safe food, water, and medical supplies, physical damage to health care facilities, increased exposure to water-borne illnesses and zoonotic disease, psychological distress and loss of shelter. Long term effects are like those of other natural disasters, particularly psychological impacts.

2.3.3 Drought

Fifty-five million people are affected by droughts every year, making them the most serious hazard to livestock and crops in nearly every part of the world. Rising temperatures caused by climate change are making already dry regions drier and wet regions wetter. In dry regions, this means that when temperatures rise, water evaporates more quickly, and thus increases the risk of drought or prolongs the length of drought.

Australia's status as a high-income country does not prevent us from being impacted by drought, which has been seen to ruin livelihoods, increasing the risk of disease, water and food shortages and death.

2.4 Mental Health

The data demonstrating the direct and immediate mental health impacts of climate-related disasters can be easily quantified however climate change's more gradual effects, like rising temperatures and unpredictable weather patterns, also have important implications for mental health.[xxix]

Documented impacts include increased stress, anxiety, depression and post-traumatic stress disorder (PTSD). Women, children, and older adults tend to be especially vulnerable to the mental health impacts of climate change.[xxx] A clear association has also been established between increased heat, mental illness and ED presentations.[xxxi]

Having experienced prolonged drought, Australians are also familiar with the mental health challenges that long-term climate events can have, leading to increasing suicide, family breakdown and social upheaval.[xxxii]

With communities experiencing prolonged and repeated climate-related events, the resilience and recovery of these populations is likely to be severely compromised with all the related secondary chronic impacts on mental and physical health.

2.5 Chronic Health Conditions

Many of the health effects of climate change are less obvious but no less damaging; they are risk multipliers for chronic disease. Diseases affecting almost every system of the body can be affected adversely by climate impacts. More subtly, but arguably no less damaging, are the generational and legacy impacts on the social determinants of health including those of the unborn child.

The AIHW estimates that nearly 90% of all deaths in 2018 were related to the highest frequency chronic diseases in Australia, that nearly 1 in 2 Australians had at least one of these top 10 chronic diseases, that these diseases are more prevalent in the socioeconomically disadvantaged, and that around 20% of Australians are

multi-morbid in that they have 2 or more chronic disease.[xxxiii] This is the same cohort who are at increased risk of vulnerability to climate change.

Chronic disease presents a huge economic burden on the Australian health care sector which will be exacerbated as chronic disease worsens as a result of climate change.

Furthermore, the effects of climate change will have a disproportionate impact on vulnerable populations—old/young/non-English speaking/socioeconomic disadvantaged/mental health/outdoor workers. As noted by ACEM President, John Bonning, 'research also shows that climate change will exacerbate existing health inequities.'

2.6 Pandemic, Zoonoses and Vector-Borne Disease

2020 has been described as a generation-defining year and has been compared to the Spanish Flu outbreak of 1918. However, looking ahead it is unlikely to be the only large-scale pandemic outbreak in our living memories.

The interconnectivity of global economic infrastructure and supply chains, in particular those related to the provision of health care such as pharmaceuticals and medical equipment (for example face masks) has clearly illustrated the vulnerability and difficulties of provision of healthcare in a world susceptible deadly diseases.

Changing weather patterns throughout Australia are leading to already established changes in patterns of distribution of vector-borne diseases such as dengue fever, malaria and even water-borne vectors such as Irukandji jellyfish.

Beyond the direct negative health effects of pandemic disease, an overwhelmed health system can cause significant short- and long-term indirect health effects. Even in Australia, with our relatively successful COVID-19 pandemic response, there have been reports of decreased presentations to EDs and General Practitioners, decline in uptake of routine cancer screening, and delays in elective surgery. The economic impact of pandemics may further exacerbate health inequities and the profound psychological impact of the pandemic.

3. Health System Impacts of Climate Change

3.1 Surge Capacity

Many frontline responders and systems, even prior to events such as COVID-19 and the bushfire season, were chronically and dangerously impacted by a system operating over capacity. There is copious evidence that ED overcrowding for instance leads to excess mortality and morbidity.[xxxiv] Extreme events and large-scale public health crises will only add to this pressure and endanger the lives of all those who access healthcare.

3.2 Workforce Issues

The current profile of the medical workforce distribution in Australia is under review at the highest levels within government and is seen as a priority area for delivery of a sustainable medical workforce in the future. ACEM is actively participating in modelling and strategy development to mitigate against inequitable access to healthcare for those who live rurally and remotely. It is likely that these populations are also going to be more vulnerable to the effects of climate change due to their isolation, socioeconomic profile, and unique economic exposure to events such as drought and flooding.

In addition, states and territories disproportionality at risk of population heat-based morbidity are often overwhelmed during heat waves and this is likely to worsen. The number of excess ED presentations due to heatwaves in Brisbane have been forecast to double by 2030 which will place increasing pressure on the health system and on the workforce if appropriate planning does not occur.[xxxv] Even if some health services are

currently managing the increased demand imposed by heat events, this should not be considered a safe assumption moving forwards; it is predicted that the length, frequency and intensity of these events will increase in the future.

Health services and providers in areas exposed to climate change events will be disproportionately affected by events such as flooding and bushfire. They will likely need different and expanded health workforces to meet the increasing demands of at-risk populations. Prevention and public health messaging and strategies to mitigate against effects such as vulnerability to heatwave events will be critical to ensuring the impacts of the health care system are minimised by such events.

4. Climate change and sustainability through the current health lens

Recent estimates indicate that health care currently contributes 7% of Australia's carbon footprint, with public hospitals contributed to about half of this footprint.[xxxvi] As such, EDs and hospitals have important roles to play in mitigating climate change and improving sustainability. Health care systems are major contributors to the carbon footprint through hard infrastructure (buildings as well as waste, water, energy and food management practices) and process management (procurement and supply chains e.g. pharmaceuticals, business management practices, workforce practices, transport and use of consumables).

ACEM hopes the proposed Bill, including the National Climate Change Adaptation and Mitigation Framework and the Climate Change Risk Assessment for Australia, will give careful consideration to how we can address these heath system components, leading to a significant impact on the carbon footprint of the health system.

Internationally, about half of the 53 member states of the WHO European Region have included health in their national adaptation strategies. The experience from the NHS Sustainability Unit has demonstrated that there are significant cost savings to be made from an early and genuine commitment to climate change mitigation in healthcare. Between 2007 and 2015 the NHS reduced its carbon emissions by 11% – exceeding the 10% target set in 2009, despite health and care activity increasing by 18%. This represented a saving of £1.85bn, and more broadly, the first steps in a transition towards a sustainable and resilient health and care system.[xxxvii]

ACEM believes that health considerations should be one of the lenses through which all future climate change mitigation and adaptation policies, strategies and measures are viewed. This aligns with the UN Sustainable Development Goal 3 to 'Ensure healthy lives and promote well-being for all at all ages', underpinned by the associated 13 targets that cover a wide spectrum of WHO's work. We believe that the strategies to create climate resilient communities should be achieved through evidenced-based public health and health service interventions.

The current fragmented state by state response to sustainability in health has been detrimental to any progress to mitigate health impacts of climate change. While state governments have taken a substantial lead on climate action, a coordinated national approach is needed.

ACEM supports efforts to minimise the impact of climate change and actively supports measures to reduce the carbon footprint of hospitals and health systems.

5. Conclusion

Climate change is of serious concern to emergency physicians, who are committed to the health and wellbeing of the Australian public. We hope the above overview of health concerns and system impacts provides an insight into the important links between climate change and health, and encourages all members of parliament to support the adoption of the proposed Bill and take national leadership to address this issue.

This position reflects our unerring commitment to provide the best quality medical care for every person in Australia and New Zealand, as well as our deep concern for the health, wellbeing and future of our immediate neighbours in the South Pacific and Asia. As an organisation, we do not believe we deliver good medical care

without advocating on the health impacts of climate change to our patients, as well as the welfare of all health care workers and the health of the systems in which we operate.

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