

From: [Code Green](#)
To: [Hazelwood Info Shared Mailbox](#)
Cc: [Nicky Betts](#); [Alice McGushin](#)
Subject: Submission to Hazelwood Mine Fire Inquiry
Date: Sunday, 9 August 2015 7:49:01 PM
Attachments: [AMSA submission to the Hazelwood Mine Fire Inquiry 2.0.pdf](#)

Dear Hazelwood Mine Fire Inquiry,

Please find attached a submission prepared by the Australian Medical Students' Association.

Should the Board require any further information or clarification, please do not hesitate to contact myself.

Sincerely,

Grace FitzGerald

Australian Medical Students' Association submission to the Hazelwood Mine Fire Inquiry



The Australian Medical Students' Association (AMSA) is the peak representative body for Australia's 17,000 medical students. AMSA's key mandate is to connect, inform and represent students studying at each of the 20 medical schools in Australia. Furthermore, AMSA believes that all communities have the right to the best attainable health, and accordingly seeks to advocate on issues that may impact health outcomes.

The Hazelwood Mine fire resulted in a range of health impacts to people of the Morwell community, and will continue to affect the health of communities on a much broader scale. AMSA seeks to address terms of reference 6 and 7 of the current Board of Inquiry.

Key points

- The Hazelwood Mine fire was an avoidable public health emergency, reflective of a failure of planning by the Victorian Government, the Health Department and GDF Suez to appropriately protect communities in the Latrobe Valley
- The negative health effects of long-term exposure to pollution from coal combustion are well known, and there is considerable concern regarding the health effects of acute exposures to coal related emergencies such as mine fires
- AMSA strongly recommends that the Board implement measures to address removal of ongoing exposure risk, timely screening and detection of mine fire-related illness, and provision of accessible healthcare for long-term consequences
- AMSA recommends that the Board assesses the risks to health in communities affected by continued Victorian reliance on coal-fired power generation
- AMSA recommends that the Victorian and Federal Governments make meaningful endeavours to work in close consultation with local communities to develop a regional economic development plan enabling the transition away from coal as an energy source for Victoria

Failure to protect Morwell and surrounding Communities

An average of 300 fires per year have occurred since the Hazelwood mine's inception, and consecutive sets of recommendations for mitigating this risk have not been implemented (1). The mine fire at Hazelwood in early 2014 was a preventable health emergency that was managed poorly by the health department, by the government, and by GDF Suez.

Despite the forecast of an acute bushfire threat near Morwell in February 2014, there was little preparation to prevent the mine fire, and inadequate effort put into fighting the fire when it occurred (2, 3). Management of the

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fire was compromised by a decision not to use water resources that could have been used to flood the mine, in order to maintain water supply to the adjacent coal fired power station, and prevent any interruption to its operation (1).

Further, measures of PM2.5 as high as 279.7ug/m³ were sufficiently serious to prompt evacuation advice from independent experts on 27 February 2014 (4). Yet the Chief Health Officer failed to enact evidence-based protocols regarding appropriate responses to the threat to health posed by this level of air pollution, and avoidable exposure to noxious emissions of the mine fire was prolonged (5).

There were a number of failures: foresight on the part of both the mine owner and successive Victorian governments. Given the known level of fire risk, there was a failure in planning on behalf of both government and GDF Suez to prevent the 2014 fire. The failure of the mine owners to adequately rehabilitate the disused mine and the failure of successive governments to require appropriate liability bonds, should disasters occur, have both contributed to ongoing trauma in the communities surrounding Hazelwood (6, 7).

As is common in areas of open-cut coal mining, government and industry have treated the people of Morwell and surrounding regions as residents of a 'sacrifice zone' (8). The interests of the workforce, the surrounding community and environment of the open cut mine at Hazelwood have been sacrificed to allow continuation of extractive processes.

Measurement of deaths attributable to mine fire

In light of the avoidable circumstances of the mine fire, any deaths attributable to this public health disaster can be seen as no less than tragic. The sixth term of reference of the a board of inquiry into the Hazelwood Coal Mine Fire is of importance, and will require a resource intense and theoretically sound response.

Eleven deaths were directly attributed to the mine fire between February and March of 2014 (9). The determination of death rates beyond this period will be hampered by immense methodological challenges.

As discussed in further detail below, chronic conditions such as obstructive pulmonary disease, lung cancer and heart failure attributable to exposure to the mine fire contribute to deaths long into the future.

Defining an exposed population is difficult, as over 7000 fire-fighters came into the Morwell area over the duration of the fire, and many in the Latrobe Valley at the time were holiday-makers (7). The propensity of ash and emissions from the coal fire to travel over great distances disperses the risk of death associated with the mine fire over a great geographical distance.

For these reasons, it is imperative that close attention is paid to other markers and measures of health and wellbeing, above and beyond the rates of deaths in affected communities.

Ongoing and future risks to health

The consequences of the combustion of coal are well established in scientific literature, and the emissions from the combustion of coal are known to affect health over a wide area of combustion (10). Thus the impact of air pollution from the coalmines and coal-fired power plants in the Latrobe Valley is not confined to the local community, but poses a threat to the health and wellbeing of the broader regional and Victorian community. This health burden from pollution makes it an issue of national and global significance.

The short and long term risks of harm to health in the Latrobe Valley are ongoing, as PM10 emissions from electricity generation have increased in the Valley by 28% during the last five years and PM2.5 (dangerous fine particle) emissions increased by 27% (11). Both the World Health Organization and the International Agency describe PM 2.5 as a class 1 carcinogen for Research on Carcinogens (12).

Coal combustion affects at least three of the nine National Health Priority Areas: cancer control, cardiovascular health and asthma. Every aspect of the life cycle of coal, including mining, preparation, combustion and waste disposal is detrimental to human health (13). Combustion of coal produces small particulates less than 2.5µm and less than 10µm (PM2.5 and PM10) as well as carbon monoxide, methane, sulphur, nitrogen oxides and trace elements such as arsenic and mercury (14, 15).

The respiratory risks of exposure to these particulates include the development and exacerbation of asthma and chronic obstructive pulmonary disease (COPD), stunted lung development and lung cancer. Cardiovascular risks include ischaemic heart disease, dysrhythmias and heart failure; neurological effects include ischaemic stroke and developmental delay (14). European data estimates that greater than 24 deaths per TWh are directly attributable to power generated by coal – and up to 32 deaths per TWh are attributable to lignite, or brown coal, the primary raw material of combustion in the Latrobe Valley (16, 17).

While there are limited studies of the health impacts of short term exposure to smoke from coal mine fires, much can be deduced from studies of the health impacts of bushfires which result in increased rates of cardiac arrest and exacerbations of asthma and COPD (4). Other threats posed by bushfires, such as radiant heat exposure, dehydration and heat exhaustion and inhalation of toxic gases cannot be ignored in the context of mine fires. Inhalation of toxic gaseous components of smoke (carbon monoxide, cyanide

gas, acids, aldehydes and oxidants) can result in local airway injury and inflammation and impair oxygenation (18).

Survivors of bushfires in Australia have repeatedly been demonstrated to experience higher rates of anxiety, depression and post-traumatic stress disorder (19, 20). As per modelling conducted in the wake of the 2009 Victorian bushfires, the burden of emotional and psychological distress is likely to be most pronounced in vulnerable populations, and to have a particularly prominent impact on children (21). The effects of these exposures on psychosocial wellbeing are longstanding (22).

Scope of response required

The most efficient means of addressing future threats to the health and wellbeing of both the Latrobe Valley communities and the communities across Victoria is the removal of the risk of coalmine fires. This entails the phasing out of coal-fired power generation, rehabilitation of expired mine fire areas, and at a bare minimum improvement of management and response protocols.

In the short term, it is imperative that communities in Morwell and the Latrobe Valley are provided with the resources to mitigate the consequences of any exposure to residual matter from the 2014 fire. Ash residue must be professionally cleaned from both domestic and commercial properties; facilitated by financial assistance and access to appropriate equipment.

In the medium term, many of the health consequences of the mine fire will require rapid detection for appropriate management. To this end, the Morwell community should be supported in establishing screening and early-detection practices. There should be efforts made to increase community awareness of symptoms and signs of illness potentially associated with exposure to the mine fire, and clear pathways identified for community members to access professional assessment and support.

A lack of existing health infrastructure in the Latrobe Valley has been repeatedly identified as a concern of local residents (23). In order to adequately respond to the health needs of the community now and as further consequences of the mine fire eventuate, it is of utmost importance that access to timely and appropriate health care is improved in the region. The Hazelwood Health Study to be undertaken by Monash University must be supplemented by clinical care; it is not enough to monitor health impacts of the mine fire without intervening in them (24).

To reduce ongoing health effects of coal-fired power, Victoria must expand its renewable energy generation. Increasing renewable energy sources will result in health co-benefits for Victorian communities, especially those in the Latrobe Valley. These health co-benefits would include reducing the burden

of disease of Australia's national health priority areas, including cancer, cardiovascular health and asthma.

Climate Change and the need to transition away from coal-fired power

For Australia, an increase in global temperature will result in more heat-waves, which threaten vulnerable populations in our society like the young, the old and the already ill. We are already experiencing and are likely to continue to see an increase in frequency and severity of extreme weather events such as cyclones, floods, storms and bushfires which have the potential to devastate the health of communities directly as well as the health infrastructure that supports them (25). Areas of Australia also face more severe drought, impacting on agricultural, mining, urban and environmental water use.

With an increase in bushfires and extreme weather events as a result of climate change, the risk of coal mine fires also grows in Australia (26). Given the vast areas of Victoria, NSW and Queensland occupied by highly flammable open cut coalmines, this is an issue of great national significance.

The global agreement to limit warming to less than two degrees above preindustrial temperatures means coal is no longer viable, neither socially nor environmentally acceptable as an energy source, given the catastrophic risks to human health from global warming (27, 28).

Australia has the economic and technological tools to rapidly cut fossil fuel emissions whilst still seeing economic growth (29). The health co-benefits of a transition to a decarbonised economy are immense (27).

Government intervention is required to assist in the development of new industries to replace coal and other fossil fuels, in close consultation with affected communities and alternative, low-carbon industries.

Conclusion

AMSA recommends sustained, carefully targeted investments in primary healthcare services in the Latrobe Valley to meet increased healthcare demands associated with exposure to the Hazelwood fire. Development of adequate health care services in the region must have the capacity to respond to consequences of ongoing exposure to pollution from the coal mine and coal-fired power station, along with psychosocial and socio-economic health impacts linked to the 2014 mine fire event. In order to protect the health and wellbeing of Victorians, Australians and people globally, the Victorian and Federal Governments must invest in an effort to develop a regional economic development plan for a transition away coal-fired power generation. There must be allocation of policy and financial instruments implemented to support the development of alternative, low-carbon, industries to provide jobs in the affected regions, in close consultation with local communities.

Thank you for taking our views into consideration and please contact us for further information or clarification.

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