



Asthma Australia Submission to the Victorian Legislative Council Environment and Planning Committee

Inquiry into Health Impacts of Air Pollution in Victoria

April 2021

About Asthma Australia

Asthma Australia is a for-purpose, consumer organisation which has been improving the lives of people with asthma since 1962.

Asthma is an inflammatory condition of the airways, which restricts airflow and can be fatal. There is no cure, but most people with asthma can experience good control of their condition.

Asthma affects one in nine Australians, or 2.7 million people. It has various degrees of severity (mild to severe) and affects people of all ages, from childhood to adulthood. Asthma can appear at all ages and stages of life.

Asthma Australia's purpose is to help people breathe better so they can live freely. We deliver evidence-based prevention and health strategies to more than half a million people each year. To ensure people can access effective treatments and best practice healthcare for their asthma, we work directly with people with asthma, their family and friends, health professionals, researchers, schools and governments. This way, we can ensure people with asthma are supported with education and access to high-quality information and care where they live, work and play in all stages of life.



Asthma in Victoria

Asthma is a chronic respiratory condition affecting 11.4% of Victorians, or more than 714,000 people.¹ Asthma prevalence is higher in regional Victoria (14.2%) compared with the Greater Melbourne Region (11.2%). Areas with the highest asthma prevalence in Victoria include Barwon-West (15.9%), Bendigo (15.3%) and the Latrobe Valley (15.2%).²

Asthma places a significant burden on Victorian hospitals. There were 11,628 hospital admissions for asthma in Victoria in 2016/17.³ Approximately 4,000 of these hospitalisations were due to the thunderstorm asthma event in November that year, which tragically caused 10 deaths.⁴ Almost half of all hospital admissions were for children aged 0-14 years.⁵ In 2016/17, Victoria had the second highest hospital admission rate for asthma at 189 per 100,000 people compared with the national rate at 173 per 100,000 people.⁶ An uncomplicated hospital admission costs approximately \$2,591 (approximately 1.5 hospital days) and a complicated admission costs \$5,393 (approximately three hospital days).⁷

Asthma was the diagnosis on admission to Victorian Emergency Departments for 22,970 people in 2016-17.⁸ Each Emergency Department presentation for asthma costs \$443 on average,⁹ and repeated asthma-related presentation to Emergency Department is associated with an increased risk of hospitalisation.¹⁰ 40% of adults and 62% of children re-present to emergency departments within one year of initial presentation.¹¹ It is estimated that one-third of Emergency Department presentations for asthma are avoidable.¹²

Asthma was the cause of death for 117 Victorians in 2019, at a rate of 1.3 per 100,000.¹³

Introduction

“Although COVID, lockdown and the resulting lack of freedom and fear caused some distress in the community, for me having the very air I breathe taken away was way worse. I would be happy to live in lockdown for some years at a time, rather than have such polluted air to breathe. In lockdown I had my house and I could go for a walk. During the bushfires, even my bedroom was unsafe and brought no relief.”

Melbourne resident with asthma

Asthma Australia welcomes the opportunity to submit to the Environment and Planning Committee’s Inquiry into the health impacts of air pollution in Victoria. Victorians are exposed to consistent sources of air pollution such as emissions from woodfire heaters, vehicles and industry, as well as air pollution events like bushfires. Combustion of fossil fuels to power vehicles and industry contributes directly to air pollution. It also has an indirect effect by contributing to climate change, which increases the frequency and severity of natural disasters such as bushfires,¹⁴ in turn leading to more frequent and extreme smoke pollution events.

People with asthma are the metaphorical canaries in the coalmine when it comes to air pollution: they are among the first people to be affected by air pollution in the population. The impact can be immediate and involve respiratory symptoms and asthma flareups which can lead to hospitalisation and even death. Exposure to environmental hazards is both a risk factor for the development of asthma and a trigger for asthma symptoms in people who have asthma.¹⁵



People with asthma are not the only group at higher risk of health impacts as a result of exposure to air pollution; also vulnerable are people with other respiratory conditions, cardiovascular disease and type 2 diabetes, pregnant people, infants, children and older people.¹⁶ The United Nations recognised air pollution as one of the 5 risk factors for non-communicable diseases in 2018, alongside unhealthy diet, tobacco use, harmful use of alcohol and physical inactivity.

The impacts of air pollution are significant:

- Air pollution is linked to premature deaths. An Australian study on the health effects of air pollution in Brisbane, Melbourne, Perth and Sydney in 2005 found even a small elevation in the concentration of fine particulate matter (or PM2.5) was associated with an increase in the daily total number of deaths.¹⁷
- Air pollution is harmful to everyone. However, the most vulnerable suffer the most harm, including people living in low socio-economic areas, which often have higher levels of air pollution, or those who are more vulnerable because of their age. Children and young adults with asthma are more at risk from the effects of pollution because they have faster breathing rates and their lungs are still developing.¹⁸
- Air pollution has a significant economic impact. In one NSW study, the health costs of air pollution in the Greater Sydney Metropolitan Region were conservatively estimated to be between \$1.01 billion and \$8.40 billion per annum.¹⁹

Addressing air pollution requires a whole-of-government approach given the range of sources of pollution and the range of areas impacted which include human health, the environment, education, employment, the economy and social participation. Asthma Australia makes recommendations throughout this submission which, if implemented, would minimise these impacts and benefit the Victorian community.

Summary of recommendations

RECOMMENDATION 1: Increase efforts to address the social determinants of health and health inequities which amplify the health impacts of air pollution, including additional investment in infrastructure such as quality affordable housing and public transport, and resources for preventive health programs.

RECOMMENDATION 2: Assist vulnerable people to make their homes resilient to air pollutants including bushfire smoke and pollen through, for example, government-funded programs to seal homes and provide financial support towards the costs of air purifiers and air conditioners. (*Refer to Recommendation 12 which deals specifically with air purifiers.*)

RECOMMENDATION 3: Review building standards so that homes can be better protected against air pollution during periods of poor air quality.

RECOMMENDATION 4: Review and respond to the report and recommendations of the Inner West Air Quality Community Reference Group.

RECOMMENDATION 5: Phase out woodfire heaters in Victoria with the introduction of measures to:

- (a) Prohibit installation of woodfire heaters in new homes.
- (b) Require woodfire heaters to be removed when a home is sold.
- (c) Ensure widespread adoption of the woodfire heater replacement subsidy announced in the 2020 Victorian Budget.



RECOMMENDATION 6: While efforts are underway to phase out woodfire heaters, act to minimise smoke emissions from remaining woodfire heaters, including by:

- (a) Working with local governments to enforce environmental regulations by investigating complaints reports of excessive woodfire heater smoke, educating individuals around reducing emissions and issuing infringement notices when needed.
- (b) Implementing an education program to minimise the health impacts of woodfire heater emissions in areas where they are problematic.

RECOMMENDATION 7: Victorian fire management agencies take steps to minimise the health impacts of hazard reduction burning, including by:

- (a) Reviewing hazard reduction practices with a view to increasing non-burning options such as mechanical fuel load reduction, particularly around settled areas;
- (b) Including health authorities and a consumer representative in planning for burning so health impacts are considered in the planning phase of hazard reduction;
- (c) Coordinating activities with health authorities and agencies so health messages can be provided to the community ahead of the planned burn to ensure the potential for adverse health impacts is minimized; and
- (d) Where possible, staggering burns and ensuring they do not result in prolonged periods of poor and hazardous air quality.

RECOMMENDATION 8: Provide funding to develop and implement an AirSmart public education campaign to reduce the health impacts of air pollution, including:

- Year-round information to improve environmental health literacy
- Targeted information for people with asthma on actions to take to prepare for such events
- Increased messaging during air pollution crisis events such as bushfires

RECOMMENDATION 9: Provide targeted information about the adverse health impacts of poor air quality for people who are at greater risk, including people with asthma, people from culturally and linguistically diverse backgrounds, people with low literacy or reading skills and people who lack access to digital tools.

RECOMMENDATION 10: Install more air quality testing stations (including in regional, rural and remote areas) and consider the use of temporary air quality stations in further locations during air pollution events.

RECOMMENDATION 11: Ensure air pollution laws and regulations are complied with and enforced, including by adequately resourcing the Victorian Environment Protection Authority.

RECOMMENDATION 12: Provide financial support to people of low socio-economic status with asthma towards the costs associated with using air purifiers with a HEPA filter. (*Refer to Recommendation 2 which deals with making homes resilient to air pollution.*)

RECOMMENDATION 13: Provide financial support to institutions to upgrade facilities to reduce indoor air pollution.

RECOMMENDATION 14: Develop air quality guidelines that can be adopted by local institutions such as schools, early childhood learning centres, councils and businesses.

RECOMMENDATION 15: Conduct a feasibility study into options to protect people from air pollution, including an assessment of whether to establish a clean air shelter program which would designate public buildings that meet clean air criteria.



TOR (a) state-wide practical, real-time, cost-effective mitigation strategies

Asthma Australia refers the Committee to our response to TOR (d) which includes examples of opportunities to mitigate air pollution.

TOR (b) ensuring that Victorian air quality continues to track towards meeting or exceeding current international best practice standards and is enforced

Asthma Australia understands the Victorian Government has committed to releasing an air quality strategy. A clean air strategy would provide an opportunity to recognise the significant contributors to air pollution, set targets for reducing pollution levels and identify actions to minimise the impacts of air pollution.

Asthma Australia refers to and supports Environmental Justice Australia's People's Clean Air Action Plan for Victoria which details opportunities for air quality improvements in Victoria.²⁰

TOR (c) the impact of economic and population growth on air pollution and health outcomes

In 2017, Melbourne was recognised as one of the fastest growing cities in the developed world and the third-fastest growing region in Australia.²¹ International immigration is a significant contributor to Melbourne's population increase, with 2016 Census figures showing more than one-third of Victorians reported being born overseas.²² Although the pace of growth is expected to slow down as a result of COVID-19, the rapid growth to date has led to increased traffic levels, overburdened public transport, increased freight movements and increased construction. These factors contribute to local air pollution and also have implications for housing, which affects an individual's ability to minimise the impacts of air pollution.

The health impacts of air pollution are amplified by the social determinants of health and health inequities. Factors including housing, education, employment and air quality interact to raise or lower a person's health and wellbeing. People in low socio-economic areas are more likely to be exposed to air pollution and less likely to have the means to protect themselves, for example by purchasing and running air purifiers. The burden of disease is also far greater for certain population groups, including those experiencing socio-economic disadvantage.

In its response to the issue of air pollution, the Victorian Government should prioritise investment in housing repair and maintenance programs. A major issue for people with asthma and others vulnerable to air pollution is the quality of their housing. Homes are often leaky, meaning pollutants such as PM2.5 can enter the home even when windows and doors are closed. Asthma Australia conducted the Bushfire Smoke Impact Survey (n=12,152) during the 2019-20 bushfires and respondents spoke about the impact of smoke inside their homes, for example:²³



“Cannot afford air conditioning and am having problems buying an air purifier. Sealing an old 60s/70s flat difficult.”

“Our rental is poorly sealed and the air conditioner is old.”

“No advice on how to draught-proof the house without spending too much. Other family members not taking things more seriously e.g. leaving doors open.”

“Still noticed my son’s asthma deteriorate even by staying home in aircon because houses are not hermetically sealed.”

“When smoke is intense on a day of high temperatures we are literally hunkered down in an incredibly hot stuffy house with no ability to use the evaporative cooling system. Even with windows shut, extra block out curtains and pieces of cardboard on windows to try and keep heat and smoke out it still is 29-30 degrees inside and doesn't cool down overnight so it's extremely uncomfortable.”

With one-third of Victorians born overseas, Victoria is fortunate to be home to people from many different cultures. However, new migrants and visitors may be more at-risk during air pollution events, as they may be more likely to live in temporary or short-term housing. People living in temporary housing have limited ability to control their living conditions, for example sealing doors and windows or installing air conditioning. Further, new migrants may not be familiar with asthma, or asthma symptoms, and may have limited access to medical care.

Government resources should be mobilised and allocated in ways that promote equity including distribution of resources to areas of need. This includes investment in improving air quality, providing infrastructure such as quality affordable housing and public transport, and resources for preventive health programs.

RECOMMENDATION 1: Increase efforts to address the social determinants of health and health inequities which amplify the health impacts of air pollution, including additional investment in infrastructure such as quality affordable housing and public transport, and resources for preventive health programs.

RECOMMENDATION 2: Assist vulnerable people to make their homes resilient to air pollutants including bushfire smoke and pollen through, for example, government-funded programs to seal homes and provide financial support towards the costs of air purifiers and air conditioners. (Refer to Recommendation 12 which deals specifically with air purifiers.)

RECOMMENDATION 3: Review building standards so that homes can be better protected against air pollution during periods of poor air quality.

Melbourne’s Inner West is an area of particular concern as it has high levels of air pollution as a result of emissions from industry and transport.²⁴ Asthma Australia recommends the Committee review the report and recommendations of the Inner West Air Quality Community Reference Group,²⁵ which recognised the area has a rapidly increasing population which experiences higher rates of asthma, along with other health problems linked to air pollution. The report recognises the Inner West area includes the suburbs Yarraville and Brooklyn, which rank 7th and 8th for air pollution levels in Australia.



Of the recommendations in the Inner West Air Quality Community Reference Group report, Asthma Australia particularly supports calls for increased and improved air quality monitoring and reporting in the Inner West region, including use of low-cost sensors along with permanent monitoring sites. We also recognise the need for an air pollution public education campaign to improve awareness in the local community around the health impacts of air pollution. We also note the many practical recommendations to minimise sources of air pollution in the Inner West.

RECOMMENDATION 4: Review and respond to the report and recommendations of the Inner West Air Quality Community Reference Group.

TOR (d) strengthening commitments across all Victorian Government portfolios to reduce air pollution and minimise the impact on health

In response to this TOR, Asthma Australia focuses on recommendations to reduce air pollution from woodfire heaters and hazard reduction burns which are particularly problematic for people with asthma. In response to TOR (e), we provide broader recommendations to minimise the health impacts of air pollution.

Reducing woodfire heater smoke

“[Woodfire heater smoke] gets pretty bad here because even in the new housing areas where we are, a lot of people have installed wood-fire heaters, I would say at least half of the homes built in the last five years that I know would have one.”

Bendigo resident with asthma

Woodfire heater smoke is a significant contributor to winter air pollution in Victoria, emitting particulate matter in the form of PM2.5 and PM10.²⁶ According to the National Environment Protection Council, in Victoria, “Urban sources, such as domestic wood heating, continue to be a significant contributor to the number of exceedances of the PM2.5 standard. These generally occurred on cold, still nights, which are usually associated with increased usage of heating and meteorological conditions that limit the dispersion of smoke.”²⁷ The Victorian EPA has recognised these conditions exacerbate the already significant “accumulative impact of large clusters of wood heaters”.²⁸

A representative survey of over 25,000 people commissioned by Asthma Australia found people with asthma are twice as likely (23%) to report experiencing respiratory symptoms when exposed to woodfire heater smoke compared to the general population (11%).²⁹ People with other respiratory illnesses are also particularly vulnerable to woodfire heater emissions, as are pregnant people, children and elderly people.³⁰ Exposure to emissions has been associated with certain cancers, cardiovascular and respiratory hospital admissions and emergency department visits, premature birth and premature death.³¹

Asthma Australia’s consumer survey results show most people do not feel they are able to reduce their exposure to smoke. Only 28% of the general population and 18% of people with asthma said they are able to protect themselves from woodfire heater smoke when present.³² A common



response from people on how they attempt to protect themselves is staying inside with their doors and windows closed when smoke is present. This is not a practical solution, as woodfire heater smoke is a persistent problem in affected regions throughout the colder months and people may be exposed daily or multiple times a week. It is also unlikely to protect the many people living in homes which aren't well-sealed.

The survey also found most people support the introduction of regulations to reduce the impact of woodfire heaters. More than three-quarters of the general population (77%) agree woodfire heaters should not be allowed in urban or built-up areas and over half agree they should be phased out (55%) or banned (54%). Support for regulation was even higher among people with asthma with 84% supporting regulation of woodfire heaters in urban or built-up areas, 71% supporting a scheme to phase them out and 65% agreeing they should be banned. Support for regulatory methods was much stronger than support for community education to ensure people know how to correctly use and reduce smoke from their woodfires, with only 37% of the general population and 50% of people with asthma agreeing with community education.

A Policy Impact Assessment prepared for Victoria's Environment Protection Authority in 2017 assessed the health costs impacts of woodfire heater emissions and the benefits of various regulatory interventions to reduce emissions.³³ Estimating there are 142,800 wood fire heaters in Victoria, the Assessment quantified the total health costs of woodfire heater emissions at more than \$8 billion over 10 years.³⁴ The Policy Impact Assessment found that accelerating replacement of existing woodfire heaters was by far the most effective intervention in terms of avoiding particulate matter emissions and would result in the greatest net benefit at over \$462 million. In comparison, adopting an efficiency standard for woodfire heaters would deliver a net benefit of under \$33 million and tightening the emissions standard would have a net benefit of just over \$28 million.

Asthma Australia notes the Victorian Government's Budget announcement in late 2020 included a household energy efficiency package which included funding to replace old heaters, including woodfire heaters, with energy efficient alternatives.³⁵ Asthma Australia welcomes this announcement but wants to see more detail on the package. We also want to see further measures to phase out woodfire heaters in Victoria in areas where their emissions cause negative health impacts. While efforts are underway to phase out woodfire heaters, steps should be taken to minimise the health impacts of remaining heaters, such as supporting councils to enforce environmental regulations. And while public education was not the preferred intervention in Asthma Australia's survey, an effective education campaign could minimise the health impacts of woodfire heater emissions while efforts to phase them out are implemented.

RECOMMENDATION 5: Phase out woodfire heaters in Victoria with the introduction of measures to:

- (a) Prohibit installation of woodfire heaters in new homes.**
- (b) Require woodfire heaters to be removed when a home is sold.**
- (c) Ensure widespread adoption of the woodfire heater replacement subsidy announced in the 2020 Victorian Budget.**

RECOMMENDATION 6: While efforts are underway to phase out woodfire heaters, act to minimise smoke emissions from remaining woodfire heaters, including by:

- (a) Working with local governments to enforce environmental regulations by investigating complaints reports of excessive woodfire heater smoke, educating individuals around reducing emissions and issuing infringement notices when needed.**
- (b) Implementing an education program to minimise the health impacts of woodfire heater emissions in areas where they are problematic.**



Hazard reduction burns

Longer fire seasons present challenges for Victorian communities including a reduced number of days when hazard reduction burning, or planned burns, can take place.³⁶ The number of days is further reduced by the increasing frequency of adverse weather events caused by climate change. As a result, when there are opportunities for hazard reduction burning, these activities can occur over several consecutive days. For people with asthma, these activities can be extremely hazardous and can lead to life-threatening symptoms.

According to EPA Victoria, hazard reduction burns and bushfire smoke are typically the main contributors to exceedances of PM2.5 standards, with hazard reduction burns the main contributor on “mild, still days with medium humidity”.³⁷

Research comparing the health impacts of hazard reduction burns against bushfires in Western Australia over a period of 16 years estimated the health costs of hazard reduction burns were higher overall, and in many years, these burns were responsible for the majority of health costs.³⁸

Research into the impact of hazard reduction burning in the greater Sydney region in May 2019 estimated a 5-day period of hazardous air quality in Sydney caused by the burning resulted in 14 premature deaths of people with respiratory and cardiovascular disease.³⁹ An Asthma Australia survey of 550 people from areas affected by the sustained hazardous air quality found four out of five respondents reported experiencing difficulty breathing. Almost one in five people (19%) reported experiencing an asthma emergency, including 17% being prescribed oral corticosteroid medication, 3% attending a hospital emergency department and 2% being admitted to hospitals. There were also financial and productivity impacts, with 21% reporting being sick for longer than a week, 28% having to take sick leave or work from home and 22% experiencing unexpected financial costs due to extra medication or equipment needs.⁴⁰

The Royal Commission into National Natural Disaster Arrangements recognised exposure to low level particulate matter over multiple days, that can occur with a hazard reduction burn, can be as harmful as a substantial but short-term increase in particulate matter. The Royal Commission noted the need to balance the health impacts of hazard reduction burn smoke with the risks of fuel loads when planning burns.⁴¹

The NSW Bushfire Inquiry has called for “a much better understanding of cost-benefit and effectiveness of different hazard reduction techniques, including the public health costs associated with smoke from prescribed burning”.⁴² It found that non-burning approaches to fuel reduction are particularly important around communities and recommended consideration of biofuel generating opportunities to dispose of cleared green waste.

RECOMMENDATION 7: Victorian fire management agencies take steps to minimise the health impacts of hazard reduction burning, including by:

- (a) Reviewing hazard reduction practices with a view to increasing non-burning options such as mechanical fuel load reduction, particularly around settled areas;**
- (b) Including health authorities and a consumer representative in planning for burning so health impacts are considered in the planning phase of hazard reduction;**
- (c) Coordinating activities with health authorities and agencies so health messages can be provided to the community ahead of the planned burn to ensure the potential for adverse health impacts is minimized; and**
- (d) Where possible, staggering burns and ensuring they do not result in prolonged periods of poor and hazardous air quality.**



Other air pollution sources

Asthma Australia notes a number of other sources contribute to air pollution in Victoria which are problematic from an asthma perspective, notably motor vehicles and industry.⁴³ We refer the Committee to Environmental Justice Australia's People's Clean Air Action Plan for Victoria which details the impacts of coal-fired power stations, vehicle emissions, woodfired heaters and ozone pollution, making practical recommendations to reduce pollution from each source. Asthma Australia supports the People's Clean Air Action Plan and its recommendations.

TOR (e) any other related matters

While it is critical to act to reduce sources of air pollution, it will take time for action to lead to results. It is therefore equally critical to provide support to Victorians to minimise the impacts of unhealthy air. Asthma Australia recommends the Victorian Government pursue the following actions as a starting point.

Funding an AirSmart public education campaign

Asthma Australia surveyed 12,000 people during the 2019-20 bushfires. The results indicated that despite the majority of respondents with asthma taking actions to protect themselves against the bushfire smoke, such as staying inside with windows and doors closed, many still experienced adverse health impacts. The survey results made clear the need for a public education campaign around the health impacts of air pollution, which has also been recommended by both the Royal Commission into National Natural Disaster Arrangements⁴⁴ and the NSW Bushfire Inquiry.⁴⁵

An AirSmart public education campaign, similar to the SunSmart campaign, could provide information to local communities about air pollution and the associated health impacts. It should include information for the general public as well as targeted information for people with asthma and other vulnerabilities to air pollution. It is also important that any health information or advice is provided in culturally appropriate ways to people from Culturally and Linguistically Diverse (CALD) backgrounds and people with lower environmental health literacy. Presenting health information around air pollution in ways that meet the needs of the local community, including in multiple languages and formats, is vital to ensure all people receive the information they need to keep healthy and well.

Further, the provision of health information about air pollution should not be left to times of crisis. Instead, information about air quality should be provided year-round, with a focus on improving environmental health literacy so the community is able to interpret health advice when it is provided in times of crisis. During times of crisis, such as bushfire smoke events, there is a need to increase health advice and ensure the messaging is targeted to vulnerable groups.

RECOMMENDATION 8: Provide funding to develop and implement an AirSmart public education campaign to reduce the health impacts of air pollution, including:

- Year-round information to improve environmental health literacy
- Targeted information for people with asthma on actions to take to prepare for such events
- Increased messaging during air pollution crisis events such as bushfires



RECOMMENDATION 9: Provide targeted information about the adverse health impacts of poor air quality for people who are at greater risk, including people with asthma, people from culturally and linguistically diverse backgrounds, people with low literacy or reading skills and people who lack access to digital tools.

Measuring and reporting on air quality

Asthma Australia refers the Committee to Environmental Justice Australia's People's Clean Air Action Plan for Victoria, which details areas for improvement in Victoria's monitoring and reporting of air quality and enforcement of air quality standards.⁴⁶ In particular, Asthma Australia supports the recommendations to increase the number of air quality monitoring stations. Local air quality information should be available to all communities where woodfire heater smoke or vehicle emissions are problematic, and to communities located near major industrial pollution sources such as coal fired power stations.

Consideration should be given to increasing the number of portable air quality monitoring stations that can be deployed during extended air pollution events to areas without permanent air quality monitoring stations. This is particularly important in regional and rural communities.

Asthma Australia also recognises the need for strong compliance and enforcement to incentivise government and polluters to minimise exposure to pollutants which place the health of Australians at risk. Adequate resourcing is needed to ensure compliance with, and enforcement of, air pollution laws and regulations.

RECOMMENDATION 10: Install more air quality testing stations (including in regional, rural and remote areas) and consider the use of temporary air quality stations in further locations during air pollution events.

RECOMMENDATION 11: Ensure air pollution laws and regulations are complied with and enforced, including by adequately resourcing the Victorian Environment Protection Authority.

Targeted financial support towards the cost of purchasing and running air purifiers

Air purifiers with HEPA filters can be highly effective in minimising exposure to bushfire smoke when used as recommended by the manufacturer in a well-sealed room.⁴⁷ Air conditioning can also be necessary during air pollution events that occur in hot weather which require vulnerable people to shelter inside for hours or days at a time. However, it is expensive to purchase and run air purifiers and air conditioners. Some members of the community require financial assistance to implement these measures and ensure their homes are safe during air pollution events.

The Victorian Government should consider providing financial support to people of low socio-economic status with asthma towards the costs of purchasing and running air purifiers.

RECOMMENDATION 12: Provide financial support to people of low socio-economic status with asthma towards the costs associated with using air purifiers with a HEPA filter. (Refer to Recommendation 2 which deals with making homes resilient to air pollution.)



Support for institutions to respond to air pollution events

The Victorian Government should develop frameworks to enable local schools, workplaces, sports associations and public buildings to respond to air pollution events, including support for upgrades to reduce indoor air pollution and guidelines for responding to air pollution. Timely institutional responses will ensure children, outdoor workers, recreational sportspeople and other members of the community are safe during periods of air pollution. The Government should also investigate the feasibility of a clean air shelter program.

Asthma Australia's Bushfire Smoke Impact Survey found that during the 2019-20 bushfires, indoor air pollution was an issue in workplaces, schools and public buildings, with respondents stating:

"Improved air filtering and positive pressure air conditioning in some public locations such as libraries and pools, so there is somewhere with better air quality and they don't close when the air gets bad."

"Even working inside a shopping centre gave no relief as the smoke could still be smelt inside. It has been near impossible to avoid."

"Our school has not been responsive to the public health warnings and carried on with outdoor sport activities on days of hazardous air quality. My son has missed three days of school in order to avoid sports days etc."

"As a schoolteacher, smoke entered my classroom from door being open and closed all day. No air con or air purifiers. Not good."

"Workplace (government building) could not keep smoke out & still had to attend."

"[In the hospital] where I work smoke collects in corridors & outside surgical theatres."

"Air quality at work has been very bad, with the air con system unable to filter out particles. I've been wearing a P2 mask all day at work but it gets hard to breathe by the afternoon, once the filter has been blocked by condensation from my breathing. I then have to choose between hard-to-breathe clean air, easy-to-breathe smoky air, or going home. Some days I can work from home but not when I need to use specific equipment or carry out tasks on-site."

"I've also had to cancel shifts on days when air quality would make it impossible for me to do my job, which has meant reduced income."

In response to the sustained air pollution caused by the 2019-20 bushfires, some agencies released guidelines to help institutions respond. For example, the ACT Education Directorate released a policy on 'Managing Air Quality in Schools'. The policy included a risk assessment framework and an 'Air Quality Impact and Response Guide for Schools', with actions that could be taken (for example, remaining indoors, limiting physical activity and the cancellation of excursions).⁴⁸

Workplaces have a responsibility to provide a safe working environment. Again, during the 2019-20 bushfires, Safe Work Australia provided information on 'Bushfires and air pollution' stating "workplaces must have measures in place to protect worker health and safety and manage risks".⁴⁹ Safe Work Australia also specified that workplaces "must have measures in place to manage the risks to health and safety when air quality is reduced" and outlined actions such as working



inside, rescheduling outdoor work and providing personal protective equipment such as P2 face masks.⁵⁰

Policies should be developed across institutions with guidance from a central health authority, such as the Chief Medical Officer. The Victorian Government should work with State, Territory and Federal governments to ensure consistency across any guidelines developed in other jurisdictions. In January 2020, the Chief Medical Officers and State and Territory Chief Health Officers released brief 'guidance on health effects of exposure to bushfire smoke'.⁵¹ This statement provided high level information on the impacts of PM2.5 on people's health and possible actions to reduce these impacts. However, the statement was brief and could be built on to develop more detailed advice to guide institutional responses.

Finally, the Victorian Government should conduct a feasibility study into options to protect people from air pollution, including through the establishment of clean air shelters. Public buildings which meet clean air criteria, such as being well sealed and having air conditioning, could be designated as clean air shelters for use during air pollution events so that community members at risk of air pollution can take shelter. This would benefit people who find themselves away from home when air pollution levels rise, local residents whose homes have poor air quality and homeless people. Clean air shelters could also be used during thunderstorm asthma events and could minimise the risk of hospitalisations and deaths from thunderstorm asthma.

RECOMMENDATION 13: Provide financial support to institutions to upgrade facilities to reduce indoor air pollution.

RECOMMENDATION 14: Develop air quality guidelines that can be adopted by local institutions such as schools, early childhood learning centres, councils and businesses.

RECOMMENDATION 15: Conduct a feasibility study into options to protect people from air pollution, including an assessment of whether to establish a clean air shelter program which would designate public buildings that meet clean air criteria.



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