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AMA submission to National Environmental Protection Council's consultation on the proposed variation to the National Environment Protection (Ambient Air Quality) Measure standards for ozone, nitrogen dioxide and sulfur dioxide

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As the peak professional organisation representing medical practitioners in Australia, the Australian Medical Association (AMA) welcomes the opportunity to provide input into the NEPC's proposed variation to Australia's ambient air quality standards - for ozone (O_3), nitrogen dioxide (NO_2) and sulfur dioxide (SO_2). Exposure to these pollutants, and air pollution in general, can have significant harmful effects on the health of Australians. The AMA believes that this review should place health considerations as its top priority in the setting of new standards.

The AMA previously made a submission to the Senate Standing Committee on Community Affairs' Inquiry into the impacts on health of air quality in Australia in March 2013; and the then AMA President, Dr Steve Hambleton, gave evidence at the committee's hearing on 16 April 2013. Some of that evidence is repeated here as it remains relevant.

Overview

Air quality standards are essential in ensuring the health of all people and it is critical that these standards are based on the most current and accurate research on the impact of air pollution on human health. The AMA has concerns around current air quality standards, which we consider to be outdated. Current air quality standards in Australia lag behind international standards and have failed to keep pace with internationally accepted scientific evidence.

The AMA supports the submission made to this review by Doctors for the Environment Australia (DEA), which has called for the adoption of new standards for NO_2 and SO_2 based on updated scientific evidence, strong international approaches, and recent research on appropriate levels. The AMA agrees with the DEA submission's technical explanations and supports the emphasis on low and zero pollution options in vehicles and electricity generation. As DEA rightly note, "strong pollution reduction policies based on good standards will assist Australia in reaching the best outcome" for the health of all Australians.

Health Effects of Air Pollution

From a medical perspective, the adverse health consequences of air pollution range from acute and chronic effects, such as restrictions in physical activity, to emergency room visits for asthma and hospitalisations for respiratory and cardiovascular causes, to premature mortality.

Although poor air quality is often considered to be primarily a health concern in low and middle income countries, it also causes significant harm in high-income countries. For example, a recent study quoted in AusDoc (*Pollution cancels out benefits of exercise*, 12th July 2019) cited research showing that "exposure to air pollution needs to be considered when considering the cardiovascular benefits of walking and cycling compared with driving." This study, which was based on a large population in Ontario, Canada, found that living in relatively highly polluted neighbourhoods was associated with a higher risk of hypertension and diabetes than areas with less vehicle pollution.

These health impacts are also felt in Australia. The Australian Institute of Health and Welfare's recently published *Australian Burden of Disease Study* for 2015 found that 4.6% of disease burden from cardiovascular disease and 1.6% of disease burden for respiratory disease was attributable to air pollution.

Health Effects of Ozone, Nitrogen Dioxide and Sulfur Dioxide

More specifically, exposure to O_3, NO_2 and SO_2 has significant health effects. Excessive ozone can lead to breathing issues and asthma attacks in the short term, and can have long term impacts on lung function and lung disease. Similarly, exposure to NO_2 over the long term can cause reduced lung function, and high concentrations of NO_2 are considered to be a "toxic gas" by the World Health Organisation. Exposure to SO_2 also impacts on respiratory health, as well as irritating the eyes and making those exposed more vulnerable to developing respiratory tract infections. A key cause for concern from SO_2 exposure is that it can affect asthmatics' respiratory and pulmonary function within very short periods of exposure. The World Health Organisation warned in 2018 that "health effects are now known to be associated with much lower levels of SO_2 than previously believed. A greater degree of protection is needed".

It is important to note that air pollution can have a negative impact on human health at levels of lower concentrations than Australian standards currently allow. The AMA has been advised that in other comparable countries, the allowable standards of concentrations for O_3, NO_2 and SO_2 have been reduced to account for their health impacts.

AMA Position

Principally, the AMA would like to emphasise the significant health effects of ambient air pollution, and specifically of the three pollutants being considered by this review. These potential health impacts should be considered as a priority in the setting of any new standards.

The AMA is not in a position to detail recommendations about what levels should be instated for each pollutant, however we defer, and refer, to the submission provided by Doctors for the Environment Australia (DEA) which provides more detailed and expert material. The AMA believes that the levels should be in line with Australian and international evidence, taking WHO guidelines as a starting point where appropriate.

People living, working or otherwise exposed to high congestion roads may experience exposure to levels of air quality that is far higher than in other environments, such as suburban and regional locations. We concur with those who are calling for the National Environment Protection Measures (NEPM) to embrace quantified procedures for standardised measurement of pollutants on busy roads to better understand and manage air quality.

The AMA does not believe that current air monitoring is effective enough. The current monitoring network needs to be strengthened and expanded to measure the exposure of vulnerable groups and populations living in close proximity to major sources of air pollution. More effective enforcement mechanisms are also required to ensure standards are met. Importantly, air quality management policy should be based on reducing human exposure to air pollution, rather than simply complying with air quality standards.

Supporting Positions

World Health Organisation

The World Health Organisation has long drawn attention to the severe health impacts of air pollution. In 2016, the WHO reported that global air pollution caused a total of eight million deaths annually, 3.7 million of which are attributable to ambient air pollution. The WHO's 2016 *Draft road map for an enhanced global response to the adverse health effects of air pollution* specifically directs the health sector to raise awareness about the relationship between air pollution and poor health outcomes, including by supporting the implementation of WHO guidelines on air quality.

World Medical Association

The World Medical Association, of which the AMA is a member, also holds a clear position on air pollution as set out in the statement *Prevention of Air Pollution Due to Vehicle Emissions*, adopted in 2014. The WMA notes the relevance of air pollution to the medical profession due to its significant health impacts and contribution to mortality. The statement particularly draws attention to the toxic effects of urban outdoor air pollution on cardiovascular and respiratory health.

Summary

It is well-accepted that air pollution is a serious environmental health threat. This submission has demonstrated the range of negative health effects that can be attributed to poor air quality. The AMA supports the technical evidence provided by DEA to this review. Overall, the AMA emphasises that, from a medical perspective, it is paramount that air quality standards be set at an appropriate level to protect the health of Australians.

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