

Smoke haze from Australian bushfires pose serious public health threat

By John Mackay
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Australia's intense and prolonged bushfire crisis poses a significant public health threat, with major cities still experiencing unprecedented elevation in pollution.

Health experts continue to issue warnings about the negative effects of the high levels of air pollution. Australian Medical Association (AMA) president Dr Tony Bartone warned in a press release early this month that the duration and intensity of smoke exposure presents "a new, and possibly fatal health risk that most of us have never faced before."

The denser smoke haze and longer periods that people inhale it, Bartone said, means "there is a much higher risk that previously healthy people will face developing serious illness." The AMA also stressed that respiratory health may not be the only health issue, predicting the mental health burden from the disaster on the community will be considerable.

The high level of smoke haze is unprecedented. Over the New Year period, air quality in Canberra, the national capital, reached 23 times the level considered hazardous and the worst rating to date in the city.

Canberra was registered as the worst polluted city in the world, beating Sarajevo in Bosnia Herzegovina, Lahore, Pakistan and New Delhi, India. The highest rating recorded was 5,185 on New Year's Day, more than 25 times above the minimum hazard level of 200.

A few days before these high levels were reached, an elderly woman died after going into respiratory distress as she disembarked from a plane onto the tarmac at Canberra airport.

At its peak the poor air quality forced most of Canberra to shut down, including many businesses, shopping centres, the city's museums and public galleries. Postal deliveries were cancelled. Canberra Hospital closed some medical and diagnostic

procedures due to smoke impacting on the facility and equipment, such as medical resonance imaging (MRI) machines.

At Batemans Bay, 150 kms from Canberra, where hundreds of houses were incinerated on the New South Wales south coast, the concentration of smoke particles was nearly double that of Canberra.

In Sydney, Dr Tim Senior a General Practitioner who works at a medical clinic in the western suburb of Campbelltown, located not far from serious fires to the city's south west, told the ABC: "The smoke has hung around and there's not been any relief." We're seeing more people coming in with respiratory symptoms—mainly coughing and a bit short of breath"

He also described how many people attending his clinic were suffering chest pain, sore eyes, runny noses and sore throats. However, it is not only patients with pre-existing conditions that have been affected. Dr Senior stated: "Some people who don't have a history of asthma are feeling short of breath and [are] actually having to try using inhalers for the first time."

When asked about how other communities are coping with the effects of poor air quality the doctor said: "I know it's much, much worse for people I have spoken to down on the [NSW] south coast, where the capacity for [health] services to see people and handle their health problems has been really limited." He continued: "It's putting pressure on the healthcare system across a really broad area of Australia"

The fine particulates from smoke from wildfires has been known to contain a mix of chemicals that are a concern to public health, such as carbon monoxide, nitrogen dioxide, ozone, fine particulate matter, polycyclic aromatic hydrocarbons and volatile organic compounds.

While some facemasks—such as P2 or N95—have been

recommended as possibly helpful for those with existing lung disease, they have significant limitations in being able to provide complete protection and can make breathing more difficult.

A study published last year in the journal *Occupational and Environmental Medicine* revealed that inexpensive facemasks provided only limited protection against air pollution in Beijing, one of the world's most polluted cities, due to poor facial fit. Masks that provide more comprehensive protection are bulky and more expensive.

Sotiris Vardoulakis, a professor of global health at the Australian National University, told the Australian Broadcasting Corporation (ABC): “[T]he general message is we need to minimise exposure and there are different ways of doing that. On days with high air pollution, it’s better to spend more time indoors.”

Dr David Caldicott, a consultant emergency physician at the Calvary hospital in Canberra, told the media that there have been increased emergency admissions by elderly patients, asthmatics and those with other respiratory problems.

“The psychiatric element associated with the potential threat of fire,” Caldicott added, “is something that’s often forgotten when people are focusing on respiratory disease.” He also warned that staying indoors for extended periods can have a negative impact on mental health.

The Royal Australian and New Zealand College of Obstetricians and Gynaecologists has raised concerns about the high levels of air pollution on mothers and their unborn children. College president Dr Vijay Roach told the ABC: “Exposure to air pollution in pregnancy has been linked to increased rates of preterm birth, decreased birth weight, hypertensive disorders of pregnancy and gestational diabetes.”

Health experts are uncertain when the real extent of the effect of smoke exposure will present in the population.

Professor Bin Jalaludin from the Centre of Air Pollution, Energy and Health Policy research at the University of New South Wales told the *Sydney Morning Herald*: “What we’re finding now is that air pollution tends to affect all parts of the body... There is increasing evidence around air pollution and neurological conditions, for example Parkinson’s disease and Alzheimer’s.”

In September last year, the AMA, in line with similar positions taken by both the American and the British Medical Associations, declared climate change a “health emergency.” It pointed to the “clear scientific evidence indicating severe impacts for our patients and communities now and into the future.” In 2015, the World Health Organisation stated that the evidence is “overwhelming” that climate change is the greatest threat to global health in the 21st century.

Dr Allison Hemenenstall of the Australian College of Rural and Remote Medicine recently told the *Guardian* newspaper that there was “a united strong voice” demanding government action. “[W]e need to push for governmental change, prioritising climate change policy which is something that the government isn’t doing at present... the health implications of climate change are only going to be fixed by addressing climate changes itself.”

Consecutive Liberal and Labor governments have done little to address climate change and deliberately disregarded the warnings of more severe weather events. The parties of big business will continue to ignore the scientific evidence and demands by health experts to address climate change, for the same political reasons in order to defend the profit system.

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