

Global Health

Saving Tens of Thousands of Lives by Cutting Air Pollution

Reducing particulate matter and nitrogen dioxide pollution in nearly 1000 European cities to the World Health Organization (WHO) target levels could save about 50 000 lives a year, a multinational team of investigators reported.

Using 2015 data on air pollution and deaths in those cities, the investigators estimated the health impact of lowering levels of particulate matter with a diameter of 2.5 μm or smaller ($\text{PM}_{2.5}$) and nitrogen dioxide (NO_2) to meet the targets in the WHO's air quality guidelines. The guidelines recommend no more than an annual mean of 10 $\mu\text{g}/\text{m}^3$ for $\text{PM}_{2.5}$ and 40 $\mu\text{g}/\text{m}^3$ for NO_2 .

Meeting the WHO targets would prevent an estimated 51 213 premature deaths for $\text{PM}_{2.5}$ exposure and 900 premature deaths for NO_2 exposure each year, the authors found. Achieving even lower levels of 3.7 $\mu\text{g}/\text{m}^3$ for $\text{PM}_{2.5}$ and 3.5 $\mu\text{g}/\text{m}^3$ for NO_2 —the lowest levels measured in any European city in 2015—would prevent an estimated 124 729 premature deaths from $\text{PM}_{2.5}$ exposure and 79 435 premature deaths from NO_2 exposure annually.

Pollution-related health effects varied significantly by city. Three northern European cities—Tromsø, Norway; Umeå, Sweden; and Oulu, Finland—had the lowest premature mortality burden linked with $\text{PM}_{2.5}$ and NO_2 exposure. Cities in northern Italy, southern Poland, and the eastern Czech Republic had the highest burden linked with $\text{PM}_{2.5}$, while large cities and capitals in western and southern Europe had the highest premature deaths attributed to NO_2 .

"The study proves that many cities are still not doing enough to tackle air pollution, and levels above the WHO guidelines are leading to unnecessary deaths," study co-author Mark J. Nieuwenhuijsen, PhD, of the Barcelona Institute for Global Health in Spain, said in a statement.

Most Patients Hospitalized With COVID-19 Have Lasting Symptoms

Three-quarters of patients hospitalized with coronavirus disease 2019 (COVID-19) still

had at least 1 symptom 6 months after they became ill, according to recently published follow-up research.

The study included 1733 patients who were hospitalized in Wuhan, China, and discharged between January and May 2020. Fatigue and ongoing muscle weakness were reported by 63% of the patients and roughly one-quarter reported difficulty sleeping or anxiety and depression. A subset of patients still had reduced lung function and below normal results on a 6-minute walking test. Ongoing lung and mobility impairments were more prevalent among the most severely ill patients. Among 1378 patients with estimated glomerular filtration rates available during their acute illness and at follow-up, about one-third had reduced kidney function at 6 months.

Among a subgroup of 94 patients who provided plasma samples during their acute illness and 6 months later, neutralizing antibody levels had dropped by about half at the follow-up visit, raising concerns about potential reinfection, the authors warned.

"Our analysis indicates that most patients continue to live with at least some of the effects of the virus after leaving hospital, and highlights a need for post-discharge care, particularly for those who experience severe infections," senior author Bin Cao, MD, of the National Center for Respiratory Medicine in Beijing, China, said in a statement.

New WHO Guideline for Treating Chronic Pain in Children

Clinicians should consider chronic pain in children as more than a biomedical condition when they choose appropriate treatment. A new World Health Organization guideline has advised health workers to include biopsychosocial factors such as the child's age, social environment, and cultural background.

Although limited, the available data suggest that between one-quarter and one-third of children may experience chronic pain, which the guideline defines as pain lasting more than 3 months.



Meeting the World Health Organization's air quality guidelines could prevent premature deaths linked with air pollution in Europe.

It can harm children's emotional, psychological, physical, and social development as well as their families' well-being. Yet because children are physically, socially, and developmentally different from adults they require different pain care, the authors wrote.

The biopsychosocial model of care accounts for how pain affects the patient and the family, and that treatment may involve multiple specialties and types of interventions. The guideline provides recommendations on the use of physical, psychological, and pharmacological therapy based on available evidence. For example, it allows for properly trained health care professionals to administer morphine to children with life-limiting conditions as part of palliative care. It emphasizes the importance of opioid stewardship in which clinicians carefully assess risks and benefits, continuously monitor and evaluate therapy, and have a plan to continue or taper the medication.

"Policy-makers, programme managers, and healthcare providers, as well as parents and caregivers must attend to opioid stewardship to ensure the rational and cautious use of opioids," the authors wrote. — **Bridget M. Kuehn, MSJ**

Note: Source references are available through embedded hyperlinks in the article text online.