Air pollution makes COVID-19 health outcomes worse.

Exposure to pollution increases risk for severe coronavirus symptoms and death.

- The risks of complicated coronavirus symptoms and need for hospitalization and intensive care increases if a patient has underlying health conditions, such as asthma, respiratory problems, a weakened immune system, diabetes, cancer or other conditions.¹

- Pollution is a major risk factor for many of these underlying conditions.² Exposure to air pollution in particular reduces lung function, increases risk of getting pneumonia and other respiratory infections, increases asthma rates and damages immune systems.³ WHO estimates that air pollution alone kills 7 million people per year. Exposure to other types of pollution, such as lead (Pb) can damage the immune system as well.⁴

- 91% of the world’s population lives in places with unhealthy air.⁵

- Vulnerable populations already at risk from pollution’s worst effects due to poverty, occupation, low access to health care and education, are also most vulnerable to the impacts of COVID-19: sick days, loss of income earning family members and loss of livelihoods due to the global economic slowdown.⁶

- Cities with higher rates of air pollution experience higher mortality rates during such pandemics.⁷ Previous variation in mortality across different cities during the 1918 influenza pandemic was attributable in part to air pollution.⁸ Similar results were seen in China during the SARS epidemic and have been observed in the worst affected regions of northern Italy, which also have higher levels of air pollution than other parts of the country.⁹
Recent gains in air quality will be short lived if the world returns to business as usual post COVID-19 shutdown.

- Satellite imagery shows dramatic reductions in air pollutants globally in cities under lockdown, but rates are starting to rise as cities open back up for business.\(^\text{10}\)

- Reduced levels of air pollution show the potential for achieving cleaner air worldwide when there is no choice but to act—to save lives in the battle against a devastating contagion. While the blue skies are an unintended result of fighting COVID-19 and not intentional pollution control, they illustrate what is possible if efforts are undertaken now to reduce the use of fossil fuels and convert to cleaner energy sources.

Efforts to reduce air pollution, enforce air quality standards and strengthen regulations, now and after the COVID-19 crisis, are critical.

The strong link between exposure to air pollution and increased mortality from COVID-19, the resulting disproportionate impacts on impoverished vulnerable populations and developing countries due to impacts on the global economy and local livelihoods, and climate change cannot be ignored.\(^\text{11}\) Polluted air, water and soil cause 9 million premature deaths per year.\(^\text{12}\) Tackling pollution can reduce short- and long-term health problems, economic and environmental damage, and should be prioritized.\(^\text{13}\)

Many citizens under lockdown are experiencing clean air and smog-free blue skies for the first time in a generation. Governments can implement green policies to preserve these environmental and health gains.

The opportunity to invest is now—because citizens can and should demand breathable air. High income countries have shown that there are cost-effective pollution investments that do not impede growth; rather, they improve its quality and sustainability.

A range of policy options can be leveraged that will reduce air pollution in the short and long-term. Some solutions are “quick wins” that can begin to show results within weeks, such as reductions in respiratory symptoms, school absenteeism, clinic visits, hospitalizations, premature births, and cardiovascular events.\(^\text{14}\)
• **Increase fines for polluting industries to levels that will change behavior and industry practices.**
  - Fines can fund enforcement.
  - Special effort should be made to avoid corruption.
  - This is the quickest and most effective action as it is often an administrative change.

• **Move to low sulfur fuel.**
  - While high-income countries have reduced fuel sulphur levels to 10 parts per million (ppm), in LMICs, the average sulphur levels (particularly in diesel fuels) in other countries are high and may even reach 10,000 ppm. Low sulphur fuels are critical to lowering PM2.5 (of great concern due to health impacts) and black carbon emissions (a climate pollutant).\(^{15}\)

• **Include provisions in economic recovery stimulus packages, such as:**
  - **Rapidly phase out** subsidies to polluting industries, such as fossil fuels.
  - **Reinvest** those subsidies in pollution-free, green energy/renewables.
  - **Invest in green** job training programs and green job growth, including government-sponsored green jobs (i.e. tree planting, creation of green space, urban gardening programs, dust control) to employ those who have lost jobs to the COVID-19 induced economic crisis.
  - **Expand** consumer and business incentive programs (i.e. waiving taxes) to adopt greener technologies and practices, including electric vehicles and the continuance of remote work and virtual meetings where possible and relevant.
  - **Mandate** the transition of government vehicle fleets to electric fleets.
  - **Stimulate and encourage** investment in sustainable technology research and development to establish the conditions for new ventures to drive innovation in these fields.

• **Implement farmer support programs that quickly end crop burning practices.**
  - Recent studies show that 5-10 percent of global air pollution deaths (approximately 250,000 deaths annually) are due to open biomass burning. Lelieveld et al. (2015) note that PM2.5 from agricultural sources is the main contributor to premature mortality from air pollution for the eastern U.S., Europe, Russia, and East Asia.\(^{16}\)
Adopt meaningful enforcement mechanisms that will change behavior; for example, Ukraine just increased the fine for crop burning by a factor of twenty. Crop and forest fires were approaching the Chernobyl area increasing the risk of dispersing radioactivity, in addition to heavy air pollution. This policy change will benefit much of Europe.

• **Start planning and implementing long-term solutions:**

  • Develop and implement Short-Lived Climate Pollutant (SLCP) Action Plans and targeted reduction strategies ensuring a focus on pollution prevention and abatement, including a regional and transboundary scale;

  • Satellite data and imagery can be used to identify key sources of PM2.5 and areas for targeted investment.

High-impact interventions to reduce CO₂, black carbon and PM2.5 emissions that will also improve health/well-being include:

• Replacing coal fired power plants with renewables or gas;

• Replacing diesel vehicles with electric vehicles, especially school buses;

• Replacing dirty cooking fuels (charcoal, biomass) with electricity or LPG;

• Accelerating the transition to cleaner vehicles and low-sulphur fuels.

Efforts to stop the devastating spread of COVID-19 and save lives have given residents of some of the world’s most polluted cities a glimpse of what clean air looks and feels like. GAHP and its member agencies have resources to help policymakers harness renewed political will to preserve blue skies, improve health and reduce climate warming.

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6. https://www.who.int/health-topics/air-pollution
9. Edoardo Conticini, Bruno Frediani, Dario Caro. Can atmospheric pollution be considered a co-factor in extremely high level of SARS-CoV-2 lethality in Northern Italy? Environmental Pollution, 2020; 114465 DOI: 10.1016/j.envpol.2020.114465
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