Air pollution linked to higher virus death rates

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Americans in communities with higher smog levels are at greater risk of dying from COVID-19, according to a new study that suggests the health damage from the novel coronavirus has been worsened by long-term exposure to air pollution.

Scientists at Harvard T.H. Chan School of Public Health analyzed data on more than 3,000 U.S. counties to link small increases in long-term exposure to fine-particle pollution to substantially higher death rates from the coronavirus.

Researchers calculated long-term average levels of fine-particle pollution — lung-damaging soot also known as PM2.5 — from 2000 to 2016 and compared it to the more than 7,000 COVID-19 deaths that had occurred through April 4. They found that an increase of only one microgram per cubic meter of PM2.5 was associated with a 15% rise in the coronavirus death rate.

Francesca Dominici, a professor of biostatistics at Harvard and coauthor of the study, said her team fast-tracked its research in response to the surge in coronavirus deaths out of a "moral obligation" to help inform the response to the health crisis. The scientists released their manuscript before publication, while it undergoes peer review, and made public their data and code, hoping that it can be used worldwide to help focus research and prevent deaths.

Dominici said it was, to her knowledge, the first nationwide study to quantify the relationship between coronavirus death rates and exposure to one of the most widespread types of air pollution. She said she wanted to get the information out as soon as possible because it suggests health officials should pay closer attention to limiting the damage in the worst-polluted communities, including many in California, where people's health has long suffered from poor air quality.

"These are the places where we should really be careful about social distancing measures and they should be even more enforced," she said. "If COVID infects you, because you have lungs that are already inflamed because you've been breathing polluted air for so long, you might experience a worse health outcome than somewhere else."

The findings come as the Trump administration plows ahead with major environmental rollbacks even as the coronavirus crisis widens. In recent weeks the U.S. Environmental Protection Agency finalized a major rollback of auto emission standards and announced a sweeping decision to suspend enforcement on a range of health and environmental protections in response to the pandemic.

The Harvard scientists said their results "underscore the importance of continuing to enforce existing air pollution regulations to protect human health both during and after the COVID-19 crisis," adding that "we anticipate a failure to do so can potentially increase the COVID-19 death toll and hospitalizations, further burdening our healthcare system and drawing resources away from COVID-19 patients."

Environmentalists and health groups said the study provides stark new evidence of the shortsightedness of weakening or delaying pollution safeguards during the pandemic.

"These findings illustrate that far too many Americans are facing multiple threats to their lung health at once, and when taken together, these different threats to lung health impacts can amplify each other," American Lung Association President Harold Wimmer said in a statement. "We cannot afford to delay cleanup of dangerous air pollution. In fact, it is more important than ever."

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