My name is Ananya Roy. I am an epidemiologist and serve as Senior Health Scientist at Environmental Defense Fund, a nonpartisan science-based organization. Thank you for the opportunity to testify about the urgent need for stronger Particulate Matter National Ambient Air Quality standards.

EPA’s proposal to keep the current, inadequate particulate matter standards in place is unacceptable. The health harms of fine particulate matter are far reaching, even below the current standard.

PM$_{2.5}$ causes heart disease, diabetes, and lung cancer. It restricts the growth of children’s lungs, increases risk of asthma attacks; increases hospitalizations and emergency room visits; and eventually results in premature death. An estimated 85,000 deaths were due to PM$_{2.5}$ exposure across the country in 2017.

And we know that some populations are particularly affected.

- On average, black Americans experience about 56% more pollution than they generate. Mortality rate due to PM$_{2.5}$ is 3 times higher among African Americans than among white populations.
- 5.5 million American children have asthma and are particularly susceptible to exacerbations due to the effects of PM$_{2.5}$.

The science clearly shows that stronger limits are needed to protect public health. EPA’s own Policy Assessment shows that the current standard would have resulted in:

- 52,100 premature deaths, including heart disease, and lung cancer deaths in 47 urban areas.
- This would be 21 to 27% lower if the standard were to be set at 9.0 μg/m$^3$.

The proposed rule disregards a large body of robust and consistent scientific evidence of serious PM$_{2.5}$ related health effects at levels below the EPA standard.

For example:

- A study of 61 million Medicare beneficiaries found higher PM$_{2.5}$ was associated with higher mortality even when restricted to Americans never exposed to levels above 12 μg /m$^3$.

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2 EPA Integrated Science Assessment for Particulate Matter
7 EPA. Policy Assessment for the Review of the National Ambient Air Quality Standards for Particulate Matter. EPA-452/R-20-002 January 2020
A Canadian study of over 2 million people, where the average exposure was 7 \mu g /m^3 and nearly everyone was exposed to levels below 12 \mu g /m^3, found that air pollution even at these levels was associated with premature death.\(^9\)

This shows that people who were never exposed to levels above the current (PM\(_{2.5}\)) standard were still at risk of premature death due to air pollution exposure – that this standard is not adequately protective of health.

In proposing to retain the old standard, Administrator Wheeler has argued that the health effects seen are associations affected by confounders such as socioeconomic status or biased due to exposure misclassification, and do not identify cause and effects as they do not use causal methods. These assertions absolutely disregard the available research.

A meta-analysis of over 50 studies, reveals that the link between air pollution and mortality only becomes stronger when socioeconomic factors are taken into account and better exposure assessment methods are used.\(^{10}\)

Further, there are an increasing number of studies that use causal methods and reaffirm the risks of air pollution, including several large studies in the Eastern United States (Zigler et al. 2018, Wang et al. 2017, Schwartz et al. 2017, Schwartz et al. 2018, Abu Awad et al. 2019).

The weight of evidence framework is a well-vetted tool for causality determination: drawing on multiple lines of evidence to determine if there are consistent effects within a discipline, coherent effects across disciplines, and evidence of biological plausibility. It reflects an assessment of the collective body of evidence, rather than a single line of evidence or the use of a single statistical method.\(^{11}\)

None of the uncertainties warrant delaying action on strengthening the standards to protect public health. The need is all the more urgent as we are in the midst of a pandemic. We know air pollution causes heart disease, diabetes and lung disease—and that the people suffering from these conditions are at greater risk of severe illness from COVID-19.

The Clean Air Act, forged on a bedrock foundation of bipartisan collaboration for our nation, instructs the EPA Administrator to take decisive and protective action against these health harms and to establish standards that are requisite to protect public health with an adequate margin of safety using the best available science.

Setting a strong PM\(_{2.5}\) standards that protects health is the first step in charting a path to a healthier future and failing to do so will lock us into weaker air pollution protections – and more lives lost – for years to come.

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