

**Public Comments on EPA's Proposed Action on National Ambient Air Quality Standards
for Particulate Matter**

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Bernard D. Goldstein, MD
Dean Emeritus
University of Pittsburgh
Graduate School of Public Health

I am a former Chair of CASAC under Administrator Gorsuch, and served as President Reagan's appointee as EPA Asst. Administrator for R&D under Administrators Ruckelshaus and Thomas. I strongly object to the current administration's mangling of the processes leading to the scientific base for its regulatory standards. The science by itself requires more stringent standards for PM2.5, but today I want to use my background as a practicing physician and in public health to comment on the Margin of Safety considerations for NAAQS standards required under the Clean Air Act.

Why do we old people die? Often it is because of normal aging processes, which cause us inexorably to lose the reserve buffering capacity in our organs. We succumb to challenges that we would have survived had we still had the functional reserves of our younger self. *Today* I will focus on the heart and lung—both because these are the organs most heavily affected by fine particles and because we now have a major challenge to these organs, a Grim Reaper. I mean, of course, COVID-19.

The Clean Air Act requires that NAAQS standards should be set to protect public health with an “adequate margin of safety.” In its Federal Register Notice, EPA states:

“In addressing the requirement for an adequate margin of safety, the EPA considers such factors as the nature and severity of the health effects involved, the size of the sensitive population(s), and the kind and degree of uncertainties.”

The “nature and severity” in those with less lung and heart reserve due to PM2.5, such as the elderly when afflicted by COVID-19, includes a high risk of death. The “size of the sensitive population(s),” is already very large and, due to the baby boom, will increase dramatically in the five years before PM2.5 is next considered. The “kind and degree of uncertainties” includes the very real possibilities that, as WHO has suggested, COVID-19 may be the new normal. Older populations may have limited protective response from any COVID-19 vaccine, as occurs with influenza. Like the coronaviruses responsible for the common cold, immunity conferred by the COVID-19 infection may be relatively short-lived.

Do we have precise knowledge of the extent to which we will be able to achieve herd immunity and protect those at risk? Not yet. But, according to the EPA, precise information is not needed. The role of the Margin of Safety is “...to prevent lower pollutant levels that may pose an unacceptable risk of harm, even if the risk is not precisely identified.”

Also relevant is that air pollution may not only increase case fatality rates due to COVID-19 as was seen with SARS, but COVID-19 may itself increase the number of people potentially at risk to PM2.5. There is accumulating clinical evidence of lung scarring consistent with a long-term loss of lung function in COVID-19 survivors, even in those with relatively minimal disease. If so, the size of the population at, as EPA says, disproportionately increased risk to the health effects of PM2.5, would increase—which again is relevant to the impact of COVID-19 on margin of safety considerations.

Even with the biases imposed by the Administrator's unparalleled alterations of its procedures and membership criteria, CASAC was divided on the issue of whether a more stringent PM2.5 annual standard was needed. The Administrator acknowledges this division and provides a long explanation, which to me seems just handwaving, of why he does not believe that there is sufficient proof of the need for a more stringent standard. But he never considers the impact of COVID-19 in altering the required margin of safety. Simply put, Congress required the margin of safety in our NAAQS standards to avoid the possibility of significant health damage due to our ignorance. From what we already know about COVID-19, EPA must either right now add a significant margin of safety to the PM2.5 standards, or must withdraw this proposal until we have much more information about what seems to be a very strong likelihood that PM2.5 increases the short-term and long-term risk of fatality due to COVID-19, and that COVID-19 increases the number of our citizens who qualify as being at disproportionately increased risk to PM2.5 due to loss in lung function.

Thank you