American Thoracic Society

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Comments of the American Thoracic Society
To the US EPA Clean Air Scientific Advisory Committee (CASAC) Teleconference on Particulate Matter – Supplemental Comments
March 21, 2022

Dear CASAC Committee:

Thank you for the opportunity to submit written comments to the CASAC PM Advisory panel. These comments are being submitted on behalf of the American Thoracic Society. The American Thoracic Society (ATS) is a medical professional society whose 16,000 members include physicians who treat patients with lung disease and scientists who study the effects of air pollution on lung health. Members of the ATS Environmental Health Policy Committee have reviewed the draft Policy Assessment for particulate matter (PM) and we appreciate the detailed policy analyses reported in this document.

The ATS wish to emphasize the following points regarding analytical evaluation:

Suggestions for Analytical Evaluation

Despite inherent limitations in directly interpreting the results from short-term exposure epidemiology studies, two analytical approaches can assist in making inferences in determining a health-protective level for the 24-hour standard. First, looking at the 98th percentile exposure level of short-term studies, specifically for studies with average concentrations below the current annual standard, can provide valuable insight into levels at which adverse effects have been observed to occur despite being in "attainment" with both standards. Second, restricted analysis studies (e.g., limiting exposures below 25 $\mu g/m^3$) that demonstrate increased risk of mortality and morbidity on days with elevated levels on $PM_{2.5}$, provide strong supporting evidence for a short-term standard near the level of the exposure restriction.

When determining the "controlling" standard, it is important to not only consider the concentrations at regulatory monitors locations but also at pollution hot spots within the same metropolitan areas. Use of remote sensing or modeled data allows for a comparison of the relative concentrations of the annual average and 98th percentile values between hot-spot locations and regulatory monitor locations. Based on consideration of these relationships, we believe that improvements in the annual

concentrations at central site monitors may not provide proportional relief from the elevated short-term exposures experienced by environmental justice communities at nearby hot-spot locations. We also believe that the emissions and meteorology that contribute to these areas, and times, with higher-than-regulatory-monitor concentrations are best addressed with the 24-hour standard.

We would note with great interest the rationale provided in establishing the very first 24-hour PM2.5 standard in 1997. The "24-hour $PM_{2.5}$ standard would be intended to work in conjunction with [an] annual PM2.5 standard by providing protection against peak 24-hour concentrations, localized "hot spots," and higher $PM_{2.5}$ concentrations arising from seasonal emissions and meteorology that would not be as well controlled by an annual standard." (62 FR 38652, 1997) We fully agree with all aspects of this established rationale and regret that it has been forgotten in more recent years. The annual and 24-hour standard work best when used in conjunction to address the unequal exposures that occur in environmental justice communities.

We hope these supplemental comments are useful. If you have questions or need additional information, please contact Gary Ewart (gewart@thoracic.org) in the ATS Washington Office.

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