Comments of the American Lung Association on

U.S. EPA, Office of Air Quality Planning and Standards
Particulate Matter National Ambient Air Quality Standards:
Scope and Methods Plan for Health Risk and Exposure Assessment
EPA-452/P-09-002
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The American Lung Association offers these comments on several novel aspects of the proposed Scope and Methods Plan for the Health Risk and Exposure Assessment for the review of the particulate matter NAAQS.

The Lung Associations Supports National Scale Analysis

We are pleased that EPA is considering for the first time conducting a national scale health impact assessment using the BenMAP model as part of the planned risk assessment. This model is ideally suited to compare the health impacts of potential changes in the annual average standard for $PM_{2.5}$. Because the model is preconfigured with air quality and health data, it is a relatively quick and inexpensive way to provide national scale comparisons of the health impacts of alternative standard levels. Indeed, it is relatively easy to run the model for a variety of alternative standards, providing more complete information to inform decision-making. EPA has previously used this model to generate benefits estimates for the Regulatory Impact Assessment, but is has never been clear why use of the model was not incorporated into the risk assessment plan.

The Lung Association supports EPA's tentative plan to use the model to estimate impacts of changes in long-term $PM_{2.5}$ concentrations on mortality. The BenMAP model allows users to select from a variety of risk functions for mortality. In the 2006 Review of the PM Standard, EPA incorporated estimated risk functions for premature death derived from the Expert Elicitation exercise. Those risk estimates, and associated uncertainty bounds, were higher than those derived using risk functions from the American Cancer Society cohort study. Perhaps EPA could consider developing a unified risk function from the expert elicitation study to simplify interpretation of the results.

The BenMAP model has the capability to look at a variety of morbidity endpoints as well as mortality. These morbidity endpoints include: acute bronchitis, acute myocardial infarction, acute respiratory symptoms, asthma exacerbation, chronic bronchitis, lost work days, respiratory hospital admissions, cardiovascular hospital admissions, respiratory emergency department visits, lower respiratory symptoms and upper

respiratory symptoms.[1] EPA should consider extending its national analysis to include these additional health endpoints to provide a more comprehensive picture of the public health implications of alternate standard levels.

The Lung Association Supports Quantification of Health Risks Classified as "Suggestive Causal"

The Clean Air Act makes clear that air quality standards must protect not only against proven effects, but also against effects that are suggestive. We are supportive of EPA's proposal to analyze health endpoints which the ISA has characterized as "suggestive causal."

The draft plan discusses the possibility of including assessment of birth outcome effects in the risk assessment. Given the large number of new studies of birth outcomes discussed in the ISA, we strongly encourage EPA to evaluate impacts on pregnant women and infants in the risk assessment. It is appropriate, as EPA suggests, to characterize the uncertainty associated with estimates of these health outcomes.

In addition, we fully support efforts to characterize risks from exposure to coarse particles. Some limited analysis of coarse particle health effects was included in the risk assessment in the last review. In addition to the morbidity endpoints suggested, it may be appropriate to consider potential impacts on mortality. A recent multi-city analysis reported significant associations between PM coarse and a range of mortality endpoints.[2]

[1] BenMAP Presentation to EPA Science Advisory Board, March 2007, by Neal Fann, U.S. EPA Office of Air Quality Planning and Standards.
[2] Zanobetti A, Schwartz J. The Effect of Fine and Coarse Particulate Air Pollution on Mortality: A National Analysis. *Environ Health Perspect*; Online 13 February 2009; doi: 10.1289/ehp.0800108.