Lowering the national ozone standard would significantly reduce mortality and morbidity

July 18 2012

Establishing a more stringent ozone standard in the U.S. would significantly reduce ozone-related premature mortality and morbidity, according to a new study published online July 18 in the journal *Environmental Health Perspectives*.

"Abundant evidence links exposure to ozone with adverse health effects, including impaired pulmonary function, asthma exacerbations, increased hospital and emergency room visits, and increased mortality, yet the current National Ambient Air Quality Standard of 75ppb is often exceeded," said lead author Jesse Berman, a PhD candidate at Johns Hopkins Bloomberg School of Public Health. "Our study shows that adhering to the current standard would result in a significant reduction in morbidity and mortality and, furthermore, that applying even more stringent ozone standards would result in even greater reductions."

The research was supported in part by an American Thoracic Society research contract to Mr. Berman.

Using national ozone monitoring data for 2005-07 and concentration-response data obtained or derived from the epidemiological literature, the authors applied health impact assessment methodology using the Environmental Benefits Mapping and Analysis Program (BenMAP) to estimate the numbers of deaths and other adverse health outcomes that would have been avoided during this time period if the current eight-hour average ozone standard (75ppb) or lower standards had been met.

The researchers estimated that if the current ozone standard of 75ppb had been met, 1,410 to 2,480 ozone-related premature deaths would have been avoided during the study period. At a lower standard of 70ppb, 2,450 to 4,130 deaths would have been avoided, and at a standard of 60ppb, 5,210 to 7.990 deaths would have been avoided. At the 75ppb standard, acute respiratory symptoms would have been reduced by three million cases and school-loss days by one million cases annually. Even greater avoided mortalities and morbidities would have been achieved at 70ppb and 60 ppb standards.

"The EPA's Clean Air Scientific Advisory Committee has recommended adoption of an ozone standard in the 60 to 70 ppb range," said Mr. Berman. "Our analysis shows that implementing such a lower standard would result in substantial public health benefits."

Provided by American Thoracic Society