



Public Release Date: June 20, 2011

Contact: Steve Gibb

Skgibb@aol.com

202.422.5425

Society for Risk Analysis

Targeting of Air Pollution Policies Could Double Health Improvements and Reduce Inequalities

A study focused on a new multiple-pollutant, risk-based approach doubles the health benefits achieved by conventional single contaminant approaches with improved outcomes for the susceptible and vulnerable.

Washington D.C. – A new Environmental Protection Agency (EPA) study of a locally-tailored air quality management strategy for Detroit found that it would result in significantly improved health benefits for those most at risk. The case study addresses EPA Administrator Lisa P. Jackson’s initiative on environmental justice, which focuses on ensuring that low income and minority groups are not disproportionately affected by pollution. In July of 2009, Administrator Jackson said, “In the years ahead, I want to see a full-scale revitalization of what we do and how we think about environmental justice. This is not an issue we can afford to relegate to the margins. It has to be part of our thinking in every decision we make.”

The study demonstrated that the approach approximately doubled the human health benefits achieved by the traditional approach, according to EPA lead author Neal Fann, an environmental protection specialist at the Agency. The authors conclude that this approach may be particularly useful in many urban areas, where vulnerable and susceptible populations are clustered geographically and where air quality varies substantially because of the effects of local traffic and other pollution sources.

The analysis, entitled “Maximizing Health Benefits and Minimizing Inequality: Incorporating Local Scale Data in the Design and Evaluation of Air Quality Policies,” was authored by EPA’s Fann, Charles Fulcher, Bryan Hubbell and Karen Wesson. In addition, Henry Roman and Mikael Gentile of Industrial Economics Incorporated, and Jonathan Levy of the Boston University School of Public Health, were co-authors of the study. The research appears in the June issue of the journal *Risk Analysis*, published by the Society for Risk Analysis.

Conventional approaches to air pollution management focus on compliance of single pollutants at designated monitoring stations, while the new approach would focus on reducing multiple exposures in highly populated areas as well. The authors construct population profiles to identify vulnerable and susceptible groups, identified by current health status (mortality and asthma rates) and exposure to air pollution (particulate matter), as well as by poverty and educational

attainment. They then devise emission control strategies targeted toward minimizing risks overall. They examine how the approach affects inequalities in the distribution of related risks, and find that this more targeted approach reduces these inequalities. The study “succeeded in generating substantial human health benefits – particularly among vulnerable and susceptible populations – while also lowering the overall level of air pollution risk inequality,” according to the authors.

The article suggests that flexible, localized air quality management strategies hold significant potential for improving the health of residents and resulting in fewer hospitalizations and deaths. The authors note, however, that they rely on data that may not be easily accessible in some locales, and that future work could focus on a wider range of pollutants and health outcomes. The study “demonstrates that a risk-based approach, which tends to target local sources in areas of high population density, may not only provide greater health benefits, but may also reduce health inequality in multiple settings. This offers a win-win scenario for decision-makers concerned with both efficiency and equality.”

Air pollution control officials can now rely on various methods used in the study and apply them to susceptible and vulnerable populations to “make cost effective decisions that maximize risk reduction and minimize health inequality,” the authors conclude.

Risk Analysis: An International Journal is published by the nonprofit Society for Risk Analysis (SRA). SRA is a multidisciplinary, interdisciplinary, scholarly, international society that provides an open forum for all those who are interested in risk analysis. Risk analysis is broadly defined to include risk assessment, risk characterization, risk communication, risk management, and policy relating to risk, in the context of risks of concern to individuals, to public and private sector organizations, and to society at a local, regional, national, or global level. www.sra.org

Contact: Steve Gibb, 202.422.5425 skgibb@aol.com to arrange an interview with the author(s).

Note to editors: The complete study is available upon request from Steve Gibb or here:

<http://onlinelibrary.wiley.com/doi/10.1111/j.1539-6924.2011.01629.x/full>