



Our Mission:

The Saint Louis University School of Public Health is dedicated to the discovery, translation, and dissemination of public health knowledge to improve the health and well being of all.



Pediatric Asthma and Air Pollution

The purpose of this study is to determine whether the number of pediatric asthma ED visits in the St. Louis, MO metropolitan area, which ranked 6th in asthma morbidity out of 100 U.S. metropolitan areas in 2005, is associated with the level of EC particulate matter (aerodynamic diameter $\leq 2.5 \mu\text{m}$) during any season. Further, we suspect that temperature modifies the effect of EC after adjusting for the confounding effects of other air pollutants known to exacerbate asthma including total oxides of nitrogen (NO_x), SO_2 and O_3 . Funding is provided by the Electric Power Research Institute.

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Discovery

What is the health problem?

- ❖ In the US and other countries, epidemiologic studies have demonstrated associations between poor air quality and adverse health effects, particularly acute respiratory problems in children and the elderly.
- ❖ The relationship between air pollutants and asthma is complicated and understanding which pollutants exacerbate pediatric asthma requires carefully designed studies and complex data analysis techniques.
- ❖ We are monitoring daily levels of several pollutants and are building complex statistical models to assess patterns of atmospheric particulate matter. Specifically, we are evaluating the relationship between seasonal and daily increases in elemental carbon on asthma pediatric visits to the emergency room.

Translation

How do we take what we know and apply it to pediatric asthma providers and environmental health professionals?

- ❖ Similar studies have been conducted in other geographic areas.
- ❖ Our contacts with local providers and the St. Louis Asthma Consortium will allow us to translate our findings along with other studies into local action to improve the health of children.

Dissemination

How did we disseminate Pediatric Asthma and Air Pollution project?

- ❖ Publication in scientific journals, including methods of statistical modeling with fellow researchers in the US.
- ❖ Discussions with pediatric practitioners and web “briefs”.
- ❖ Share results with the St. Louis Asthma Consortium.

Change

What change occurred because of the dissemination?

- ❖ An important finding from this study will be to identify which statistical methodologies are best for studying the complex data sets linking air data to health care utilization data.
- ❖ Findings from this study will allow us to expand this study to include data from Express Scripts on asthma prescription refills.
- ❖ We will also learn the extent to which seasonal characteristics and pollutant matter exacerbate pediatric asthma ED visits.