

Tracking Air Quality and Asthma in New Jersey's Children

What was the problem/situation?

Children with asthma make nearly 20,000 visits every year to emergency departments across the state. Approximately 9% (188,000) of New Jersey's children under age 18 currently have asthma, and over 14% have a history of asthma. There are many triggers for asthma attacks and outdoor air conditions can be one of them.

High levels of ozone and fine particulate matter (PM_{2.5}) can trigger asthma in children, particularly during the warm months in the spring and summer. High levels of pollen also increase emergency department visits for asthma in children. The burden of these environmental issues on asthma in children needed to be better understood in New Jersey.



How was Tracking involved?

The New Jersey Tracking Program partnered with several other government and university scientists to do a linkage study combining data on air pollution, pollen, weather, and emergency department visits for asthma in children. Jessie Gleason, a CDC/CSTE Applied Epidemiology Fellow in the health department, led a statewide study of the impacts of ozone, PM_{2.5}, and four types of pollen (tree, grass, weed and ragweed) on pediatric asthma. The study looked at daily emergency department visits for asthma among children aged 3 through 17 during April through September, 2004 – 2007. Tracking staff at the New Jersey Department of Environmental Protection used national modeled air data to provide daily values for PM_{2.5} and ozone for this study. Dr. Leonard Bielory from Rutgers University collaborated to provide the daily pollen counts needed for the project. Weather data were obtained from the NJ State Climatologist.

What action was taken to resolve the problem?

This data linkage study found that days with high levels of ozone, tree pollen, or weed pollen were associated with increased pediatric asthma emergency department visits in New Jersey. Pollen from grass and ragweed did not appear to increase emergency department visits. This information can assist environmental health officials in supporting policies that decrease emissions that lead to high ozone levels. In addition, health officials can use this information to create specific alert notices for children with asthma during times when ozone is high and tree and weed pollen levels are high. “These types of studies quantify the impact of environmental pollution on public health. Now we have evidence that shows how pollutants and pollen contribute to the burden of pediatric asthma in New Jersey” said Jessie Gleason.



NJSHAD serves as the main data portal for NJDOH, providing public access to data and information from the entire New Jersey Department of Health, and hosts datasets for the New Jersey Environmental Public Health Tracking (NJEPHT) Program. NJSHAD provides static public health indicators which combine data and information, and dynamic custom public health query tools. The functionality, content, and utility of NJSHAD and the NJEPHT portal are constantly being enhanced.