



DEPARTMENT OF PEDIATRICS

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Mr. Don Brown
Clerk of the Board
Illinois Pollution Control Board
1021 North Grand Avenue East
P.O. Box 19274
Springfield, IL 62794-9274

Re: Case R2018-20

Dear Pollution Control Board Members,

I am a Pediatric Pulmonologist (Pediatrician specializing in children's lung health), practicing in this field for over 15 years. I am writing to strongly urge the Pollution Control Board to reject the proposed changes to Illinois' Multi-Pollutant Standard. This proposal would allow coal-fired power plants in Illinois to increase emissions and consequently increase the amount of particulate matter my patients are forced to breathe. Particulate matter (PM_{2.5} & PM₁₀) is the deadliest form of air pollution, and there is no safe exposure level.

Air pollution is a major contributor to poor health & is responsible for ~7 million deaths worldwide. Research over the past two decades has found that the smaller the particle, the more dangerous it is. This critical finding led to the U.S. government requiring states to begin monitoring PM_{2.5} levels in addition to PM₁₀ levels back in 1997. The prime factor that makes PM_{2.5} such a health concern is their size. While there is ongoing research being done to get a better understanding on the differing impacts of various materials that make up PM_{2.5}, the scientific record has conclusively found that the smaller particles cause the greatest health risk because they penetrate deeper into the lungs.

It is also worth noting that although the U.S. government sets standards for how much PM_{2.5} is allowable before states must take action to reduce levels, peer-reviewed published research has found significant evidence of adverse effects of breathing PM_{2.5} at levels significantly below the National Ambient Air Quality Standards (NAAQS) set by the U.S. EPA.

The smaller a fine particle is the further it can travel from its origin before being breathed in by a person. Gases emitted from large fossil fuel power plants, primarily nitrogen oxides (NOx) and sulfur dioxide (SO₂), are responsible for a large portion of the PM_{2.5} measured as nitrate and sulfate fine particles. This is particularly true in the eastern half of the country where most coal power plants are located. These gases are emitted at high speeds from very tall chimneys and change into PM_{2.5} as the wind blows. Thus especially vulnerable populations in Chicago neighborhoods – the people I treat daily - can suffer health effects from pollution emitted hundreds of miles away.

Asthma rates in Chicago exceed the national average (10%); in parts of Chicago (the South & West sides) rates (20%) far exceed even Chicago's average. Some Chicago communities report asthma symptoms in their children up to 45% (Puerto Rican children, some African-American schools on the South Side – Englewood for example). In some Chicago neighborhoods rates are as high as 1 in 2 or 1 in 3 children.

PM_{2.5} causes inflammation & injury in the lungs. The normal cleansing mechanism in the lungs (mucociliary clearance) is impaired. PM_{2.5} damages the cells responsible for protecting the lungs (alveolar macrophages).

Breathing PM_{2.5} reduces lung function in children, and this persists into adult years. There is an association between PM_{2.5} exposure and the development of asthma. Asthma is more prevalent in areas with high PM_{2.5} (including in Chicago). Higher levels of PM_{2.5} are associated with more asthma exacerbations (i.e. being sick with symptoms) and emergency room visits. This leads to lost days of school (children) and employment (for parent/caregivers). Asthma hospitalization rates in Chicago are nearly twice the national average.

Data suggests that the abnormal lung function in children who are exposed to high PM_{2.5} may be reversed if the exposure is reduced/removed. Scientific research continues towards finding the exact biological mechanisms for these observed health effects, but pediatric pulmonologists (like myself) advocate for reducing exposure to PM_{2.5} to protect our patients and minimize their symptoms.

Parents and caregivers can reduce triggers in the home that can lead to asthma exacerbations, but they can do nothing to prevent exposure to the air pollution from upwind power plants that blankets the Chicago area. Children and families with asthma are taught how to monitor air quality and reduce outdoor activity when air quality is poor, but this is a crisis protocol, not a solution to the ultimate problem which is air pollution.

In medicine, prevention is key. It reduces suffering. It reduces costs. It improves the quality of life and prolongs life itself. The Pollution Control Board should likewise focus on prevention as a means to improving health, particularly for already vulnerable populations including children with asthma. Reducing exposure to pollution can help children with asthma breathe easier.

The decision you are faced with is whether you will allow a change in the law that will allow these huge sources of air pollution to dramatically increase the amount of pollution above what they have been emitting for the last several years. This is not a theoretical exercise. Any action you take that will let those power plants increase air pollution will directly translate into children breathing more air pollution, and sadly, more medical care, lost time from school, harms to their families from parents losing time from work, and in some cases much more severe medical outcomes.

For the above reasons, I strongly urge the Pollution Control Board to reject the proposed changes to the Multi-Pollutant Standard. The proposed changes would allow NOx emissions to increase by nearly 80% and nearly double SO₂ emissions. This would lead to Illinoisans breathing more PM_{2.5} for which there is no safe level of exposure. The smarter course is to keep the current laws in place which help protect Illinois children.


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