

**Statement of
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**Before the
Senate Committee on Environment and Public Works
Subcommittee on Clean Air and Nuclear Safety and Subcommittee on Children's Healthy
and Environmental Responsibility
"Air Quality and Children's Health" Hearing**

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Good morning, I would like to thank Chairman Carper, Chairman Udall, Ranking Member Barrasso, and Ranking Member Alexander and Committee Members for your work here today. I am Patty Resnik, RRT-NPS, MBA, FACHE, CPHQ, CPUR, Corporate Director of Performance Improvement/Utilization Management at Christiana Care Health System in Delaware. Today, I am representing not only the tens of thousands who suffer from chronic lung disease in Delaware, but also the over 890,000 people of our state who desire to breathe clean air and so protect their good health.

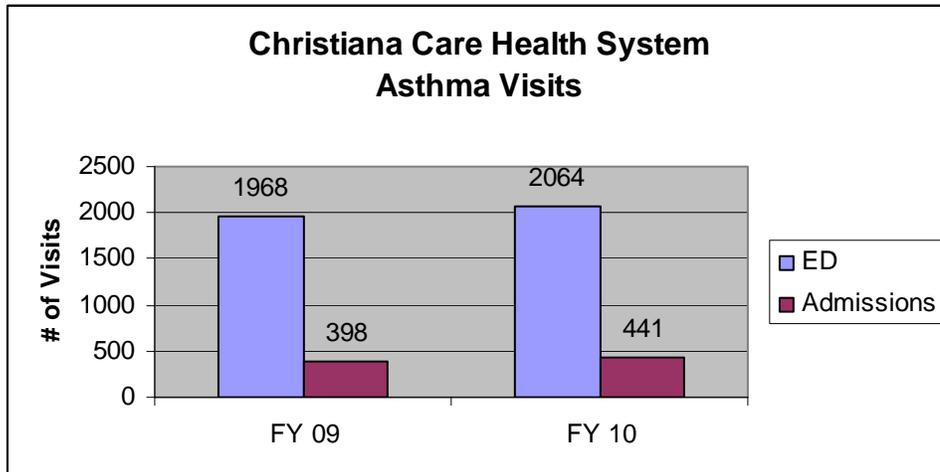
I am a Registered Respiratory Therapist with a sub-specialty certification in Neonatal and Pediatric Respiratory Care. My professional background also includes education, training, and certification in healthcare quality and utilization management. There are over 150,000 practicing Respiratory Therapists (aka Respiratory Care Practitioner or RCP) in the U.S. RCP's work under the direction of a physician and they evaluate, treat, and care for patients with cardiopulmonary disorders such as asthma.

Asthma is a chronic disease of the respiratory system. Asthma causes swelling and narrowing of the airways making it difficult for the person to breathe. An asthma attack occurs when a person encounters a trigger. Air pollution is a trigger for asthma for many people, especially children. Because children's airways are smaller than adult's, an asthma attack can be more severe for a child.

Asthma affects 8.5 percent of children in the U.S. and is the most common chronic disease. Children with asthma miss 2.48 more days of school than their peers making it the most common cause of school absenteeism (Partnership for America's Economic Success). The economic costs of asthma are substantial ranging from an estimated \$12.7 to \$19.7 billion (Weiss and Sullivan, 2001). This includes both direct medical costs and indirect costs of lost productivity. It is estimated that the annual cost of asthma in children ranges between \$2.0 and \$3.2 billion. (Wang, Zhong, and Wheeler, 2005; Weiss, Sullivan and Lyttle, 2000)

It is well documented that air pollution affects the health of adults and children. In Delaware, asthma was one of the top three diagnoses for the most frequent reasons for hospitalization for those aged 1-17 year in 2008 (Delaware Hospital Discharge Report, 2008). As an employee of the largest healthcare system in Delaware, I am reminded of this every day. We see people enter into our hospitals who are adversely affected by what they breathe. They are the real stories of suffering.

At Christiana Care, during FY 09 there were 1968 emergency department (ED) visits for asthma. Patients aged 18 or younger represent approximately 22% of the total asthma ED visits during this time period. In addition, there were 398 hospital admissions for asthma for this same time frame. The average length of stay (LOS) for these patients was 3.70 days. This means that school-aged patients missed approximately 4 days of school for their admission to the hospital for asthma. In FY 10, there was a substantial increase, 11%, in the number of hospital admissions for asthma, to 441. The average LOS was 3.78 days. We also experienced a 5% increase in the number of emergency department visits for asthma, to 2064. Patients aged 18 or younger again accounted for approximately 23% of the total asthma ED visits.



Christiana Care has taken asthma emergency response to the highest level. We offer life-saving treatment for asthma including the availability of Isoflurane, an anesthetic agent, in the emergency department(s) and critical care unit(s) if the patient presenting with a severe asthma attack is resistant to standard treatment. We have offered this advanced treatment to Delawareans since 1998.

What we see in our facilities reflects what the American Lung Association's 2011 State of the Air Report showed: that every county in Delaware received failing grades for ozone. In fact, New Castle County, the most populated county, as part of the Philadelphia Metropolitan Area, is among the top 25 most polluted cities for ozone and both year-round and short-term levels of particles. Until air pollution levels improve as a whole, the public's health will continue to be at risk.

It is imperative that we act now since children are one of the most vulnerable populations affected by poor air quality. A large portion of a child's lungs will grow long after he or she is born. Tiny air sacs, called alveoli, continue to develop after birth. Those sacs are where the life-sustaining transfer of oxygen to the blood takes place. In addition, the body's defenses that help adults fight off infections are still developing in young bodies. There is also the potential for overall health impact due to restricted physical activity. Restricted activity may lead to obesity which is a national health crisis. For instance, on high ozone days the recommendations include

limiting outdoor activities. This forces children to remain indoors and participate in more sedentary activities such as watching TV, playing video games, and lying around.

Despite the obvious physical differences, there are several other differences that may not be as obvious. Children take in more air per unit of body weight than adults. (Hricko A, Preston K, Witt H, Peters J, 2008) For example, if a child is running around outside playing a game, he may take in 20 to 50 per cent more air than an adult would doing the same amount of activity. This could mean the child is breathing in more air pollution too.

Children spend more time outside than adults as well. This often includes times when the air pollution is at its peak. While outside they may not recognize the symptoms that adults feel when exposed to high levels of ozone and particle pollution such as tightness in the chest, coughing, watery eyes, sore throat, and headaches. They tend to keep playing and may unknowingly put themselves at greater risk for an asthma attack.

The burden of poor air quality falls hard on families with limited financial resources. They often suffer disproportionately from the pollutants they breathe because of where they reside. These children often lack access to medical care necessary to treat the symptoms if they are recognized. (American Lung Association, 2010)

As a mother of two children- a son and a daughter, I am concerned about the quality of air that my children breathe. I have had the opportunity to recently serve two terms as the PTA President at my child's elementary school. Within my first term a spell of ozone action days occurred and the air conditioner malfunctioned at my youngest child's school. The temperature inside the building was stifling and the air quality was so poor that children were sent home early from school repeatedly. This happened close to the end of the school year and the air conditioning could not be fixed and the early dismissals continued over the final weeks of school.

Immediately I began getting calls from concerned parents and I was inundated with emails about the poor air quality at the school. Several parents shared with me that their child(ren) suffered from asthma and because of the poor air quality at the school, the child(ren) had to be kept home,

missing full days of school. These parents also expressed concern about the availability of their child's asthma medication at school. Medications were kept with the school nurse. To access their asthma medication, the child would have to walk from the classroom to the school nurse's office. Imagine having to walk through a building, while trying to catch your breath, and breathing in hot, stagnant air. Initially I thought that the malfunctioning air conditioner was a school administration issue, not necessarily an issue for the PTA. But after listening to parents, especially those with children who had asthma, or some other health condition, and considering the purpose of the PTA – to promote the welfare of children - I realized that the members of our PTA would be strong advocates for our children. Not only were children with a variety of chronic illnesses such as asthma, diabetes, heart problems, etc, now at risk because they were breathing in unhealthy air, but parents were stressed and worried.

Parents were forced to scramble for unanticipated child care to prepare for the early dismissals, resulting in additional childcare expenses due to early school closures. I personally had to make sure that someone would be available to meet my son, 8 years old at the time, at the bus so he would not have to walk home alone. For those who had children with medical conditions—including children with asthma, this was even more stressful. Finding caregivers who are comfortable caring for a child with a medical condition is not always easy.

Of equal importance, all of the children were missing out on valuable classroom instruction for an extended period of time. This situation happened at the end of one school year and then continued into the early fall of that same year. So again, after having the summer off, the school year started with early dismissals on hot days due to poor air quality. I am pleased to say that the PTA board and membership advocated to the local school board and local government and were able to work collaboratively with the school system to secure re-allocation of funds to replace the air conditioning a year later. But this situation makes clear the often unrecognized risks of unhealthy air quality.

I am here today because I've seen the improvements in air quality that have made Delaware a healthier place to raise children -- improvements made possible by the Clean Air Act. This vital

public health law sets health-based air quality standards. The EPA and states around our country have worked to implement the vital law that reduces air pollution. And it is working.

According to the EPA, the Clean Air Act Amendments of 1990 saved more than 160,000 lives in 2010. I entrust this Committee to protect all of those at risk from air pollution. Those who are most vulnerable populations, such as children, and people with chronic diseases like asthma, to the health enthusiast.

Thank you.

List of Citations:

Partnership for America's Economic Success:

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Wang LY, Zhong Y, and Wheeler L. Direct and Indirect Costs of Asthma in School-age Children. Preventing Chronic Disease: Public Health Research, Practice, and Policy. 2005; 2(1).

Weiss KB and Sullivan SD. The health economics of asthma and rhinitis. I. Assessing the economic impact. J Allergy Clin Immunol 2001; 107(1); 3-8.

Delaware Health and Social Services: Delaware Hospital Discharge Summary Report - 2008

American Lung Association, State of the Air Report, 2010:

<http://www.stateoftheair.org/2011/health-risks/health-risks-disparities.html>