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Testimony for House Bill 384
April 4, 2022
Public and Nonpublic Schools – Bronchodilator Availability and Use – Policy
(Bronchodilator Rescue Inhaler Law)

Dear Chair Pinsky, Vice-chair Kagan, and members of the Education, Health, and Environmental Affairs Committee:

Thank you for the opportunity to provide this written testimony. My name is Dr. Christy Sadreameli, and I am a pediatric pulmonologist, researcher, and faculty member at Johns Hopkins University in Baltimore City. Asthma is the most common chronic disease in childhood, and I take care of many children with asthma in my clinic and the hospital. Many of the young patients with asthma I care for attend school in Baltimore City and many other places around our state. I am testifying today in support of this bill that would provide emergency albuterol in schools. I am here as a pediatrician and as a citizen of the State of Maryland.

The prevalence of asthma in Baltimore City in children under 18 is more than twice the national average (20% in Baltimore City compared with 9.4% nationally), and asthma morbidity (including hospitalizations) is very high in Maryland, including Baltimore City. Asthma is a disease of the small airways in the lungs. Acute asthma symptoms, sometimes called asthma attacks, can be life-threatening. Asthma attacks are caused by bronchospasm, or tightening of the muscles around the small airways of the lungs, resulting in wheezing, coughing, chest tightness, and difficulty breathing. An asthma attack may be triggered by a respiratory virus, allergens, poor air quality, certain weather conditions, pollution, physical activity, and more. Because asthma attacks can occur suddenly and without warning, children with asthma should always have access to emergency medication that can quickly reverse their symptoms. The gold standard for this is albuterol, supported by all U.S. and international asthma guidelines. Albuterol, a short-acting bronchodilator, is given by inhaler with an attached spacer, and works right away to relax the smooth muscles around the small airways. This provides quick relief of asthma symptoms and can help prevent the onset of sudden respiratory decompensation. Albuterol is very safe, easy to administer, effective, and well-tolerated-- its side effects are very mild (increased heart rate, jitteriness).

Despite the need for albuterol, 80% of children with asthma do not have it at school. This problem affects all children—whether they are rich or poor, attend private school or public school, and living in urban settings or in rural settings. There are many reasons why a child might not have albuterol at school. They may have run out, may not have turned in the required forms, may have forgotten it (especially relevant with older teens who often have the responsibility to self-carry albuterol), it may have expired, it may be locked away in a locker or

office. Some parents do not realize their child's condition is even called asthma, and still other children experience their first-ever asthma attack at school. Despite case management by school personnel (including diligent work by school nurses) the fact remains that many children do not have the proper medication and documentation at school. As one example, one public school in Baltimore City with excellent and above-average health staff resources cites that approximately *half* of its known asthmatics have the medication and documentation at school. The situation can be much worse in other schools in Baltimore City and around the state. Another issue is that because asthma is so common, and particularly uncontrolled asthma is so common in certain parts of our state such as Baltimore City, severe, uncontrolled asthma can be "normalized" and parents and children may not realize that asthma is life-threatening, making it even less likely that they will submit the required forms and medication (which may require a parent taking off work, going to the pharmacy, making an appointment with a doctor, etc.). These barriers (of paperwork, finances, and comfort navigating the healthcare system) mean that the current system disadvantages children who are already at risk. Children whose parents have financial, transportation, or other barriers to medical care are often those who do not have the proper paperwork and medication on file with the school. Unfortunately, these are often some of the most at-risk asthmatics. Under the current system, many children are at risk of life-threatening asthma at school. Without access to albuterol, a life-saving medication, vulnerable children may suffer from severe, sudden asthma attacks and even die at school.

It is important that the law contains language that enables children exhibiting respiratory distress suggestive of an asthma attack to receive emergency albuterol, even if they do not have proper documentation of asthma diagnosis. Though this will occasionally result in a child without asthma being given albuterol for non-asthma symptoms (e.g., a child that is having difficulty breathing because of an anxiety attack, or a child with pneumonia), the risk of adverse consequences from albuterol given in a situation like this are minimal. If the underlying condition is not asthma, albuterol will not be effective; i.e., giving albuterol will not "mask" another diagnosis like pneumonia because it does not treat pneumonia. The risk of *not* giving this medication to children with an asthma attack is much higher, as it can result in ambulance transfer, serious illness, and even death. It is not difficult to train staff how to recognize respiratory distress and administer albuterol. Currently, some staff such as teachers and office staff already undergo similar training to use albuterol in certain cases (such as for a field trip). In order to have the greatest impact, and because the risk of adverse consequences of albuterol is so low, I recommend that you do not limit this legislation to children with a documented diagnosis of asthma. There is also no current policy or law that will cover these children. For example, the Epi-Pen legislation and implementation policies are meant to cover severe food allergy (anaphylaxis) and cannot, and should not, be viewed as an alternative to this legislation. Rather, this bronchodilator (albuterol) legislation should co-exist with the existing Epi-Pen legislation, as each covers a different situation. School personnel can and should be trained to differentiate between respiratory distress indicative of asthma and anaphylaxis.

In September of 2021, a group of stakeholders, including myself, published a joint policy statement in the *American Journal of Respiratory and Critical Care Medicine* in support of school stock albuterol legislation. The coauthors included physicians, school nurses, pharmacists, and parents on behalf of cosponsoring organizations: the American Thoracic Society, the American Lung Association, Allergy & Asthma Network Mothers of Asthmatics, and the

National Association of School Nurses. These organizations came together because of this important cause. HB 384, which you are considering today, contains the essential elements of a successful law that this group of experts recommended, including the general respiratory distress requirement, which was strongly recommended by this group of experts.

Stock albuterol programs have been found to be effective at preventing adverse asthma events at school and are cost effective. Data from a stock inhaler project in the urban Sunnyside Unified School District in Arizona showed that a stock albuterol inhaler was given 222 times to 55 children in 20 schools over one year. This resulted in a 20% reduction in emergency calls and a 40% reduction in ambulance transports in that year (Pappalardo, AA and Gerald LB, *Pediatrics*, 2019). The cost per school was $155, which included albuterol, educational and training materials, and disposable spacers (holding chambers).

Sixteen states have already passed laws or have guidelines providing stock emergency albuterol inhalers at school. Many existing laws were created by amending the existing EpiPen legislation. The rationale is similar, as EpiPens and albuterol are both life-saving medications that must be given quickly in an emergency situation to halt rapid decompensation. Just as for the EpiPen law, where staff training includes recognition of a life-threatening food allergic reaction (and does not require a documented food allergy diagnosis), this law should not be restricted to those with a documented asthma diagnosis. It also should not restrict access to albuterol, a life-saving medication, whether or not a health professional is physically present during an emergency situation to give it. This bill is meant to be pragmatic and to work in the current situation, even when a school nurse is not present (which is, unfortunately, often the case in our schools today).

I often tell my young patients with asthma (and their parents) that asthma does not have to control their life. However, we must consider the vulnerable children with asthma who are currently at risk for life-threatening asthma events in school. Please consider supporting HB 384, which will help to ensure that all children with asthma have access to life-saving medication in school and help protect them so that they can go on to enjoy a happy and healthy future. We were pleased with the unanimous support in the House of Delegates and look forward to your favorable report of the bill. Thank you again for the opportunity to testify today.

Information sources

1. Baltimore City Health Department **https://health.baltimorecity.gov/node/454**
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3. Papp EM, Gerald JK, Sadreameli SC, Gerald LB. Why Every School Should Have a Stock Inhaler: One Nurse's Experience. Am J Public Health. 2019 Nov;109(11):1528-1529
4. Asthma and Allergy Foundation of America. Updated October 2021. Accessed February 7, 2022. https://www.aafa.org/albuterol-in-schools/
5. Volerman A, Lowe AA, Pappalardo AA, Anderson CMC, Blake KV, Bryant-Stephens T, Carr T, Carter H, Cicutto L, Gerald JK, Miller T, Moore NS, Phan H, **Sadreameli SC**, Tanner A, Winders TA, Gerald LB. Ensuring Access to Albuterol in Schools: From

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Disclaimer: The views expressed here are my own and do not necessarily reflect the policies or positions of my employer, Johns Hopkins University.

Sincerely,

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