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Testimony for House Bill 86
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Public and Nonpublic Schools – Auto-Injectable Epinephrine and Bronchodilators – Use, Availability, Training, and Policies.

Dear Chair Atterbeary, Vice-chair Wilkins, and members of the Ways and Means 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. I care for children who live all over the state of Maryland and travel to my clinic or my hospital, including many children who live and attend school in Baltimore City. I am testifying today in support of this bill that would provide emergency albuterol in schools. I am here as a pediatrician, and asthma specialist, and 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 inappropriate 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, smoke, poor air quality, certain weather conditions, 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 most commonly 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, which is something I commonly encounter in my practice setting. Still other children experience their first-ever asthma attack at school. Under the current system, many children are at risk of life-threatening asthma episodes at school. Without access to albuterol, a life-saving medication, vulnerable children may suffer from severe, sudden asthma attacks and even die at school. In addition to the risk of death, significant delays in treatment increase asthma morbidity. In other words, when children do not have ready access to albuterol, their symptoms can worsen, leading into a more severe asthma exacerbation. In addition to an increased risk of death from asthma and increased suffering for the child, treatment delays such as these lead to increased school absenteeism, missed parent work time, and increased costs to families and to the healthcare system, as EMS transport, ED visits, and hospitalizations become more likely when treatment is delayed.

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. Using Baltimore City schools as an example, I have spoken with many former and current school nurses and learned that there are schools where less than half of known asthmatics have the required paperwork, and there are schools where zero students have the proper paperwork. This issue affects children from all over the state and the issue is particularly pronounced in schools with fewer resources, including the many schools in Maryland that unfortunately lack a full-time, always-in-person school nurse. Another issue is that because asthma is so common, and particularly uncontrolled asthma is so common in certain parts of our state, including 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. Finally, there are many barriers to getting the proper forms and medication, which may require a parent taking off work, making an appointment with the doctor, and going to the pharmacy. Parents may experience many barriers during this process (including those of paperwork, finances, fees associated with forms or additional medication supply (the extra medication, which is not always covered by insurance), comfort navigating the healthcare system, transportation, and discrimination). Children whose parents experience barriers to medical care and paperwork are unfortunately often some of the most at-risk asthmatics. This includes urban minority children, but also to children impacted by poverty and a lack of medical resources anywhere in our state, including rural areas. The differential access to albuterol for children in our state is an equity issue.

It is essential that the law contains language that enables children exhibiting <u>respiratory distress suggestive of an asthma attack</u> to receive emergency albuterol. I strongly recommend that you do not vote for any amendments to narrow the policy to children with a known asthma diagnosis, regardless of how the diagnosis is defined. There are a few reasons for this. <u>First, there is precedent. Consider other laws you have passed</u>. The Narcan legislation was written for students believed in good faith to be having an opioid overdose. For obvious reasons, students do not need to have a proven opioid dependence to be administered Narcan. Under the Epi-Pen legislation, schools may administer an Epi-Pen to a student believed to be having anaphylaxis. Students do not need a proven food allergy diagnosis. The Narcan and Epi-Pen laws are successes. This law should not require an asthma diagnosis for a child to receive emergency asthma medication. We should also consider why some who are suggesting amendments that

would restrict albuterol why they think children with asthma, who are more likely to be affected by poverty or of a minority group, should be treated differently from children with the other two diagnoses. Second, albuterol is very safe. A child may occasionally be given albuterol for non-asthma symptoms (e.g., difficulty breathing because of an anxiety attack, or shortness of breath from gym class for non-asthma reasons). However, because albuterol is so safe, it is better to err on the side of giving it rather than miss an opportunity to treat asthma, as delays could lead to a more severe asthma attack, 911 call, or death. It also typically reassures people to know that albuterol cannot "mask" another diagnosis, for example, if albuterol is given for pneumonia, anaphylaxis (a severe food or insect allergy reaction), croup, or anything else that is not asthma. It is straightforward to train staff how to recognize respiratory distress and administer albuterol. Currently, school nurses are trained to tell the difference. Some non-nurse staff, such as teachers and office staff, already undergo similar training to use albuterol in certain cases in Maryland (such as for a field trip). Typically, the school nurse confirms this training and ensures the child has the proper medication and paperwork. Third, many children are not classified by the school as having asthma. This could be for the many reasons outlined in a previous paragraph, but the most common reason is a lack of paperwork being filed with the school. Additional reasons include lack of parental understanding or familiarity with medical terminology (they often don't use the word "asthma"), or lack of a previous known asthma diagnosis, such as in the case of a first asthma attack happening in the school setting. Fourth, requiring a documented asthma diagnosis for children to receive albuterol, no matter how liberal the definition is made, magnifies health inequities. While we must work as a healthcare system and a society to improve outcomes and reduce disparities for pediatric asthma, there are multifactorial issues, including housing conditions and other environmental exposures, medical literacy, access to healthcare, the cost of drugs, medication adherence, and much more. We cannot fix all of this with this law, of course, and it is not the job of the schools to fix it either. But we can recognize that children spend most of their weekday in the school setting, and the children most likely to be harmed by lack of access to albuterol in school are the same ones who are often forgotten by society and at greatest risk of asthma morbidity. They are more likely to visit the emergency room, be hospitalized, or die from asthma. Simply acknowledging this and realizing that it would help vulnerable children, and the school nurses and staff who are with them all day to have access to albuterol, is one small thing we can do as a society to help. Finally, stock albuterol laws that restrict albuterol to children who are known asthmatics go against national stock albuterol policy guidelines and do not work very well. The most recent example of this is in Texas. Previously, Texas restricted their law to children with a documented diagnosis of asthma. They used a fairly liberal definition, in which parents could self-report the diagnosis rather than relying on paperwork completed by a medical professional. Despite this, they found that the policy was too restrictive and was not helping enough children. It was feedback from schools and school nurses that helped encourage the change. In 2023, a new version of their law was signed into law. This law is now in line with national guidelines, as HB86 is, and now allows children with respiratory distress to receive albuterol instead of restricting it to those with a confirmed diagnosis. Additionally, the state of Missouri previously had a restrictive law and they also amended the law, as Texas did. We should take the advice of national experts who have committed their careers to researching this issue and have written the national guidelines, including Dr. Lynn Gerald, who you will hear spoken testimony from. The recent states who have passed or updated stock albuterol policies, including Iowa, Virginia, Texas (updated law), and California have all used broad language and not restricted to diagnosed people with asthma. At this time, there are

only two remaining states with restrictive laws: New Hampshire and Utah. Utah is considering removing the diagnosis requirement at present. We should also learn from the mistakes that have occurred in other states, such as Texas and Missouri, and not repeat them in Maryland. Maryland should not pass a restrictive law.

There is no substitute for children with respiratory distress that is better than albuterol, including Epi-Pens. For the past several years, opponents of this bill, led by state-based nursing groups, have suggested that Epi-Pen should be the first line treatment for children without a documented asthma diagnosis. This is wrong, and the people saying this are not asthma experts like myself. Albuterol is the gold standard for quick relief of asthma symptoms. Epi-Pen is the gold standard for quick relief of anaphylaxis. It would be irresponsible and unscientific to knowingly treat children suffering from asthma attacks with Epi-Pens as the first line. Epi-Pens are not FDA approved for asthma, and no asthma treatment guideline (including GINA or NIH/NAEPP guidelines) recommends their use. It is true that the active ingredient in Epi-Pens was once a treatment mainstay—but this was 100 years ago, before albuterol was even invented. Science has advanced. In 2024, we use albuterol to treat asthma because it is a more effective drug for asthma with fewer side effects. You should not structure this law based on a 1920s-era medical approach that certain non-experts have recommended for treating asthma in a school setting. I want to address the use of epinephrine in a hospital or by EMS. On rare occasions, when a patient presenting with asthma symptoms is gravely ill and has not responded to other treatments, including albuterol, as part of a confluence of care measures, we will often administer many drugs, which can include injected epinephrine. In this case, it is a last line of treatment when other medications have failed, sometimes as a last resort before intubation. To be clear, it is not the first or most effective medication– it is one of the last. Albuterol is the preferred first-line treatment for asthma in a hospital setting or any setting.

It is important to plan for rare and exceptional cases. As an example, perhaps a child is extremely and suddenly very ill and the school personnel (nurse or other staff) cannot differentiate whether the child is having asthma or anaphylaxis. In these rare, exceptional cases, when the school cannot tell whether the child is having anaphylaxis or asthma, the student should receive Epi-Pen first (in case it is anaphylaxis), followed by albuterol (in case it is asthma). Thankfully, this is a very rare occurrence. It is important for protocols to be written, as they are in all other states with stock albuterol, to account for these circumstances. It is also very important **not** to apply this type of treatment plan to children who are not gravely ill. In the experience of other states with coexisting laws, this works very well. The training already exists. For just one example of published outcomes data, see the experience from Omaha, Nebraska, where a school had a joint protocol to give Epi-Pen to students with anaphylaxis and albuterol to students with asthma. Their protocol included students with known/documented food allergy and asthma diagnoses, as well as unknown. School staff were trained to tell the difference. They reported 98 emergency events. There were 89 uses of albuterol, 5 uses of Epi-Pen, and 5 instances where both Epi-Pen and albuterol were used. As you can see, both medications were only needed together 5 times out of 98 (reference 6).

Epi-Pen laws exist in all 50 states, so that means all 18 states with stock albuterol laws have Epi-Pen laws and school training too. We know that it works very well, with positive published and unpublished outcomes. School personnel in Maryland can and should be trained to

differentiate between respiratory distress indicative of asthma and anaphylaxis, just as they are in other states. We teach this to our young patients and their parents on a regular basis in my clinic, and it is straightforward. The training that is currently available from the American Lung Association and the state of Arizona address this issue.

HB86 is written in line with best practices and according to national stock albuterol guidelines, as well as recent legislation. The policy statement was published in September 2021 in the *American Journal of Respiratory and Critical Care Medicine* in support of school stock albuterol legislation. The coauthors included expert physicians, including myself, pediatric pulmonologists, general pediatricians, pediatric allergists, 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. HB86, 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 in the policy statement.

Stock albuterol programs 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).

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 a favorable report for HB86 this year, 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. Thank you again for the opportunity to testify today.

Information sources

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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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