Using public policy to improve outcomes for asthmatic children in schools

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School-based services to improve asthma management need to be accompanied by public policies that can help sustain services, scale effective interventions, create greater equity across schools, and improve outcomes for children. Several national organizations, including the Centers for Disease Control and Prevention, have recommended specific public policies the adoption of which in school settings can improve asthma outcomes for children. Although many states and school districts have adopted some of these policies, adoption is not universal, and implementation is not always successful, leaving inequities in children's access to asthma services and supports. These issues can be addressed by changing public policy. Policy change is a complex process, but it is one that will benefit from greater involvement by asthma experts, including the researchers who generate the knowledge base on what services, supports, and policies have the best outcomes for children. Asthma experts can participate in the policy process by helping to build awareness of the need for school-based asthma policy, estimating the costs associated with policy options and with inaction, advocating for the selection of specific policies, assisting in implementation (including providing feedback), conducting the research that can evaluate the effectiveness of implementation, and ultimately providing information back into the policy process to allow for improvements to the policies. (J Allergy Clin Immunol 2014;134:1238-44.)

Key words: *Asthma, children, school, public policy*

Abbreviations used
AAFA: Allergy and Asthma Foundation of America
ALA: American Lung Association
CDC: Centers for Disease Control and Prevention

Recent publications on childhood asthma from 2010 through 2014 have highlighted methods of prevention, new tools to detect asthma, and strategies for the prevention of asthma exacerbations in evolution.[1-5] Many of the strategies identified in these articles can be implemented in a school setting, where the management of asthma benefits from access to children with asthma, the presence of a school nurse, and the potential for more comprehensive programs and services than many children would otherwise access. In fact, schools are a uniquely critical point of care for children with asthma because they not only can provide direct care to help manage asthma but also can help to coordinate care across parents, children, providers, and school staff.[6] Schools also have an incentive to provide support to students with asthma because uncontrolled asthma can decrease attendance, which is related to academic achievement.[7]

However, school-based programs face many challenges, from the resources needed to implement them to the variability of school environments and related services and supports.[6,8] For this reason, the programs can be difficult to take to scale. An alternative to scaling school-based interventions through new programs and services is to pursue public policy changes at the school district or state level.[9] Researchers and health care providers can lend a credible voice to help move policy forward, particularly at the local and state levels, by providing data or expert testimony. Although federal legislation also plays a role in school health services, many of the recommended policy changes are at the state and local levels.[10-12] This article is designed to inform the reader of recommended policies and to make the policy process more accessible to researchers whose expertise on childhood asthma can become a catalyst for policy change.

UNDERSTANDING THE POLICY OPTIONS

Many schools that have attempted pediatric asthma programs have difficulty implementing and sustaining them for many reasons, including limited financial resources, human capital (eg, nurses and office staff), and time and a lack of proper communication between health care providers and parents.[9,13] In a comprehensive review of school-based screening and asthma programs, major obstacles were present for each approach a school might take.[13]

Programs that focus on medical care in schools, including access to a rescue inhaler, can be difficult to adopt and sustain, relying on the engagement of many different and busy persons, from school nurses to providers to parents.[14] Programs focused on building students' self-treatment skills have a different set of obstacles, such as the Building Bridges program currently in the Denver Public Schools, which includes both asthma management plans with access to medical care and skill development for students and their families.[7] These types of multilayer interventions tend to depend on funding sources external to the schools, which is often unsustainable and difficult to scale, leading to inequities across schools in the level of services and supports to students with asthma.[15] Additionally, lower-income schools tend to have difficulty sustaining interventions, even when funding is available, because of the frequent restructuring that results from efforts to address low

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TABLE I. Recommended policies to improve asthma management and care in schools[10,11]

Problem	Recommended policies (and the percentage of states adopting them, where known)
1. Inadequate access to asthma/allergy medication in school	• Physician's written instructions for medication on file (90%) • Students' rights to self-carry/self-administer asthma/anaphylaxis medication (100%) • Medication policies that provide resources, guidelines, and parameters (98%)
2. Inadequate documentation of student asthma/allergy information	• Identify and maintain records for students with chronic conditions (71%) • Update health records regularly (75%) • Maintain asthma/allergy incident reports (43%) • Maintain a health history form for each student • Identify/track all students with asthma diagnosis
3. Inadequate asthma management plans	• Standard emergency protocols for asthma/anaphylaxis (47%) • Explicit asthma/anaphylaxis management programs with policies, procedures, and resources • Use of an asthma action plan for all students with asthma
4. Inadequate health services capacity	• Nurse-to-student ratio of 1:750 or better (16%) • One full-time nurse per school • Case management for students with chronic conditions
5. Inadequate awareness/knowledge among school staff, parents, students, and community members	• Asthma education for school personnel, including emergency response • Asthma education for students, including self-management • State funding for staff training on asthma/allergy programs, policies, and procedures (63% of states have programs that address asthma) • Inclusion of asthma/allergy in the health curriculum for all students
6. Poor IAQ	• IAQ management policies (including HVAC; HEPA filters; carpeting; pesticide use; dampness; mold; maintenance and repairs, cleaning; and integrated pest management [22%]) • Periodic inspections (including HVAC system [59%]) • State funding/resources for technical IAQ assistance to schools • Use of integrated pest management (IPM) techniques/banning of pesticides inside schools when students are present
7. Poor outdoor air quality	• Notification of parents of upcoming pesticide applications (53%) • Prohibition of smoking/tobacco in school buildings, buses, and school-related functions and on school grounds • Health education curriculum includes tobacco use prevention component • Limiting bus idling time; implementing/promoting diesel school bus engine retrofitting program • Tobacco use cessation services to students • Funding/activities for faculty/staff on tobacco use cessation

HEPA, High-efficiency particulate air; *HVAC*, heating, ventilation, and air conditioning; *IAQ*, indoor air quality.

academic performance issues. Adding to this dynamic, even streamlined interventions that have external funding must compete with the many demands schools face, often ending up low on the priority list.

Public policy is a tool to address these inequities and can help prioritize asthma in schools. Changing public policy to improve asthma management and outcomes for children is not a new concept.[9] Mississippi has had a comprehensive school asthma law since 1972 that allows for the self-administration of medication by students with written authorization from health care providers and parents.[16] Since then, all states and school districts have passed school-based asthma policies.[17]

Policymakers and advocates at all levels who are interested in expanding public policies related to school-based asthma care can turn to the lists of policy recommendations for schools and states generated by the American Lung Association (ALA),[10] the Allergy and Asthma Foundation of America (AAFA),[11] and the Centers for Disease Control and Prevention (CDC).[12] The policies cover medication and treatment, awareness, and the school environment.[11] The ALA identifies policies that also identify ways that schools can and should engage community support, how to leverage appropriate school health services, the types of education that students and staff need, and how to ensure safe and enjoyable physical activity for students with asthma.[10]

Table I[10,11] explores a variety of policies that affect the school environment, as recommended by the ALA and AAFA, policies that, if implemented widely, would decrease disparities in access to care. However, these policy recommendations have not solved the problem of inequitable access to asthma services in schools because they are not consistently adopted or equally enforced across the country. According to the AAFA, of the 18 policies they recommend, states have currently adopted anywhere from 4 to 12.[11]

The regulatory landscape is uneven at best and inequitable in many ways. For example, one recommendation is for schools to use at least 1 nurse per 750 students, but as of 2013, only 8 (16%) states require or recommend this policy at a state level.[11] Furthermore, only 45% of public schools have a full-time nurse on site, 30% have a part-time nurse, and 25% have no nurse at all.[18] These wide disparities existing across states and school districts have prompted policymaking efforts, such as the Student-to-School Nurse Ratio Improvement Act of 2013, which calls for the provision of competitive demonstration grants through the US Department of Education.[19]

Recommended policies are being adopted, and some states and schools are addressing the multiple issues identified in the policy list above, leading them to implement comprehensive programs that address education and awareness, as well as asthma management. For example, the CDC has funded several successful