

3-1-2011

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Recommended Citation

Hawkins, A., Painter, L., & Richter, S. (2011). Managing Childhood Asthma in the School Environment. *Perspectives In Learning*, 12 (1). Retrieved from <http://csuepress.columbusstate.edu/pil/vol12/iss1/10>

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Managing Childhood Asthma in the School Environment

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Abstract

It is often taken for granted that schools are instrumental in the spread of illness from child to child as well as from child to teacher. In addition to the nagging colds, stomach viruses and other temporary maladies, the school environment may actually contribute to some lifelong medical conditions. Many children face an unhealthy school environment on a daily basis, year after year, which may contribute to a condition called asthma. Asthma causes the airways of the lungs to swell and constrict and can often flare up without warning. Asthma is one of the top childhood disorders and is also a leading occupational disease of teachers and custodians. Many hours are spent in the classroom setting and over time this assumed 'safe' setting can turn into a "sick classroom" affecting those who are most vulnerable. The focus of this article is to examine the effects of asthma on school age children and provide information to empower teachers to facilitate change in the classroom environment. Working together with parents and administrators, teachers can make changes that will reduce asthma triggers and thereby reduce and possibly prevent severe asthmatic episodes.

Classroom teachers and other school personnel are responsible for providing an educational atmosphere where students have the opportunity to fulfill their potential in academics. This is a challenge when students are faced with breathing difficulties in the classroom setting. These breathing or respiratory difficulties may be cold, flu, or allergy related, but often the problem is asthma. Asthma is one of the most prevalent and serious lifelong diseases in children. This essay will discuss the rising prevalence of asthma and what school personnel can do to make the classroom a more productive learning environment for school age children with asthma.

Childhood Asthma

Asthma is a chronic airway inflammatory disease, often arising from allergies, characterized by bronchospasms

that subsequently cause shortness of breath, wheezing and coughing. Due to swelling, the air is restricted from passing easily through the bronchioles and makes it hard for a child to breathe. These flare ups are also called asthma attacks or exacerbations. Asthma affects children in different ways. Some children have asthma attacks only during allergy season, when they breathe in cold air, or when they exercise. Other children have more severe attacks that require a physician's intervention due to the continuous inflammation underlying the asthma. There are important warning signs that indicate when a child's asthma is not in proper control. According to the American Lung Association, these signs include: needing to use a quick relief inhaler more than two times per week, waking at night with asthma symptoms more than two times per month, or having to refill a quick relief

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inhaler more than two times per year (American Lung Association 2010, May 4).

Asthma rates in children are reaching epidemic proportions, adversely affecting children's quality of life and educational potential (Levy, Heffner, Stewart, & Beeman, 2006).

In the United States, an estimated nine million children have asthma and more than four million children had an asthma attack within the previous year. Childhood asthma accounts for approximately 200,000 hospitalizations and 658,000 emergency department visits annually in the United States (Camargo, Jr., Ramachandran, Ryskina, Lewis, & Legorreta, 2007, p. 1054).

This disorder is the third leading cause of hospitalization among children under the age of 15. Asthma afflicts children of all ages, races, and ethnic groups but "has a disproportionate effect on low-income minority children who reside in large urban areas" (Nelson, Awad, Alexander, & Clark, 2009, p. 210). "African American children are four times more likely to be hospitalized and five times more likely to die from asthma than Caucasian children" (Lee, Jackson, Parker, DuBose, & Botchway, 2009, p. 5). In 2009, there were approximately 14.4 million lost school days in children with asthma (American Lung Association, 2010). These lost days not only affect the education of the individual children but the school systems as well. Accreditation and state funding for schools are directly correlated to attendance, therefore increased absences have a negative impact on funding (Moonie, Sterling, Figgs, & Castro, 2006).

Living with Asthma

To simulate what a child may experience while having an asthma attack, try exercising for a short time while

breathing through a small tube or straw. A feeling of panic will likely occur while experiencing symptoms of wheezing, breathlessness, chest tightness and coughing. This is similar to the feeling that an asthmatic child experiences when an attack occurs. Wheezing occurs mainly when the child exhales, and is the result of air moving through a narrow airway, causing airflow turbulence and noisy respirations. In a classroom setting, the teacher must not only respond to the urgent needs of the asthmatic child who is experiencing these symptoms but to other students who may be watching and frightened for a peer who is obviously in distress and gasping for air.

Children with asthma are understandably at risk for poor academic performance due to acute exacerbations of this disease, increased absenteeism secondary to their symptoms, adverse effects from asthma medications, poor medical management of the disease, and/or the stress associated with having a chronic illness. According to Moonie, Sterling, Figgs, & Castro (2008) school absences due to persistent asthma are usually brief, but this pattern of absence has been shown to be more harmful academically. Studies have shown that children with asthma are at an increased risk of learning disabilities, grade failure, and lower performance on standardized tests as compared to well children (Moonie et al., 2008). Children with asthma have higher absence rates, higher risk of behavioral and emotional problems, and a higher occurrence of rejection by peers. It is not uncommon for children with a chronic disease like asthma to internalize these difficulties and experience feelings of poor self-esteem.

Asthmatic children or adolescents may dismiss or minimize their symptoms in order to avoid negative peer response and avoid taking necessary medications in front of their classmates (Collins et al., 2008). In all

50 states, students have the legal right to carry asthma medications while at school. Because children do not wish to be treated differently than their peers, often times the children may not share that they have asthma. This desire to “fit in” may eventually lead children to take risks with their health in order to be “just one of the crowd” according to the American Academy of Allergy Asthma & Immunology (2000).

Asthma Triggers in the School Environment

Many common asthma triggers are found in school buildings. Mold growth may occur when moisture or water accumulates indoors, particularly if the moisture problem remains undiscovered or unaddressed. Temporary structures in schools, such as trailers and portable classrooms, have frequently been associated with moisture and mold problems. Dander from animals in the classroom, and dander brought in on clothing from animals at home, stuffed animals, secondhand smoke, pests and dust mites are known environmental asthma triggers found in schools. Poorly ventilated stoves and heaters and common household products including cleaning agents, perfumes, strong odors, chemicals, pesticides and sprays are other triggers contributing to asthma exacerbations. Outdoor environmental asthma triggers, like ozone and particle pollution, exposure to cold air, and bus exhaust fumes can also affect children with asthma while at school according to the Environmental Protection Agency (United States Environmental Protection Agency [US EPA], 2010). The fact that asthma is a leading occupational disease for teachers and custodians indicates that these triggers are not only a health concern for children but for staff members as well (“Cleaning for healthy schools toolkit,” 2008).

The Role of School Personnel in Managing the Environment

When asthma is well-controlled, students are better prepared to learn. With appropriate medications and controlled environmental factors, asthmatic children should be able to learn, play, and participate in sports with their peers. For medications to be effective, they must be used every day, even when the child is not symptomatic. While in school, children can use peak flow monitoring and take medications with supervision. A peak flow meter is an important tool that can help teachers determine how much air the student can get out of the lungs. This can alert teachers to early onset of asthma symptoms. A normal reading would show very little difference between the day-to-day readings or between the morning and evening readings. The main clue to uncontrolled asthma is peak flow readings that change significantly from day-to-day or between morning and evening.

According to the Centers for Disease Control, there will be three asthmatics in a classroom of thirty students (Bass, 2010). Given the large number of children with asthma and the significant time they spend at school, it is important that school personnel be trained to facilitate management of asthma exacerbations. However, asthma is often unrecognized by school staff and they frequently lack the knowledge and skills needed to manage it effectively. Too often schools are not provided with information about treatment plans prescribed by children’s primary care providers.

The first step in improving the school’s ability to facilitate asthma management is effective communications between parents and schools. It is primarily the responsibility of the parents to make sure that the appropriate school personnel, specifically including classroom teachers,

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counselors and school nurses, are well informed of the child's condition. Parents are responsible for providing an Asthma Action Plan which should be updated each school year by the child's regular healthcare provider. This is critical to ensuring that the child's asthma continues to be effectively controlled and provides an opportunity to evaluate medications and physical activity restrictions. Parents should familiarize themselves with school policies and find out who is responsible for distributing copies of the plan to all school personnel who may be in regular contact with the child.

The prescribed treatment plan for an asthmatic child should be priority information in the child's school records. Symptoms and treatment plans must be shared with substitute teachers, playground supervisors, physical education teachers, coaches, and bus drivers so that everyone understands the physical activity modifications and pre-medication requirements for each student with asthma. It is essential that appropriate school personnel be able to contact parents in case of an emergency and it is beneficial to have at least two back-up individuals to contact.

It can be a frightening experience when a child has an asthma attack in a classroom, but having an asthma action plan will help school personnel respond appropriately during an attack. Keeping an asthma action plan on file ensures that school nurses will not have to guess about inhaler or nebulizer treatments, wasting valuable seconds during severe breathing episodes. "An effective asthma action plan should detail personal information about the child's asthma symptoms, medications, any physical activity limitations and provide specific instructions about what to do if an asthma attack does not improve with prescribed medication" (American Lung Association, 2010, July 28). An asthma attack may be severe enough to need urgent

medical care, but in most cases symptoms can be managed on-site if the school has an effective asthma action plan in place.

Classroom teachers almost always have accepting attitudes toward students with chronic conditions but the specific knowledge base regarding asthma, its common triggers, and treatment may be minimal. Too often staff members do not feel prepared to support these students with acute needs. Due to decreased funding, school nurses are often not available as a resource. Successful asthma education programs often rely on non-school personnel with specialized training in asthma education, making these programs difficult to sustain (Bruzzese et al., 2006). "To help educators address this situation, many federal agencies and national organizations in the fields of health services, education, health education, and air quality have developed resources to assist schools in managing students with asthma and minimize symptoms of asthma by optimizing the school environment. These resources are listed on the website of the National Coordinating Committee on School Health and Safety (NCCSHS) at <http://mchb.hrsa.gov/healthystudents/resources/index.asp?mode=viewcategory&category=23> (Taras & Potts-Datema, 2005, p. 296).

Practical Plan for Asthma Management

Asthma puts children at risk of missing more days from school than those without asthma. School-based asthma intervention programs must be supported by administrators, teachers, and school nurses in order to improve both attendance and academic achievement for all students with respiratory conditions. Effectively managing a child's asthma is best accomplished through a comprehensive plan that addresses both the medical management of the disease and the avoidance of environmental triggers. Social needs and

treatment plans sensitive to those needs should be taken into account when developing these plans. Because children spend much of their time in school, it is important for schools to reduce exposure to environmental asthma triggers as much as possible. Schools should strive to eliminate sources of moisture and reduce indoor humidity. Mold, moisture, leaks, and spills should be promptly reported and controlled. It is important to eliminate inappropriate water and food sources in order to control and manage pest problems, including cockroaches and pest allergens. Classroom air filters should be changed on a recommended schedule. Electric fans, ceiling fans and carpeting should be removed from classrooms. School administrators should conduct regular walkthroughs of the school to determine if asthma triggers exist. If triggers are found, a remediation plan should be developed and implemented as quickly as possible.

There are many specific actions that individual classroom teachers can take to facilitate asthma management in the classroom and promote asthma friendly schools. The following suggestions could be very helpful in improving conditions for asthmatic students as well as for others who may have less severe or seasonal respiratory problems:

- Know your school's asthma policies and asthma emergency procedures.
- Identify students with asthma and become familiar with their individual action plans. Review these plans with the school nurse.
- Promote an atmosphere of open communication between the teacher and the student.
- Report mold, odors, and other unsafe conditions to maintenance and administrators.
- Report problems with pests directly to maintenance staff and do not use spray pesticides.
- Reduce classroom clutter and use plastic storage bins.
- Make sure all vents are free of obstructions such as furniture and storage bins.
- Avoid the use of carpeting and upholstered furniture.
- Avoid all aerosols. Aerosols and other chemicals can irritate lungs and potentially cause breathing problems.
- Keep pets out of the classroom. Both feathered and furry animals are potential triggers for asthma.
- Avoid food in the classroom and clean up spills quickly.
- Monitor art and science projects for potential odors and toxicities.

There is a wealth of information available about asthma and the steps that can be taken to help control asthma in classroom settings. The American Lung Association, Centers for Disease Control, National Asthma Education and Prevention Program, and the United States Environmental Protection Agency are all excellent sources of information. Downloadable school resources such as “Managing Asthma: A guide for schools,” “Asthma and Physical Activity in School”, “Asthma Awareness Curriculum” and many others are available at www.nhlbi.nih.gov/health/prof/lung/. A specific resource that would be helpful for teachers is the Indoor Air Quality (IAQ) kit found at www.epa.gov/iaq/schools/tools4s2.html.

School personnel should consider forming committees to promote a healthy school environment. School parent-teacher organizations should encourage parents to communicate, participate, and become health advocates for their children. Students with asthma or other respiratory illnesses should be encouraged to participate in

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programs such as the American Lung Association's "Open Airways For Schools" or "Kickin' Asthma" so that elementary school children can learn to manage their own asthma.

Conclusion

At this time, there is no cure for asthma; however, asthma can often be controlled with prescription medicines that help prevent or relieve symptoms and effective plans to manage episodes. Given the amount of time children are away from home during the school year, it is important that children and their families work closely with teachers, school nurses, and other educators to avoid potential asthma triggers, and deal effectively with the symptoms. It is in the best interest of the child and the school to promote an educational atmosphere where all students have the opportunity to fulfill their academic potential.

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