



Questions and Answers from the Managing Asthma in the School Environment Webinar

Table of Contents

Pages 1-2	School Asthma Management
Pages 2-3	Asthma Action Plans
Pages 4-8	Medications
Pages 8-10	Triggers
Page 10	Families, Parents and Caregivers
Page 10-11	Diagnosis/Health
Page 12	Environmental Management
Pages 12	Resources

School Asthma Management

Q: Are you using any particular model successfully, like the U.S. Centers for Disease Control (CDC) Coordinated School Health model to intervene with these concerns? Any others?

A: The CDC's Coordinated School Health (CSH) model is an excellent model to improve supports for overall general school health and wellness. For more information on CSH specifically as it relates to asthma, see *Strategies for Addressing Asthma Within a Coordinated School Health Program* at: <http://www.cdc.gov/HealthyYouth/asthma/strategies.htm>. Due to the variation in local approaches to school health, different schools each will find some models more helpful than others.

Q: What do you consider an Asthma Management Program?

A: A school-based asthma management program is a set of policies and procedures that allow students to successfully manage their asthma at school. Most successful programs use the CDC *Strategies for Addressing Asthma within a Coordinated School Health Program* and have an environmental management plan. The *IAQ Tools for Schools* Action Kit can help you create an environmental management plan.

See *Strategies for Addressing Asthma within a Coordinated School Health Program*:
<http://www.cdc.gov/HealthyYouth/asthma/strategies.htm>.

Also see *IAQ Tools for Schools* Action Kit: <http://www.epa.gov/iaq/schools/actionkit.html>.

Q: As a healthcare provider for children with asthma, what legal considerations do I need to observe when deciding to discuss a student's asthma care with school personnel?

A: Obtain written parental permission using a HIPAA-compliant form. Schools will similarly obtain parental permission using forms that comply with FERPA, a related law that applies to

school records, including school health records. Although not legally required, it's also good to obtain assent from the student.

Q: How can you bridge a relationship with an asthma specialist and a school especially when parents do not fully understand a child's asthma?

A: School nurses and asthma educators can be great resources to promote complete communication and educate families.

Q: Do you talk about the impact of a full-time nurse in every building? Research is showing this is the one main common denominator to reducing asthma absenteeism and management.

A: We agree. Every child deserves a full-time school nurse! The availability of a school nurse who has the time and expertise to assist children in the management of their asthma can reduce student absence from school, with positive impact both on the student's learning and the school district's fiscal status (since they often receive subsidies based on average daily attendance).

Q: What considerations should I be aware of concerning asthma care in a school where the staff member is not a nurse, but provides asthma care to students?

A: This depends on your state regulations (including, but not limited to, your state's Nursing Practice Act) and state and local delegation policies and procedures. At a minimum, the staff member needs to be knowledgeable about asthma medications, their proper administration, how to recognize a person in respiratory distress, and how to call for emergency assistance when necessary.

Q: In evaluating a student's asthma, one tool I use is O₂ level. I find this useful. What are your thoughts?

A: Oxygen saturation (as measured by a pulse oximeter) often changes late in the evolution of an asthma exacerbation. They should not be relied upon as a principal tool to assess the severity of an asthma event. Pulse oximeters are recommended for managing asthma attacks in emergency departments. There is no evidence that they are appropriate for school-based asthma management.

Asthma Action Plans

Q: Do you consider all asthma life threatening and should all students have emergency care plans in place prior to starting school?

A: Asthma can be life threatening. All students should have emergency care plans (asthma action plans) in place prior to starting school. However, students should not be excluded from school if they do not have one. For students without an asthma action plan on file, schools should have a standard protocol or standing orders.

Q: Do students with asthma need a health plan and a 504 plan or is a health plan sufficient?

A: Whether or not an asthmatic student needs a 504 plan in addition to an asthma action plan depends on your school district policy. In many school districts, students with well controlled asthma only need an asthma action plan. 504 plans are especially helpful for students with poorly controlled asthma – especially if it is triggered within the school environment. They are also useful when the student transitions from one school to another.

Q: Is it possible to stress how important it is to have an asthma action plan at home and school?

A: Yes! Every student with asthma needs an asthma action plan. It should be followed at home, at school, at child care settings — everywhere the child goes. Nearly all asthma coalitions and associations recommend an asthma action plan for all settings. Communication between schools, parents or guardians, and other places children are (e.g., after-school programs) is essential for each child’s high-quality asthma care.

Q: Is using a peak flow meter a part of the asthma action plan?

A: Asthma action plans often reference either peak flow meter readings or symptom scales. When available, peak flow meter readings can be especially helpful for students who are poor perceivers and for school staff who might not be experienced in managing asthma. However, peak flow meters often underestimate the severity of an asthma event, and should be utilized as part of the overall assessment of a child’s asthma event. Assessment should also include evaluation of the severity of respiratory distress.

Q: Do we need to get permission of the parent before passing out an asthma action plan to the teacher and physical education teacher, etc?

A: Distribution of a child’s asthma action plan depends on school district policy. Some school districts use individualized health plans instead of asthma action plans. Consult with the school nurse or district school nurse supervisor for more information about privacy laws and policies.

Q: How many puffs are being used for a student to be considered in the red zone on an asthma action plan?

A: National guidance lists a range between 2 and 6 puffs. However, a student’s asthma action plan should list the *specific* number for that student. For more information on the national guidelines, go to: http://www.nhlbi.nih.gov/guidelines/asthma/gip_rpt.htm.

Medications

Q: Please clarify the difference between designating a child able to self medicate and truly self reliant re: assessment.

A: Some children have been taught how to use their own medication, but may tend to incorrectly estimate how much difficulty they have to breathe. It is preferable to have an adult evaluate the child's respiratory status and assist the child in responding to the asthma event.

Q: At what age is it appropriate for a child to carry his/her own inhaler?

A: The appropriate age for a child to carry his or her own inhaler varies, depending both on the child's maturity and on the child's personality. Some children can be depended upon to carry their own inhaler utilizing a backpack, fanny pack, or similar device, as young as first grade; others are not dependable in middle school. This decision should be made by the parents jointly with the child's asthma physician.

National guidance exists on assessing when children are ready to self-carry their asthma medicine. Monitoring is an equally important aspect to ensure appropriate use.

For more information, please go to: *When Should Students with Asthma or Allergies Carry and Self-Administer Emergency Medications at School?*

http://www.nhlbi.nih.gov/health/prof/lung/asthma/emer_medi.htm

Q: Is the speaker suggesting that elementary students to carry the rescue inhaler as well?

A: The age at which a student carries his/her own inhaler depends upon the student's skill and responsibility. Many schools find that 5th grade is a good time to develop self-carry skills before students move on to middle schools, if the student has not already developed these skills.

National guidance exists on assessing when children are ready to self-carry their asthma medicine. Monitoring is an equally important aspect to ensure appropriate use.

For more information, please go to: *When Should Students with Asthma or Allergies Carry and Self-Administer Emergency Medications at School?*

http://www.nhlbi.nih.gov/health/prof/lung/asthma/emer_medi.htm

Q: What advice do you have for urban schools with student populations with undiagnosed asthma who are going untreated or for undiagnosed students using "black market" inhalers?

A: This problem is not limited to "urban schools." Develop systems within the school to ensure that every student has a medical home. If you see "black market" inhalers in school, contact parents immediately to discourage this dangerous practice. Also remind parents that undertreated asthma can interfere with a child's ability to participate in activities both at school and away from school, and that asthma events can even be life threatening. However, do not take medicine away from a student until another solution for treating an asthma episode has been identified.

Q: Will Medicaid pay for two inhalers at the same time — one for home and one for school?

A: Medicaid is a state-based program and the laws vary. However, in most states Medicaid will pay for two inhalers at the same time when the prescriber writes “Medically Necessary” on the prescription for two quick-relief bronchodilator inhalers.

Q: Is it OK for students to be ordered to take Albuterol daily before recess or physical education?

A: Yes! This is appropriate for students with exercise induced asthma. It will permit students to be active and prevent asthma symptoms.

Q: Are there other medications that a student may be on that may affect the effectiveness of their asthma medications both rescue inhaler and corticosteroids?

A: There are many interactions between medications. It is important that all students have a medical home physician who monitors all of their medications.

Q: Are you familiar with doctors prescribing inhalers to young children just based on a child's statement of having trouble breathing after exercise — without doing further testing?

A: Shortness of breath after exercise may be caused by multiple factors, only one of which is asthma. This practice is not consistent with the NAEP guidance on the diagnosis and management of asthma. For more information, go to: *Expert Panel Report 3 (EPR3): Guidelines for the Diagnosis and Management of Asthma:*

<http://www.nhlbi.nih.gov/guidelines/asthma/asthgdln.htm>.

Q: Do high school asthmatic students need to use spacers?

A: All students should use spacers with their metered dose inhalers. This practice has been shown to improve drug delivery to the lower airway for the vast majority of patients, therefore improving the effectiveness of the medication.

Q: At what age do you believe students can stop using spacers?

A: A few older students may have such good inhalation skills that a holding chamber isn't necessary, but not many -- probably only 5% or less of the student population. If a student's asthma isn't under good control, and the student is using inhaled medications, this may be one sign that the student is not obtaining effective delivery of inhaled medications and that the student should use a holding chamber. This decision should be made in consultation with the physician managing the child's asthma medications.

Q: How are adolescents going to carry a spacer with them; they take up space!

A: Several spacers are small and fit easily in a pants pocket or fanny pack (such as the Optihaler and the Pocket Chamber, for example). (Note: mention of these specific products is for

identification only, and does not imply endorsement of a specific product.) Larger holding chambers may be kept in the health room/nurse's office or in a student's locker. If a student's asthma isn't under good control, it's best to have episodes monitored and recorded by the school nurse.

Q: How do you suggest handling situations where the child is too young to carry/administer own meds, but travels on school bus to/from school?

A: This depends on your state and local laws, policies and procedures. In some school districts inhalers may be kept by bus drivers. Bus drivers should always be able to contact emergency medical services.

Q: I am concerned about students who use rescue inhalers every day when at school even when they exhibit no symptoms. Also, some may be using long acting control therapy at home daily. Doctor order may read "as needed" but parent wants them to use rescue inhaler every day whether having symptoms or not. When the nurse makes assessment and determines rescue inhaler not needed how should we handle parent/MD who insists they use rescue inhaler every day for all 180 days of school?

A: If the child is using the inhaler before exercise, do not be concerned. This is appropriate medical management. Otherwise, document your assessment (including peak flow readings) and share this information with the parent and the physician (with appropriate parental permission).

Q: I understand that a child should have a spacer, but the reality is that many do not. If a child does not have one, do you recommend that the child put the inhaler directly in their mouth or use an open mouth technique?

A: If the child does not have a spacer, they are probably obtaining little benefit from their metered dose inhaler, so the first strategy would be to contact the parent and/or the physician managing the asthma to ask for assistance in obtaining a spacer.

Failing that, assess the student's inhaler skill and determine which technique appears to yield the best results. Quick improvement in peak flow rate can be a good assessment tool.

Q: A student had good exercise tolerance with maintenance Advair, but it was changed to Flovent to try to "reverse" bronchomalacia. Now exercise tolerance has decreased. How long will the adjustment process take or could this be a sign that this isn't a going to be a good fit? He doesn't use the rescue inhaler frequently, but he is becoming fatigued more easily and "out of breath."

A: This is a question for the student's physician. Why isn't albuterol being used for "out of breath"? Most asthma action plans would consider this an indicator.

Q: If a student has a rescue inhaler at home should they be required to have one at school?

A: Yes. It won't save the student's life if he/she has a severe attack at school and the inhaler is at home.

Q: Is it possible to overuse the rescue inhaler?

A: No and yes. If a student is having a severe attack and hasn't gotten sufficient relief from two or four puffs of albuterol, it isn't considered "overuse" to use two more while waiting for EMS.

However, if an elementary school student is using albuterol (for symptoms) more than once a day or more than twice a week, then it is being overused. This student needs more or additional controller medication.

Q: What about using an inhaler with a mask or chamber versus using a nebulizer treatment? Which is more effective for students with asthma and other respiratory disorders?

A: For most students they are equally effective. Because inhaler treatments are much quicker, they are generally preferred in the school setting.

Q: What do you think of students being given nebulized meds at school when inhalers do not work?

A: Some students obtain better benefit from nebulized medications, as compared to inhalers. In these cases, nebulized medication may be appropriate. However, for most patients, these routes of administration are equally effective, and because inhaler treatments are much quicker, they are generally preferred in the school setting.

Q: What do you think of students self carrying inhaler then coming to the health room for nebulizer if the inhaler is ineffective?

A: These scenarios may be appropriate for a specific student. If the inhaler is used without a holding chamber, it is likely that it didn't work because of inadequate inhaler technique.

Q: With an obese child, should the student receive inhaler treatment if he/she appears just out of breath, without audible wheezing?

A: It depends on the child's asthma action plan. First assess peak flow, particularly comparing peak flow at baseline and when the child appears out of breath. Then, work with the child's physician to refine the child's asthma action plan to optimize their asthma control.

Q: What if the student only has a rescue inhaler, no controller?

A: It depends on the student's degree of control. If the student's symptoms are well controlled (and therefore the child is not using the inhaler very often), then they are appropriately managed. If not, then the student should be referred to their asthma care physician for appropriate medication.

Q: What would be a reason that a child is prescribed a nebulizer instead of an inhaler with a spacer?

A: This may be parental or prescriber preference, or inability on the part of the child to use an inhaler with a spacer. If the duration of a nebulizer treatment is interfering with the student's school work or activities, ask the family and physician.

Q: Why don't you address abdominal breathing as an effective way to treat drug-free asthma?

A: Abdominal breathing is not effective treatment for asthma.

Q: Why would some children routinely be prescribed albuterol inhalers or nebulizer treatments a couple of times a day at school?

A: This may be appropriate for several days following a severe asthma exacerbation. It may also be necessary to control asthma for the duration of a respiratory infection or an unusual, unavoidable trigger exposure.

Triggers

Q: Are classroom pets ok — guinea pigs, rabbits, birds?

A: The presence of animals in the school setting is controversial. Some animals, more than others, in the classroom can trigger asthma episodes. If pets are part of the classroom, keep the animals and cages clean. In some situations, it may be necessary to move a child who is sensitized to specific animals to another classroom without such animals. For more information, go to:

Strategies for Addressing Asthma Within a Coordinated School Health Program

<http://www.cdc.gov/HealthyYouth/asthma/strategies.htm>

Managing Asthma: A Guide for Schools

http://www.nhlbi.nih.gov/health/prof/lung/asthma/asth_sch.htm

IAQ Tools for Schools IPM Checklist

<http://www.epa.gov/iaq/schools/pdfs/kit/checklists/ipmcklstbkgd.pdf>

You may also wish to read more on this topic in the chapter entitled “Animal Safety” in Frumkin H, Geller R, Rubin IL, and Nodvin J, Safe and Healthy School Environments (Oxford University Press, 2006).

Q: Can you explain more about chemical irritants related to strong odors?

A: There are many things that can trigger a person's asthma, and each person has different triggers. Fumes from chemicals (in such things as scented markers, paint, room fresheners, cleaners, etc.) can irritate the airways of people with asthma and cause them to have an episode.

Q: How can heat or cold trigger an asthma attack?

A: Cool, dry air often irritates the airways of people with asthma and thereby causes an asthma episode.

Q: Is a dilute bleach solution for cleaning desks an irritant?

A: It can be. Some people with asthma are more sensitive to some irritants. Bleach is irritating to many people when not properly diluted.

Q: How far from the building/pick up area should cars be if idling?

A: Ideally, vehicles should not idle outside a building at all. However, it is most important to keep idling vehicles away from HVAC air intakes. Speak with a school's maintenance director about this if you don't know where the HVAC air intakes are located.

For more information on anti-idling policies for school districts, go to:

http://www.epa.gov/iaq/schools/tfs/coord_append_b.html#Sample Anti-Idling Policy

Q: How common is the smell of "fresh cut grass" in causing symptoms? What is it in "fresh cut grass smell" that causes the problem?

A: Pollen and other outdoor pollutants can be in fresh cut grass, which can trigger an asthma episode in a sensitive individual.

Q: How seriously do rodent or insect pests contribute to asthma problems?

A: Pests can be a serious problem. The dander and saliva (found on dead skin cells, fur, or in dust) from rodents and pests often triggers asthma exacerbations.

Q: In regards to environmental management in schools...I think it is important to mention that cockroach feces is also a trigger for asthma.

A: True, cockroach droppings can trigger asthma.

Q: I am surprised that secondhand and thirdhand smoke is not listed. While we may be talking about schools, I am sure that some of the teachers smoke and what leaches off of their clothes might be a problem.

A: Yes, second- and third-hand smoke are both asthma triggers. Research on third-hand smoke is still new.

Q: I recently had my maintenance staff spackle a wall in preparation for painting. Although an information sheet said there were no inhalation risks, except for dust, which there wasn't, I had a teacher claim that it triggered an asthma attack and she was out for weeks. Does that make sense?

A: Spackle dust and paint can be irritants to someone with asthma. Spackle contains certain solvents which evaporate as the spackle dries. These chemicals may be enough to trigger a specific person's asthma.

Q: Not only inhaling food that would trigger their asthma, wouldn't it also cause some kind of infection within the long-run, for example slight pneumonia or something similar?

A: Aspirations can, but don't always, cause pneumonia.

Q: Are there different environmental triggers present based on whether the school is in a rural or urban setting? If so, which are more common for each setting?

A: Rural schools may have more dust, pollen and pesticides. Urban schools may have more problems with air pollution. However, most environmental triggers — in rural, urban and suburban areas — are the same.

Families, Parents and Caregivers

Q: I am surprised to see that the Exacerbating Factors slide does not list Smoking Parents as an exacerbating factor. Children with asthma frequently are in the company of parents who smoke in the home and in the car, including during the trip to school. Many parents refuse to stop smoking in the home and in the car.

A: Yes, parental smoking is another trigger that can cause an asthma episode in a sensitive individual. For more information on helping parents to quit or not smoke around their children, go to: <http://www.epa.gov/smokefree/>.

Q: As the school nurse with 7,000 students, how can I change the fact that children come from poor homes?

A: You cannot change the fact that some students come from poor homes, but you can refer families to resources to help improve their home situation. A local asthma coalition or association, local home inspectors and home environmental assessments with educational and medical-legal partnerships are examples of several important resources for families. Many indigent children have opportunities to receive subsidized medical care and medications to assist in controlling their asthma.

Diagnosis/Health

Q: I have doctors tell me and tell parents that the child's asthma is 'gone' since he/she has not had to use the inhaler recently. What do you suggest in speaking with the parents and physicians regarding this?

A: It depends upon the age of the child and the asymptomatic time period. For very young children with asthma, many will not develop chronic asthma. For school-age children with

asthma, most will continue to have irritable airways. Some may have good control for many months without any medication. Students with any asthma signs or symptoms in the past year are usually considered to have current asthma.

Q: I have a student with cystic fibrosis. Do you have any comments on this illness and how it can affect asthma treatment or management?

A: Cystic fibrosis (CF) is a disease affecting the lungs and the digestive system. Children with CF are at increased risk of respiratory infections. Children with CF may also have concomitant asthma. Children with CF therefore may have intermittent respiratory distress on the basis of their cystic fibrosis, on the basis of asthma, or on a combination of factors. The school needs to work with the child's physician(s) to establish an appropriate asthma action plan and overall plan of care while the child is at school.

Q: How do you diagnose a patient under 1 yrs old with asthma?

A: It is difficult and complex to diagnose a patient under the age of one with asthma. Speak to your physician.

Q: Is the respiration rate of a 3rd grader any more based on body weight than an 8th grade student?

A: Standard respiratory rates are based on age, not on weight. Elementary school-age (6 to 12 years) should have a respiration rate between 16-30. Adolescents (12 to 18 years) should have a respiration rate between 12-20.

Q: Is there any connection with asthma and being incubated as a newborn?

A: Infants who required mechanical ventilation as a newborn are at increased risk of asthma. Infants who required supplemental heat as a newborn but did not require mechanical ventilation are generally not at increased risk of asthma.

Q: Once the obesity is reduced or back to a normal weight does the asthma go away or improve?

A: When an obese person loses weight, asthma control improves but the disease remains.

Q: Are there randomized double blind data available to suggest that the frequency of kindergarten students who are exposed to greater amounts of particulate in schools are at a greater incidence of asthma?

A: Particulate matter in the air is associated with increased asthma symptoms and episodes among all people with asthma. We are not aware of any studies targeting kindergarten students.

Asthma incidence is the number of new cases in a given time period (often a year). It is not ethical or feasible to control and keep blind the amount of particulate matter in a school over an extended period of time.

Environmental Management

Q: In a hot humid climate the allocation of a recommended ventilation rate of 20 CFM per student seems likely to create high humidity conditions. How should this conflict be handled?

A: Whether your district is located in a humid climate or not, all school districts should ensure that their existing Heating, Ventilation and Air Conditioning (HVAC) equipment is operating properly – as it was designed for the space, including dehumidification capacity. Check your owner’s manual. School districts should strive to maintain indoor humidity levels between 30 percent and 60 percent to ensure comfort and reduce problems with mold and bacteria. Additionally the *Indoor Air Quality Tools for Schools* program encourages districts to maintain minimum outdoor air ventilation rates consistent with the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) standard 62.1, which for classrooms is about 15 cubic feet per minute (CFM) or outdoor air per person. Since your district is providing a higher CFM rate than recommended you are introducing more humidity into the space. Check to see if your system’s dehumidification capacity can handle the added humidity.

Q: What MERV rating does the doctor suggest the filters should be?

A: MERV, or Minimum Efficiency Reporting Value, is a number from 1-20 that is relative to an air filter’s efficiency. The higher the MERV, the more efficient the air filter is at removing particles. A higher MERV creates more resistance to airflow because the filter media becomes denser as efficiency increases. For the cleanest air, a user should select the highest MERV filter that their unit is capable of forcing air through based on the limit of the unit’s fan power.

Resources

Q: How can our local PEHSU help us with reaching our disadvantaged children in schools with managing asthma?

A: It varies. Call them and ask! Locate a PEHSU in your area:
<http://www.aoec.org/pehsu/findhelp.html>.

Q: How can insurance companies (resources) help?

A: Many insurance companies have chronic illness care coordinators. They can be especially helpful when asthma is difficult to control.