All Health Staff

Each day, you address issues that impact the health and well-being of students at your school. Increasingly, that means dealing with asthma. Asthma in children has increased significantly in both numbers and severity over the past several decades. It's the third leading cause of hospitalizations among children and the single most common chronic disease causing absence from school.[1]

Asthma is a chronic but manageable disease. The more you know about asthma and how to manage it, the more you can help ensure the immediate safety and the long-term health of students in your school. As a member of the health care staff, you play a vital role in helping your school become an asthma-friendly school and in creating a supportive educational environment where all students can learn and thrive.

This section may be helpful to anyone providing health services to students who have asthma. After you read this section, also read the subsection that pertains to your specific role:

- Licensed School Nurse (LSN, RN, PHN)
- Licensed Practical Nurse
- Health Assistant/Paraprofessional

"Children who have asthma can live healthy, active lives without symptoms."

Why Learning about Asthma is Important to All Health Staff

HEALTHY CHILDREN LEARN BETTER.

Poorly controlled asthma can affect a child's performance. It can disrupt sleep, the ability to concentrate, memorize, and, when not managed properly can prevent a student from participating in "normal" school activities. Children who miss school due to uncontrolled asthma not only miss classroom instruction, they also miss out on social interactions with other children, which can lead to fears of social isolation, rejection, and believing they are "different" from other children.

Health Services staff should understand that students with poorly controlled asthma may feel drowsy, tired or anxious about taking medications. They may also experience side effects from medications, and may be embarrassed when disruption to school activities occurs due to an asthma episode.

ASTHMA CAN BE CONTROLLED.

Asthma can usually be managed with the right medications and modifications to the home and/or school environment. Students with asthma should be able to live healthy, active lives without symptoms.

GOALS FOR STUDENTS WHO HAVE ASTHMA:

- Good asthma control (e.g., no asthma symptoms)
- Optimal school performance and attendance
- Normal levels of physical activity
- Asthma triggers minimized/avoided
- Acceptance by classmates
- Accessible Asthma Action Plan
- Student and family's goals are met (e.g., student is able to play on the school basketball team without symptoms, or the family doesn't have to spend time making trips to the school, urgent care/emergency department or hospital for asthma episodes or uncontrolled asthma)

These goals are achieved through good communication among parents/guardians, the child's medical provider, the school's nurse/health staff, and other school personnel.

What All Health Staff Need to Know

What is Asthma?

ANATOMY AND PHYSIOLOGY

Asthma is a chronic disease with three key features: swelling of the airways (inflammation), mucous production, and tightening of the muscles around the airways (bronchoconstriction) resulting in increased irritability of the airways. With well-controlled asthma or in healthy lungs during normal breathing, air flows freely in and out of the lungs. With uncontrolled asthma or during an asthma episode, the linings of the airways (bronchioles) swell, mucus clogs the airways, and muscles around the airways tighten making breathing difficult. The airways become overly responsive (twitchy) to triggers.

Three key features:
Swelling of the airways (inflammation)

Mucous production

Tightening of the muscles around the airways (bronchoconstriction)

SYMPTOMS OF ASTHMA

Asthma symptoms can vary greatly from hour-to-hour and day-to-day. Symptoms are often worse at night and in the early morning hours. The severity of asthma varies from child to child and the severity may worsen or improve depending on the child's asthma control and amount of exposure to triggers or allergens. Some children only have occasional symptoms (e.g., after exposure to an asthma trigger or after strenuous exercise), while others have symptoms that interfere with their daily life, which includes the ability to concentrate and participate in school.

Common Symptoms Are:

- **Coughing**
- **Wheezing (high pitched sound heard on exhalation)**
- **Shortness of breath**
- **Breathlessness**
- **Chest pain**
- **Tightness in the chest**
- **Difficulty exercising**

During an asthma episode, a child may feel he/she can't inhale enough air, but actually his /her lungs are having trouble exhaling. The wheezing or whistling sound that is heard results from air moving through swollen, narrowed, mucus-plugged airways. Wheezing is comprised of high-pitched noises, usually heard with a stethoscope when a child breathes out, and sometimes when breathing in. At times wheezing can be heard by the naked ear. Coughing is the body's natural response to try to rid the lungs of mucus and open the airways. The outcome is a student with an "asthma episode" or a flare-up of symptoms.

THINGS THAT MAKE ASTHMA WORSE (ASTHMA TRIGGERS)

Children with asthma may be allergic or sensitive to allergens, irritants, and viral or bacterial infections. Each student with asthma may react to a different set of factors.

Common allergens:

- Dust mites
- Dander from furry or feathery animals
- Mold (*e.g., from moisture from a leaky roof or plumbing, leaky/moist foundations/walls, wet sink/bathroom areas, and outdoor molds such as Alternaria which is common in MN in the fall*)
- Seasonal pollens (*e.g., tree pollen [spring], grasses [summer], ragweed [fall]*)
- Cockroach droppings
- Mice/rat dander, urine, and/or droppings
- Some foods*
- Some medications (*e.g., aspirin*)

Common irritants:

- Cold air
- Chalk dust
- Tobacco smoke, secondhand smoke and smoke from burning wood and other substances
- Air pollution - both indoor and outdoor (*high ozone/high particulate matter*)
- Chemicals and strong smells (*cleaning supplies, perfumes, whiteboard markers, paint, pesticides, glues*)
- Gastroesophogeal reflux (*acid from the stomach that gets into the airways can be an irritant*)

"About 6-8% of children who have asthma have food allergies that can trigger asthma symptoms." [2]

Common infections:

- Viral upper respiratory infections
- Sinusitis

Other triggers:

- Strong emotions (*laughter, crying, stress, anxiety, anger*)
- Exercise

Exercise-Induced Asthma (EIA) and/or Exercise Induced Symptoms:

Exercise is a very common trigger for asthma. However, since exercise and participating in sports is part of healthy living, it is one trigger that should be managed and not avoided. Some students may experience symptoms only when they exercise or participate in very strenuous activity (true EIA). Other students experience symptoms that are brought on by exercise, but they also may have an underlying persistent asthma that is exacerbated by the exercise. Students with underlying persistent asthma require controller medications whereas students with true EIA frequently do not. Any child who develops asthma-like symptoms should be referred to the Health Office for evaluation and possible referral to a health care provider. Fortunately, with better medications, monitoring, and proper management, a child can participate in physical activity and sports and achieve his/her highest performance levels.

SYMPTOMS OF EIA AND/ OR EXERCISE INDUCED SYMPTOMS

Symptoms may include coughing, wheezing, chest tightness and shortness of breath. Coughing is the most common symptom of EIA and may be the only symptom a student has at that time. The symptoms of EIA may begin during exercise and can be worse 5 to 10 minutes after stopping exercise or during the normal “cooling down” period rather than during the actual exercise. Symptoms can range from mild to severe and often resolve in 20 to 30 minutes. Occasionally, some individuals will experience “late phase” symptoms four to twelve hours after stopping exercise. These late phase symptoms are frequently less severe and can take up to 24 hours to go away. This is an important fact to remember when students are participating in school competitions that are repeated throughout the day.

CAUSES OF EIA AND/OR EXERCISE INDUCED SYMPTOMS

When a student exercises, he/she breathes faster due to increased oxygen demands. During exercise, students usually inhale through the mouth, causing the air to be dryer and cooler than when breathing normally and through the nasal passages. These decreases in warmth and humidity are both causes of bronchospasm or “airway constriction.” Exercise that exposes students to cold air (e.g., skiing, skating, or hockey) are therefore more likely to cause symptoms than exercise involving warm and humid air such as swimming. Pollution levels, high pollen counts and exposure to other irritants such as smoke and strong fumes can also make EIA symptoms worse. In addition, a recent cold or asthma episode can cause more difficulty in exercising.

HOW TO PREVENT EIA AND/OR EXERCISE INDUCED SYMPTOMS:

- Check the student's Asthma Action Plan or medical care plan to see if exercise is an issue. If so, the student should use his/her reliever medication 15-30 minutes prior to strenuous activity. A child who does not carry an inhaler will require medication administration from the school health office.
- Warm up and cool down activities appropriate for any exercise will also help students with asthma. Give them time enough to slowly get their respiratory system warmed up.
- Permit less strenuous activities if the student has recently been ill or is having any sort of respiratory difficulty.
- If a student is unable to fully participate, help him/her find ways to participate in a less strenuous manner such as being the scorekeeper, equipment handler, etc. until ready to participate fully.
- Check ozone/air quality levels for outdoor activity prior to exercise outside at: http://aqi.pca.state.mn.us/hourly/ . High pollen or high ozone levels can make EIA worse in some students who have asthma.
- Never encourage a student or athlete with asthma to "tough it out" and don't allow other students to tease or encourage another who is wheezing to continue the activity.
- See Coaches Section for more complete information.

National Asthma Education and Prevention Program Guidelines (NAEPP)

NATIONAL INSTITUTE OF HEALTH (NIH) AND NATIONAL HEART, LUNG AND BLOOD INSTITUTE (NHLBI) GUIDELINES

These national guidelines were created in 1991 and updated in 1997 and 2002. They guide the care provided to people who have asthma and promote best practices. Anyone providing care to individuals who have asthma should be following these national guidelines. The full set of guidelines can be found at: www.nhlbi.nih.gov/guidelines/asthma/index.htm

The guidelines define asthma severity levels and the appropriate care, medications and/or treatment recommended for each specific severity level.

THERE ARE FOUR ASTHMA SEVERITY LEVELS:

Step 1: Mild Intermittent

Step 2: Mild Persistent

Step 3: Moderate Persistent

Step 4: Severe Persistent

Severity Classification	Days /w Symptoms	Nights /w Symptoms	Peak Expiratory Flow PEF Rate Variability
Severe Persistent (Step 4)	Continual	Frequent	≥ 60% > 30%
Moderate Persistent (Step 3)	Daily	> 1 /week	> 60% - < 80% > 30%
Mild Persistent (Step 2)	> 2 / week but < 1/ day	> 2 /month	≥ 80% 20-30%
Mild Intermittent (Step 1)	≤ 2/ week	≤ 2/month	≥ 80% <20%

From: National Heart, Lung, and Blood Institute; Expert Panel Report No.2: Guidelines for the Diagnosis and Management of Asthma 2002

If a student is in the Health Office more than 2 times a week, or tells you he/she has nighttime symptoms more than twice a month, encourage the student to see his/her Health Care Provider as soon as possible.

Asthma Medication Review

Asthma is treated based on how severe the child's symptoms are at any given time. Typically, there are two types of medications used to treat asthma: quick relief (reliever) or rescue and controller or preventive meds.

The most common asthma medications most schools will come in contact with are the quick-relief or reliever medications. However, some students may need to take their daily controller medication at school, especially if they have difficulty remembering to take it at home.

LONG-TERM CONTROLLER OR "CONTROLLER" OR "PREVENTIVE" MEDICATIONS

Such as inhaled corticosteroids, leukotriene receptor antagonists, or long acting bronchodilators help prevent symptoms and episodes from developing in the first place. These controller medications typically reduce/prevent inflammation from occurring. One type of controller also relaxes the muscles surrounding the bronchioles (airways) over a long period of time.

A note about inhaled corticosteroids: Inhaled corticosteroids are not the same as anabolic steroids used by athletes to build muscles, and they do not have the same side effects. Inhaled corticosteroids also are delivered right to the lungs where they are most effective. Inhaled corticosteroids are the most consistently effective controller medications available.

Typical "controller" medications are: *Advair®, AeroBid®, Azmacort®, Beclovent®, Flovent®, Pulmicort Turbuhaler®, Pulmicort Respules®, Vanceril®, Flovent Rotadisc®, Accolate®, Singulair®, Zyflo®, Serevent®, Foradil®, Intal®* and *Tilade®*.

Oral corticosteroids (in pill or liquid form) are taken when an episode becomes severe, or when a child's asthma requires very intensive treatment.

QUICK-RELIEF ("RELIEVER" OR "RESCUE") MEDICATIONS

These medications are taken when asthma symptoms flare up or a child is experiencing an "asthma episode." These medications work fast to relieve symptoms when they occur, and can also be used before exercise to help prevent exercise-induced symptoms. This is the inhaled medication you should most frequently see a student use when symptoms are flaring up, or in the case of exercise-induced or exercise triggered asthma, as a pre-exercise treatment, 15-30 minutes prior to strenuous physical activity. They help relax the muscles surrounding the airways usually within 10-15 minutes after using the inhaler.

Typical brand names of these medications are: *Albuterol (Proventil®, Ventolin®, or generic albuterol), Maxair®, Combivent®*, and *Alupent®*.

All medications have potential side effects. Some complaints related to reliever medications are: ***nervousness, jitteriness*** or ***increased heart rate***. If side effects are excessive or the student complains of not feeling well, promptly contact the student's parent/guardian and/or health care provider for evaluation and follow-up, and do not leave the child unattended.

See Resource section for additional medication information

Peak Flow Meters

The peak flow meter (PFM) is a hand-held measurement tool that measures the amount of air forcefully exhaled in 1 second. Peak flow readings measure large airway function for the most part, and small airways can be affected before the peak flow starts to show any decline. Every child's peak flow (PF) is different depending on his/her *personal best* or *predicted* peak flow reading.

A sub optimal or dropping peak flow level can indicate poorly controlled or worsening asthma.

Personal best peak flow readings are evaluated and determined by a medical provider when the student is healthy and doing well with his/her asthma. During this time, the student measures his/her peak flow reading every morning and afternoon for 2 weeks. The best reading during that time is considered their personal best peak flow reading and that reading is used to calculate the 80% cut-off for the green zone and the 50% cut-off for the red zone.

Predicted peak flow readings are based on studies on children at different heights. If the predicted peak flow does not seem to be accurate for a particular student (e.g., the student consistently blows higher than their predicted peak flow reading), the reading can be adjusted to the higher number. (see resource section for predicted peak flow height chart)

Note: Peak flow readings are effort-dependent — if the student doesn't blow hard or use his/her best effort and technique when blowing, the reading may not be accurate. For this reason, it is important to coach students on their technique and actively encourage a good effort. Have the student blow into the meter 3 times while standing. Take the best of the 3 readings as the reading that you record.

Many schools keep one stock peak flow meter in the health office for use by students who don't have their own peak flow meter for school. In this case, one-way plastic filtered mouthpieces can be used to create a sanitary way to practically check peak flow readings on students without a peak flow meter.

Asthma Action Plan

The Asthma Action Plan (AAP) is a personalized, written tool (different from an individualized care plan) that can help students and staff effectively manage an individual student's asthma. MDH has an interactive asthma action plan program available at www.asthmamn.org, which can be used to create individualized asthma action plans. Blank AAP's are also available on the MDH website at: http://www.health.state.mn.us/divs/hpcd/cdee/asthma/.

AAP's come in a number of formats. The most common includes the **green = go, yellow = caution** and **red = danger** zone format. Each zone has assessment measures and tailored instructions specific to that zone. Most students can benefit from using both symptoms and peak flow measurements to determine their current asthma zone. Use whichever indicator is more significant. For example, if a student is coughing, but blows a green zone peak flow reading, that student is still in the yellow zone, due to the presence of asthma symptoms. Once you/they determine what zone a student is in, follow the specific instructions for each zone regarding medications and when to seek medical care.

GREEN = GO
(*Feeling good, no symptoms, peak flow between 80-100%*)
Children whose asthma is well controlled should be in this zone all of the time. By following the instructions in the green zone, students can often avoid slipping into the yellow or red zones. This zone also includes instructions for the controller medication/s the child may take every day (if he/she requires a daily controller medication), and it includes instructions for giving/taking medications for children with exercise-induced symptoms prior to strenuous activity.

YELLOW = CAUTION
(Having some asthma symptoms, peak flow is 50-80%)
A student may slip down into this zone if he/she forgets to take controller medication (if prescribed) or if he/she is exposed to asthma triggers. This section provides specific instructions for medication administration when the child is starting to have asthma symptoms. If action is taken when in the yellow zone, the student can often prevent dropping further into the more dangerous red zone.

RED = DANGER
(*Severe symptoms, peak flow less than 50%*)
A student in this zone signifies an emergency. He/she needs immediate medical attention. Follow the instructions regarding emergency treatment and medication administration. If the student is struggling to breathe, give red zone medication and call 911 if there is no significant relief.

All students who have asthma are advised to have a personalized AAP, with a special emphasis for students with persistent asthma (mild, moderate or severe). Some Asthma Action Plans include imbedded consents within the body of the plan that promote the sharing of information (and consent to administer medication at school) between the school and health care provider.

Be sure to consult your school district policy and guidelines about using an AAP with these specialized consents.

What All Health Staff Can Do

TAKE ASTHMA SERIOUSLY:

Asthma can be a fatal disease if steps are not taken to control it. You can make a huge impact in the lives of your students with asthma. You also may save one or more lives and improve countless other lives from your efforts.

OUR JOB AS HEALTH STAFF IS TO HELP STUDENTS ACHIEVE OPTIMAL CONTROL OF THEIR ASTHMA.

The definition of asthma control includes the following:

- No coughing
- No shortness of breath/rapid breathing, wheezing, or chest-tightness
- No waking up at night because of asthma symptoms
- Normal activities, including play, sports and exercise
- No episodes of asthma that require a medical provider, emergency room or urgent care visit
- No absences from school or activities
- Normal (or near normal) lung function

(Excerpted from: Pediatric Asthma: Promoting Best Practice — Guide for Managing Asthma in Children (AAAAI, 1999)

Provide Prompt Care for Students Who Are Having Breathing Difficulty

Symptoms of breathing trouble:

- Unusually slow or fast breathing
- Breathes unusually deep or shallow
- Difficulty breathing or talking due to shortness of breath
- The child can't walk, talk or move well (*may be gasping for breath*)
- Gasping for breath
- Wheezing, gurgling, high-pitched noises
- Skin unusually moist
- Skin flushed, pale, ashen/ bluish looking
- Child feels short of breath
- Child feels dizzy or light-headed
- Chest pain or tingling in hands or feet
- Child feels apprehensive or fearful
- Increased or uncontrolled coughing
- Speaking in clipped or short bursts of speech
- Possibly restlessness or upset stomach

Care of asthma and breathing trouble:

- Remain calm and reassure the child.
- Have the child sit up and breathe evenly, breathing in through nose, and breathing out with pursed lips.
- If an asthma episode is suspected, give the child a glass of room temperature water to sip.
- Elevate the child's arms to shoulder level and provide support for the arms (*desk or back of chair*).
- Notify the school nurse.
- Give medication as ordered per AAP or emergency care plan or have the student self-administer if he/she carries medication.
- Contact parent/guardian.

Reasons to call 911:

- Blue lip area or blue nail beds -or-
- Difficulty talking, walking or drinking -or-
- "Quick relief" or "reliever" medication (*inhaled reliever such as albuterol*) is ineffective, unavailable, or used too recently to repeat -or-
- Neck, throat, or chest retractions (*sucking in of the skin between ribs or at base of the neck*) -or-
- Nasal flaring when inhaling -or-
- Obvious distress -or-
- Altered level of consciousness/confusion -or-
- Rapidly deteriorating condition.

"A child may have only one or a combination of the above but each of these symptoms is evidence of a real asthma crisis developing!"

Reducing Triggers in the School

ANIMALS IN THE SCHOOL

Some school districts may have policies or guidelines regarding animals living in or visiting schools. All warm-blooded animals can cause allergic reactions. Animal allergen is in dander, saliva, and urine. Allergen particles become airborne and accumulate in carpets, upholstery, fabrics and on books, desks, and walls. Sensitive airways are affected by the odors from urine, cedar chips, room deodorizers, disinfectant sprays, and the flea powders or insecticides used to control fleas and ticks. Once furry animals are introduced into a school, removal does not immediately eliminate the exposure problem. A central ventilating system can contaminate the entire school. Even after a thorough cleaning, the allergens may persist for months or longer. Carpets in the room become a trap for animal dander and vacuuming just stirs up the particles.

It is important to know what your school district policy is regarding animals in the schoolroom and to take into consideration children in the classroom who may have asthma or allergies.

INDOOR AIR QUALITY

Indoor air quality or "IAQ" refers both to the content of the air circulated throughout the school and also to the potential allergens and triggers that float around. Perfume and cologne are potential irritants, and for some children, strong scents (chemicals, cleaning supplies, perfumes, paste, whiteboard markers, etc.) are triggers that can aggravate an asthma episode. When possible, avoid using items that have potential odor or scent producing irritants. Mold is a problem and may be difficult to eradicate once in place. Moist, dark environments promote mold (often called mildew) growth, and areas found to contain mold should be referred to the school custodian for remediation.

MONITORING OUTDOOR AIR QUALITY/OZONE/ POLLUTION

Air Quality Conditions

Students with asthma are more sensitive to air quality, and poor air quality may be a trigger for an asthma episode. The Air Quality Index (AQI) is a tool that can help you understand whether your outdoor air quality is good or bad on any particular day.

The AQI ranges from 0 to 500 and in Minnesota is based on measured or estimated levels of five air pollutants: ground-level ozone (smog), fine particulate matter, carbon monoxide, nitrogen dioxide and sulfur dioxide. The Minnesota Pollution Control Agency (MPCA) reports information about air quality on a daily basis on the AQI web site and AQI Information Line (651-297-1630). When the AQI exceeds or is forecast to exceed a value of 100, the MPCA issues air pollution health alerts.

Health Staff should be aware that athletes or children with asthma might experience problems when the AQI exceeds 100. You may sign up to receive e-mail notification when air quality alerts are issued by the MPCA and check the air quality index daily for Minnesota by going to: http://aqi.pca.state.mn.us/hourly/.

Create a Healthy Environment in the Health Office & Schoo

There are many simple steps you can take to make sure your school is asthma-friendly. The Health Office, especially, should be a place where students with asthma can be comfortable and safe. Here are some suggestions for ensuring a healthy environment:

- Make sure heating and cooling ducts are open and free from clutter.
- Work with the Custodian/Engineer to ensure good indoor air quality and that an integrated pest management program is in place.
- Don't use/wear strong smelling hair products, perfume, or cologne when in the school building as they may trigger students' asthma.
- Be cautious with chemical cleaning supplies. The strong odors from some products can trigger an asthma episode. It is best to avoid using any cleaning products when children with asthma are present. When you do use cleaning solutions, use environmentally friendly solutions.
- Use natural cleaning agents when appropriate: White or apple cider vinegar removes mineral deposits, and crayon marks. Baking soda is a good general cleaner that can also be used as a deodorizer. Use mild, unscented bar soap for hand washing and encourage children to wash hands frequently to avoid speaking viral/cold germs.
- Contact the Custodian/Engineer when mold remediation is needed. Soap and water is generally the best cleaning solution for mold.
- Take care when eating in the health office, since pests such as cockroaches, mice, and rats are attracted to food and moisture.

Delivering Healthcare in Schools

Health care in each school district is guided by state statute and guidelines, number of students, student needs, locality and financial resources available. The practice models utilized, depend on the level of professional health licensure (e.g.,/PHN/RN/LPN) providing care or available in the district and/or school. The following suggested models of delivering asthma care in schools depend on the type and amount of health personnel staffing in your school or district. Select the model that most closely matches your school or district and, depending on amount of staffing, start with the priority items and expand from there. For example: A school with a full time Licensed School Nurse (LSN) can carry out these components in a much more complete way than a school with a LSN only one day a week, and certainly in a much different manner than a school which has no licensed health staff at all.

Healthcare Delivery Models in Schools:

- LSN/PHN and Health Assistant practice model.
- LSN/PHN and non-health staff practice model.
- No LSN/RN professional practice model – see Role of Health Assistant/LPN without an LSN/RN in the Health Assistant/Paraprofessional or LPN sections.
- No health staff in school — see Secretary/Administrative Assistant section.

(*Also see sample Components documents in Resource Section*)

Please review the section and model that most closely reflects your licensure or role within the School Health office (e.g., LSN/PHN/RN or LPN or Health Assistant/ Paraprofessional)

Communication and Teamwork

School health staff are essential participants in the control and management of asthma. But they can't do it alone. To be most effective, the health staff must work closely with students, parents/guardians, health care providers and other school staff. Good communication is vital when it comes to asthma education, identification and management.

WITH STUDENTS

Any successful asthma care model should have the student as the central focus point. Working in partnership with students to plan, set goals and implement their asthma management plans encourages their participation and lets them know they have the ability to "manage" their asthma symptoms effectively. Supporting students while giving them the educational instruction to participate means being specific regarding what their responsibilities are.

For example, a student should:

- ✔ Complete and return all health related paperwork, questionnaires, medication updates etc. to health staff.
- ✔ Follow district policies if they self-carry their medications and check in with Health staff at regular, predetermined intervals for evaluation and updates of their asthma status.
- ✔ Report increasing (or decreasing) symptoms or changes in their asthma to health staff.
- ✔ Report changes in peak flow readings to the health staff.
- ✔ Understand how their AAP and/or medication care plan are used and when to request assistance.
- ✔ Be responsible for carrying and using their asthma medications at the proper time (e.g., pre-medicating before sports activities), self administering them correctly and not sharing medications with others.

HEALTH STAFF CAN BEST COMMUNICATE WITH STUDENTS BY:

- ✔ Asking what the students' goals are or what motivates them to be successful. For example, a child who gets short of breath while playing basketball may be more motivated to take his/her medication if he/she realizes he/she can be symptom-free while on the basketball court.
- ✔ Giving positive reinforcement and encouragement to a child who uses proper MDI/ medication administration technique. This demonstrates to the child that he/she is doing it "right" and promotes active participation by the child in managing the asthma.
- ✔ Using terminology and wording that is "kid" friendly and age appropriate. For instance: When referring to inhaled corticosteroids, use the term "controller medications" instead. Or, use "quick-relief inhaler" or "inhaler that helps you breathe easier" instead of "bronchodilator"

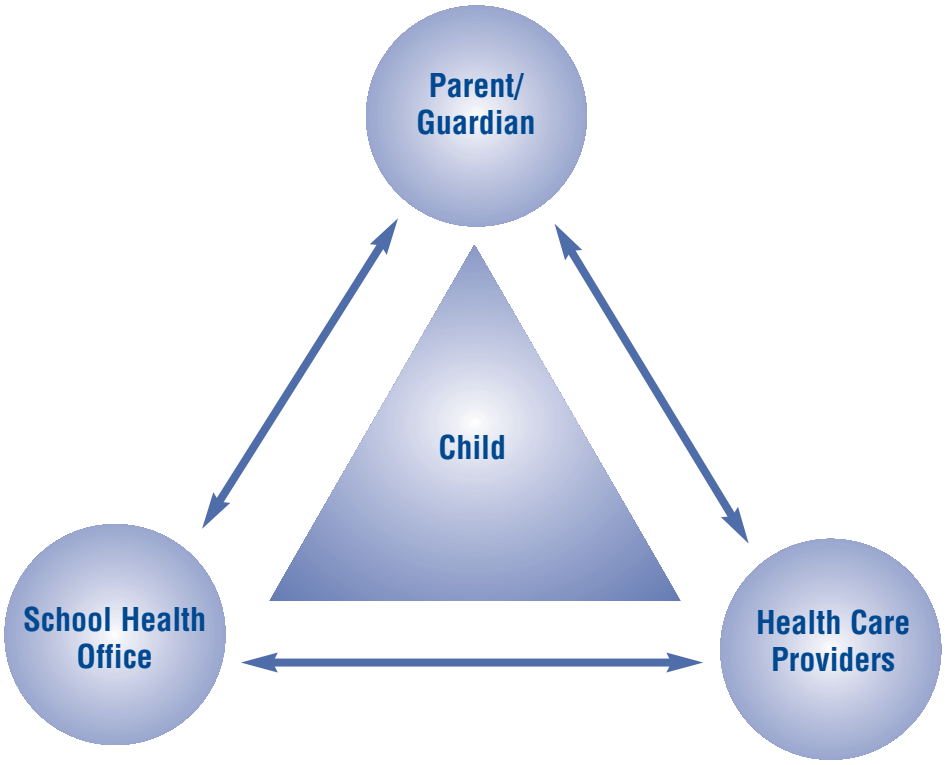
While this is by no means an all-inclusive list of communication techniques and responsibilities, health staff understand how important it is to help the child actively participate in his/her own asthma management plan.

WITH FAMILIES

Since a child who has asthma affects the entire family, it is important to understand what a family experiences when dealing with a chronic health condition such as asthma. Families often do not fully understand asthma and how to manage it properly. Staff can assist families by providing educational resources and materials about asthma and organizing training workshops on asthma for the school community. Health staffs have the opportunity to educate families regarding asthma triggers in the home and can help them create a healthy home environment. Since children who have asthma are extremely sensitive to their environment, conducting a *home assessment* to identify triggers is essential. Contact your local home care agency or consult with your health care provider for resources available in your area. The Environmental Protection Agency (EPA) website provides good information on asthma triggers in the home and action steps a homeowner may take to eliminate these triggers. EPA website: http://www.epa.gov/asthma/triggers/index.html. Or the University of Wisconsin Extension Service offers "*Help Yourself to a Healthy Home: Protect Your Children's Health"* at: http://www.uwex.edu/healthyhome/book.html.

The Sustainable Resource Center does specific testing for some household pollutants. Contact: 612-870-4255 or go to their web page: http://www.src-mn.org/SRC_HOME_Absolute.htm. There are companies available who will perform a home indoor *air quality* assessment. A full listing and further information is available from MDH Environmental Health section by calling: 612- 215-0700 or via Internet at http://www.health.state.mn.us/divs/eh/air/index.htm.

Children may experience severe health problems, including asthma, decreased lung function, and an increased incidence of respiratory (upper and lower) track infections due to exposure to second hand smoke. Therefore, it is important to take all necessary steps to ensure a smoke-free home and school environment. If family members wish to quit smoking, there is support for them through the American Lung Association of Minnesota: http://www.alamn.org/smoke/smoking.asp. One free Minnesota featured smoking cessation program is QUITPLAN, 1-888-354-PLAN or via Internet at: www.quitplan.com. Some health plans may provide smoking cessation programs and supplemental aides so refer families to their health plan for benefit information.



The asthma action plan (AAP) is a communication tool that can create the opportunity for collaboration among school staff, the parent/guardians and the health care provider. Encourage parents/guardians to participate in the asthma management process by specifically requesting they provide AAP's or written medication care plans, medication supplies that remain at school (and that are labeled properly), and all required paperwork per district policies.

Notify parents/guardians when a child's asthma symptoms are flaring up or when health staff have any related concerns such as when the medication supply is diminished or if the child is not receiving or taking his/her medication (controller) on a regular basis. Establishing an open, two-way line of communication with families promotes consistent and current information and will lead to successful asthma management for the child who has asthma. (Excerpts from "Managing asthma in Connecticut schools" 2003)

WITH HEALTH CARE PROVIDERS

The triangle of teamwork and communication among the school, health care provider and parent/guardian, with the child as the focus is crucial to successful asthma management. School health staff should consider this an integral part of their role. Many times school health staff may be the first to recognize symptoms that are consistent with asthma. Evaluation and proper follow-up with referral to a health care provider opens the door toward establishing a collaborative relationship between school health staff, the health care provider and the parent/guardian. School health staff must obtain parental/guardian permission (release of information consents) prior to contacting and communicating with a student's health care provider directly. This step in the communication process is crucial.

The LSN/PHN/RN is the person responsible for establishing this network and other Health staff can support this relationship by providing the LSN/PHN/RN with clear and concise observations. Information that is provided in writing is much easier to respond to and less likely to be misinterpreted. For consistency and accuracy, school health staff should use district-approved forms when documenting information.

The health care provider's responsibility is to communicate with the School health office by:

- ✔ Providing written, up-to-date Asthma Action Plans (AAP's). Note that schools/districts typically require a new or updated AAP every school year.
- ✔ Performing student self-carry assessments and documenting his/her permission for that student to self-administer/carry his/her asthma medications.
- ✔ Communicating special student needs: i.e. if a student requires further education or support when administering medication or checking peak flow readings, or by clarifying specialized care plan instructions.
- ✔ Providing sufficient prescriptions so a student may have proper medications available while at school: i.e. a rescue inhaler and holding chamber/spacer should be available at school and at home for all students with asthma.
- ✔ Promptly completing and returning assessments and paperwork provided by school health staff that comply with district policy and guidelines.
- ✔ Contacting and discussing (with parental/guardian permission) the child's asthma management plan with appropriate school health staff.
- ✔ Obtaining parent/guardian signatures on consent to release/share information forms between the clinic and school since the parent is often present at the clinic with the student, whereas they are often not present at the school to give that consent.

School health staff responsibilities when providing information to health care providers vary greatly depending on school district policy and guidelines, as well as professional licensure. Check the individual role models for clarification. Overall, health staff can assist the asthma management process by providing information in a timely and accurate manner and by using the parent/guardian as an informational conduit to the health care provider. Always include the parent/guardian in the communication triangle so they may participate and understand how well (or poorly) their child's asthma is under control.

WITH OTHER SCHOOL STAFF

Health staff can copy an entire discipline section of this manual to provide basic asthma education and appropriate actions to each staff member.

By partnering with other school staff, and increasing asthma awareness throughout the school, students who have asthma are more likely to:

- ✔ Receive better support and acceptance by their peers
- ✔ Recognize emerging asthma symptoms earlier
- ✔ Have asthma episodes treated promptly and appropriately
- ✔ Feel more comfortable verbalizing their symptoms and concerns
- ✔ Feel less isolated or "different" from the other children
- ✔ Participate in all school related activities, including sports

All school staff, including coaches, should be provided information and training on how to recognize asthma symptoms and how to provide immediate "asthma first aid." The CD provided with this manual contains printable first aid posters, and internet links to web sites that offer ordering information for displayable asthma posters. If school policies allow, strategically place first aid for asthma posters in the cafeteria, schoolroom, gym and other areas where other school staff tend to spend significant time. Training PowerPoint® presentations and other suggested programs are listed at the back of this manual. Each staff section in this manual has first aid and educational information that is appropriate for each discipline.

Relevant Legislation

There are legal requirements, statutes and guidelines that regulate schools working with not only children with asthma but with children with special needs in general. The following are simplified summaries of current statutes.

See the appendix to read full statutes/laws.

FEDERAL LAWS (IDEA 1997) AND SECTION 504 OF THE REHABILITATION ACT OF 1973

These mandates require that schools promote the health, development and achievement of students with asthma when the disease interferes with their learning, and they are required to remove "disability barriers" that impede health, participation and achievement. The law requires schools and parents to work together as partners to develop and implement health plans to protect the welfare of the child.

FAMILY EDUCATION RIGHTS AND PRIVACY ACT (FERPA)

Generally prohibits schools from disclosing personally identifiable information in a student's education record, unless the school obtains the consent of the student's parent or the eligible student (a student who is 18 years old or older or who attends an institution of postsecondary education). FERPA does allow schools to disclose this information, without obtaining consent, to school officials, including teachers, who have legitimate educational interests in the information, including the educational interests of the child. Schools that do this must include in their annual notification to parents and eligible students the criteria for determining who constitutes a school official and what constitutes a legitimate educational interest. Additionally, under FERPA, schools may not prevent the parents of students, or eligible students themselves, from inspecting and reviewing the student's education records.

MINNESOTA INHALER LAW OVERVIEW

Minnesota Statutes, Section 121A.22

This law allows public elementary and secondary school students may possess and use inhalers prescribed for asthma or reactive airway disease. The following provides an overview of the requirements that must be met before a student is given permission to carry asthma medication and self-medicate in school:

1. The parent has not requested that school personnel administer the student's asthma medication; *and*
2. The school district receives annual written authorization from the student's parent for the student to self-administer; *and*
3. The inhaler is properly labeled for that student; *and*
4. The school nurse or other appropriate party assesses the student's knowledge and skills to safely possess and use his/her inhaler in a school setting and enters a plan to implement safe possession and use of the inhaler into the student's school health record; *or* for schools without a school nurse or nursing services, the student's parent or guardian submits written verification from the student's physician documenting that the physician has assessed the student's knowledge and skills to safely possess and use his/her inhaler in a school setting.

Summary, August 2001 ALAMN

SCHOOL BUS IDLING LAW

Minnesota Statutes, Section 123B.885

Diesel School bus idling:
"All operators of diesel school buses must minimize, to the extent practical, the idling of school bus engines and exposure of children to diesel exhaust fumes."
(*This pertains to bus drivers lining up buses waiting for the children to exit the school and load the buses. Unless, due to inclement weather (i.e. too cold or too hot), the buses engine should be shut off until all children are loaded onto the bus.)*

Parking:
"On and after July 1, 2003, diesel school buses must be parked and loaded at sufficient distance from school air-intake systems to avoid diesel fumes from being drawn into the systems, unless, in the judgment of the school board, alternative locations block traffic, impair student safety, or are not cost effective."
(*IAQ can suffer greatly when diesel fuel fumes are pulled into the building and circulated via the ventilation system. These fumes/odors are potent asthma triggers for some children.)*

PESTICIDE LAW

Minnesota Statutes, Section 121A.30
In the Parents Right To Know Act of 2000. Public and non-public K-12 schools that plan to apply pesticides specified in the law are required to provide notices to parents and employees. This law also requires the Minnesota Department of Health (MDH) to develop and make available model notices for schools to use, if they choose to do so.

IAQ PLAN

Minnesota Statutes, Section 123B.57

Public school districts are required to adopt plans to monitor and improve indoor air quality. The Minnesota Department of Education (MDE) has adopted the US EPA's Indoor Air Quality Tools for Schools program as the basis for an effective IAQ Management Plan.

An effective IAQ Management Plan is a comprehensive, district specific set of policies and procedures established to maintain and improve indoor air quality. To meet MDE requirements, the IAQ Management Plan must include:

- A certified (trained) IAQ Coordinator;
- An overall evaluation (walk through) performed on all school district buildings;
- The evaluation of specific building systems (classrooms, ventilation system, maintenance operations), using checklists or a comparable method;
- A written set of policies and schedules that describe ways to correct the identified IAQ problems, prevent future problems from arising, and respond to emergencies and concerns;
- School board approval.

The MDE Health and Safety financing program requires all school districts to implement an IAQ Management Plan.

The MDH web site has additional information about IAQ Management Plans including the status of specific districts and the IAQ Coordinator for each district. To learn more about IAQ Management Plans go to:
http://www.health.state.mn.us/divs/eh/indoorair/schools/index.html.
To find out about your district, go to:
http://www.health.state.mn.us/divs/eh/indoorair/schools/progress.htm.

Resources for School Health Staff

The following resources are located at the end of the manual. The policies, procedures, and forms listed are samples, which you can take and modify to use in your district. The electronic versions of most policies, procedures, and forms are provided on CD Rom and/or are downloadable off the MDH website for your convenience.

Policies, Procedures, Forms, Posters

- Parent Asthma/Breathing Questionnaire and sample instructions for use
- Student Asthma/Breathing Questionnaire and sample instructions for use
- Asthma/Breathing Problem Visit Notification and sample instructions for use
- Self-carry and administration agreement/consent and sample parent letter
- Asthma Action Plan
- Asthma Care Pathway
- Asthma First Aid 8.5x11 poster or pocket cards
- Asthma Control 8.5x11 poster
- Peak Flow Instructions 8.5x11 poster
- Predicted Peak Flow Height chart
- Metered Dose Inhaler (aerosol) with Spacer/Chamber Instructions 8.5x11 poster
- Dry Powdered Inhaler Instructions 8.5x11 poster

Curriculum, Programs, Games

- **Asthma Education: An Integrated Approach. Ideas for elementary classrooms**
  MDH Health Library
  (Created by MDH section of Children with Special Health Care Needs)
  Email Contact: library@health.state.mn.us (612) 676-5000
  http://www.health.state.mn.us/library/library.htm
- **Active with Asthma** Curriculum for high school students (or middle school students) developed by the Healthy Learners Asthma Initiative / Minneapolis Public Schools
  http://www.healthylearners.org/
- **Asthma Busters** – An online club for kids ages 7 to 14 years old who have asthma and love excitement and learning new things. Earn asthma bucks that qualify you for cool prizes!
  www.asthmabusters.org
- **Quest for the Code** asthma educational CD-Rom game and workbook available free from www.starbright.org.
- **Open Airways for Schools** – From American Lung Association.
  Teaches students steps to take in order to prevent an asthma episode and to better manage their asthma with the assistance of parents, teachers, school nurses, and physicians. . The interactive approach utilizes group decision, stories, games, and role-play to promote children's active involvement in the learning process. http://www.alamn.org/prof/Educators.asp
- **Power Breathing Program** – From Asthma and Allergy Foundation of America)
  Provides a basic understanding of asthma and empowers and motivates teens to take control of their asthma on a personal level. For teenagers. www.aafa.org
- **Asthma Challenge** – Also from Asthma and Allergy Foundation of America This is an interactive board game designed to teach the basics of asthma in a group setting.
  www.aafa.org (teens)

See the Resources Section at the END of this manual for a variety of asthma related web sites or other resources

Citations

[1] "Asthma in Children Fact Sheet," American Lung Association, June 17, 2003.
www.lungusa.org/asthma/ascpedfac99.html

[2] "Update on Food Allergies and Asthma" by Hugh A Sampson, M.D. Food Allergy News, Volume 6, No. 1, October–November 1996.