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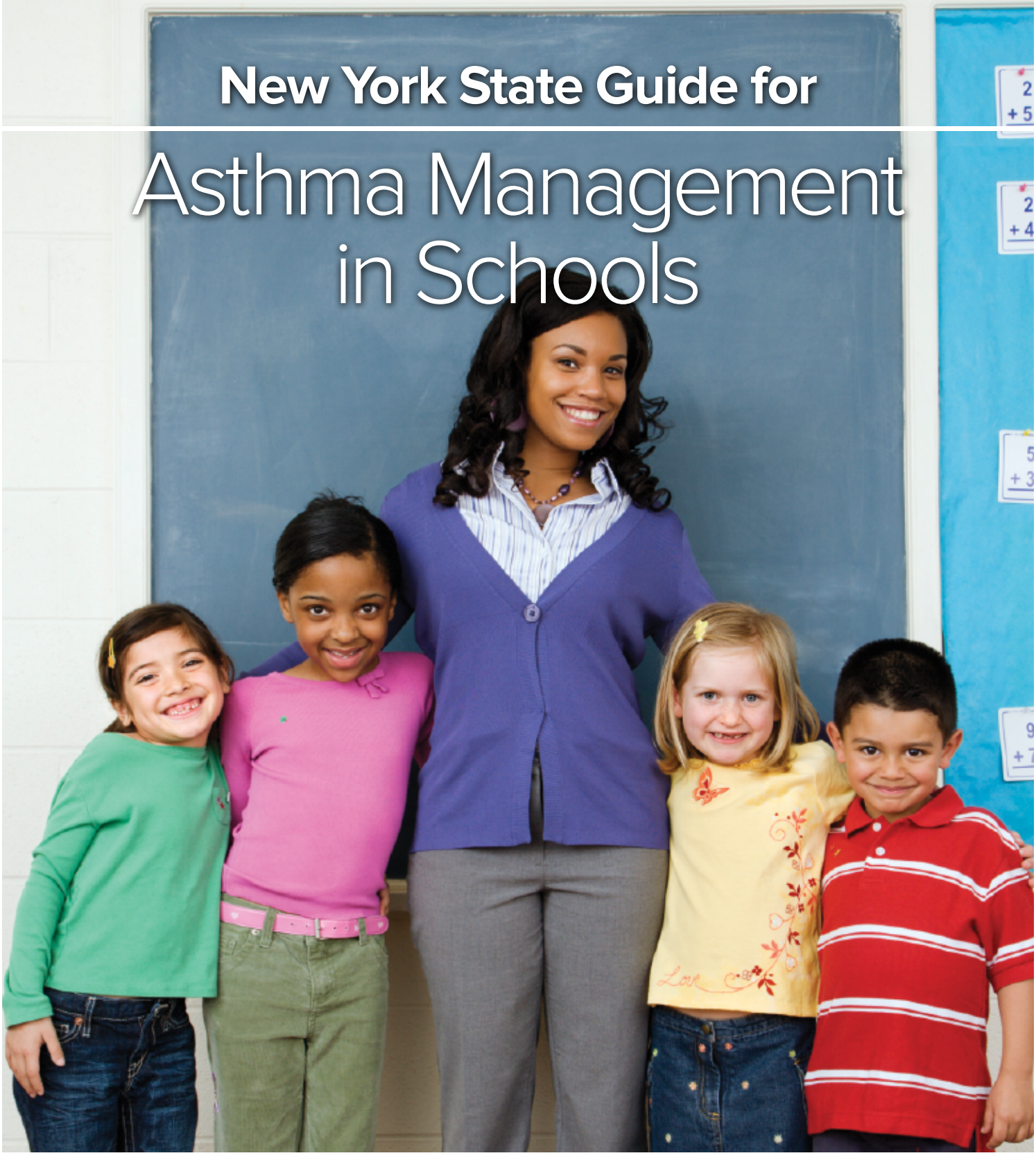
New York State Guide for

Asthma Management in Schools



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Purpose of the Guide

The purpose of the *New York State Guide for Asthma Management in Schools* is to provide information and resources to assist school personnel to help students with asthma remain healthy, optimize learning, and participate fully in school. The guide is designed for school and district employees, parents or guardians, members of local school boards, and leaders of organizations interested in the management of childhood asthma.

Asthma is a major public health problem in New York. In 2014, an estimated 1.65 million adults (10.7%) and nearly 360,000 children (8.7%) in New York had asthma.[1] About one in every two New Yorkers with asthma does not have their asthma under control. Emergency department (ED) and hospital discharge rates for asthma are higher among New York State (NYS) residents when compared to the national rate, and are approximately twice the levels targeted in *Healthy People 2020*.[1] Poor asthma control contributed to 290 deaths, more than 168,000 emergency department visits, and approximately 34,000 hospitalizations in NYS in 2014.[1]

One in every eleven children in NYS had asthma in 2014.[1] Furthermore, asthma disparities exist among certain age groups. Children in NYS aged 10-14 had the highest current asthma prevalence in 2014.[1] From 2005 to 2014, children aged 0-4 years had the highest emergency department visit and hospital discharge rates compared to all other age groups.[1] Since asthma is one of the leading causes of school absenteeism, schools can have an impact not only on academic performance but also on improving the health of students and their regular attendance in school.[2,3] Adopting asthma-friendly policies and procedures will both help promote asthma control and guide a student's efforts to effectively manage his/her asthma in and out of school. Coordinating services between school personnel, private health care providers, community-based organizations, and the student's family will assist in schools in supporting students with asthma. School personnel can also promote asthma awareness by providing asthma education for all students and staff to create an asthma-friendly environment that can decrease asthma triggers.

Developing a School Protocol

Students come to school with diverse medical conditions, such as asthma, which may impact both learning and health. School districts should have protocols and procedures in place to assist students with asthma to be able to participate in school fully. As each student will differ in levels of maturity and physical characteristics, he/she will have unique needs related to his/her asthma. Therefore, the school will need to treat each student with asthma as an individual within the overarching school health services program. The planning process should include, but is not limited to:

- Development of a written procedure to guide the program and district personnel for proper management of the student with asthma, consistent with state and federal laws;
- Development of detailed, written asthma-related protocols and procedures in coordination with the school district medical director to ensure consistency of practice within the district to include:
  - Development of individual Emergency Care Plans based on private health care provider medical orders, and addressing student needs during school, as well as on the bus, field trips, and other on or off-campus school sponsored events;
  - Procedures regarding building maintenance and mitigation of environmental asthma triggers;
  - Identification of school personnel roles and responsibilities;
  - Identification and provision of professional development and education needs for both licensed and unlicensed personnel;
- Policy, protocols, and procedures should be evaluated, reviewed, and revised periodically at a rate necessary to keep current with best practice; and,
- Ongoing communication to school personnel, students, parents/guardians, and the community related to district policy and protocols, as well as regular collaboration with private health care providers regarding their patients' ongoing needs.

I. Asthma Overview

Why Does Asthma Matter?

Common among Students

Asthma remains a major problem in NYS. In 2014, approximately 360,000, or 1 in 11, children younger than 18 years had asthma.[1] Children are more likely to visit the emergency room department for asthma-related conditions than adults, particularly those ages 0 to 4 years. This rate may be higher in densely populated communities or among certain population groups. The prevalence of asthma in 2014 was higher among black children, affecting nearly 1 in every 7, compared to 1 in every 18 white children.[1]

Leading Cause of School Absence

Studies have found that students who have asthma miss more school days compared to students who do not have asthma. Asthma-related school absence happens for many reasons such as symptoms, doctor visits, hospitalizations, exposure to environmental asthma triggers, and sleep loss due to nighttime asthma exacerbations.[2] Nationally, half of all students with asthma miss at least one day of school each year because of their disease.[4]

Asthma Disparities

Asthma disparities persist among racial, ethnic, and age groups.[5] Non-Hispanic black children experience some of the highest asthma prevalence rates in NYS. Non-Hispanic black and Hispanic middle and high school students also experience higher asthma prevalence rates when compared to non-Hispanic whites, and other non-Hispanic racial and ethnic groups in NYS.[1] Hispanics of Puerto Rican descent experience higher asthma prevalence compared to other Hispanic groups in the U.S.[5] Disparities also exist among certain age groups in NYS. In 2014, children aged 10-14 years had the highest current asthma prevalence, while children aged 0-4 years had the highest emergency department visit and hospital discharge rates.[1]

What Is Asthma?

According to the National Institutes of Health (NIH), asthma is a chronic lung disease that inflames and narrows the airways. It causes recurring periods of chest tightness, shortness of breath and/or coughing, and in some cases recurrent episodes of wheezing (usually a high-pitched whistling sound during breathing). The coughing often occurs at night or early in the morning.[6]

Asthma is a serious, chronic lung disease that will likely persist throughout a person's lifetime but can be controlled with proper management. Asthma symptoms can vary from student to student, from season to season, or even hour by hour. Asthma is caused by ongoing inflammation (swelling) that makes the airways very sensitive and narrows the

airways to some extent. When a student who has asthma is exposed to things like tobacco smoke, dust, chemicals, colds or flu viruses, pollen, vehicle exhaust, pet dander, or chalk dust – called asthma "triggers" – the airways react, causing one or more of the following changes in the airways:

- The inner walls of the airways get more inflamed (swollen), which may reduce the size of the airway,
- The muscles around the airways become larger and contract more often, which squeezes the airways, making them even smaller, or
- Glands in the airways make thick mucus, which blocks the airways even more.[2]

It cannot be predicted how any one student will react to being exposed to a trigger; symptoms may be intense or mild. These changes can make it harder for the student to breathe and can cause coughing, wheezing, tightness in the chest, and/or shortness of breath. If the inflammation associated with asthma is not treated and kept under control, each time the airways are exposed to an asthma trigger, the inflammation increases, and the student who has asthma is likely to have symptoms that may worsen.[2] Uncontrolled inflammation of asthma may lead to permanent damage to the lungs.[7]

Classification of Asthma Severity

The National Asthma Education Prevention Program (NAEPP), *Expert Panel Report (EPR-3): Guidelines for the Diagnosis and Management of Asthma*, provides information on assessment and monitoring of asthma severity and control.

The EPR-3 classifies asthma severity into four levels: intermittent, mild persistent, moderate persistent, and severe persistent. "Severity" is measured by the private health care provider as part of the asthma diagnosis and management. The asthma severity levels help determine the type and level of initial asthma therapy needed.

Students with intermittent asthma commonly experience infrequent exacerbations (a worsening; or increase in the severity of a disease or its signs and symptoms), separated by normal pulmonary function consisting of no symptoms. Students with persistent asthma, particularly those not taking long-term control medication, often experience asthma symptoms and night awakening more than twice a week. However, any student with asthma regardless of their asthma severity level may still experience sudden, severe, and life-threatening exacerbations. The student's written Asthma Action Plan should include signs and symptoms of worsening asthma symptoms, as well as specific provider orders for using short-acting beta2-agonists, oral systemic or inhaled corticosteroids or other medications, and when to contact a health care provider for follow-up medical care.[8]

Asthma Control

Licensed school health personnel can instruct students and their caregivers to monitor their asthma and utilize prescribed medications correctly, which will help improve asthma control. Students with uncontrolled asthma are at greater risk for a decreased quality of life, and increased ED and hospitalizations, and a life-threatening exacerbation. Asthma control is the extent to which asthma symptoms and impairment are minimized by medical treatment. Asthma control is categorized into three levels: well-controlled, not well-controlled, or poorly controlled.

- Well-controlled: may experience asthma symptoms two days a week or less
- Not-well controlled: may have asthma symptoms occurring more than two days a week, whether the person is taking medication
- Poorly controlled: may experience asthma symptoms throughout the day[8]

Students whose asthma is not well-controlled or poorly controlled would benefit from asthma self-management – education, environmental trigger assessment, and improved medication and device adherence. School health personnel who suspect a student's asthma is not well-controlled or poorly controlled should encourage the student and/or family to follow up with a private health care provider.

For more information on asthma severity and asthma control, the following resources are available from the National Institutes of Health and NYSDOH respectively:

1. National Asthma Education and Prevention Program – Guidelines (https://www.nhlbi.nih.gov/files/docs/guidelines/gip_rpt.pdf)
2. Clinical Guidelines for Diagnosis, Evaluation, and Management of Asthma (https://www.health.ny.gov/publications/4750.pdf)
3. The Asthma Control Test™ questionnaire is a tool to help individuals 12 years or older determine if their asthma symptoms are well controlled. The score can then be shared with a private health care provider to help with asthma management. (http://www.asthma.com/additional-resources/asthma-control-test.html/)
4. Childhood Asthma Control Test™ for Children is for use with children ages 4-11 years of age. (https://www.nhp.org/provider/asthma/Survey_ACT_child_EN.pdf)

Cough-variant Asthma

Cough-variant asthma is a persistent nonproductive cough with minimal wheezing or dyspnea which could interfere with sleep, work, and social activities. This type of asthma is most common among younger students. Students with cough-variant asthma do not typically display other asthma symptoms such as shortness of breath and wheezing. Individuals with cough-variant asthma often experience an increase in coughing when exercising or engaging in high aerobic activities. Common asthma triggers and allergies may also increase coughing among these students. In some cases, cough-variant asthma has the potential to develop to "classic" asthma which includes symptoms such as wheezing and shortness of breath. Students with cough-variant asthma receive similar treatments as students with typical asthma (for information on asthma medication see pages 8-10).[9]

Exercise-induced Asthma

Exercise is a very common trigger for asthma and often the most common cause of asthma symptoms in adolescents. Since exercise and participating in sports are a part of healthy living, exercise-induced asthma (EIA) should be managed so that exercise is not avoided.[10] Fortunately, with proper treatment, students with EIA should be allowed to fully participate in physical activity and sports and achieve their best performance levels unless otherwise indicated by their private health care provider. Treatment with prescribed medicine (per the order/prescription from the student's health care provider) immediately before vigorous activity or exercise can prevent symptoms. It is important to keep in mind that poor endurance or

EIA can indicate poorly controlled persistent asthma as can frequent use of rescue inhalers (more than two times a week) for symptom management. Activity should be limited or curtailed ***only*** as a last resort.[10]

The most common symptom of EIA is coughing, but students with EIA also may exhibit wheezing, chest tightness, and shortness of breath. Symptoms may begin during exercise and may worsen 5 to 10 minutes after stopping exercise or during the normal "cooling down" period. Symptoms range from mild to severe and often resolve in 20 to 30 minutes. Occasionally, some individuals will experience "late-phase" symptoms 4 to 12 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.[10]

According to the National Asthma Education and Prevention Program (NAEPP), there are six recommendations from the Guidelines Implementation Panel which outline the top six priority clinical (health care provider) practice recommendations[11]:

1. "Inhaled Corticosteroids: The most effective medications for long-term management of persistent asthma, and should be utilized by patients and clinicians as is recommended in the guidelines for control of asthma."
2. "Asthma Control: At planned follow-up visits, asthma patients should review level of control with their health care provider based on multiple measures of current impairment and future risk in order to guide clinician decisions to either maintain or adjust therapy."
3. "Asthma Action Plan: All people who have asthma should receive a written Asthma Action Plan to guide their self-management efforts."
4. "Follow-up Visits: Patients who have asthma should be scheduled for planned follow-up visits at periodic intervals in order to assess their asthma control and modify treatment if needed."
5. "Asthma Severity: All patients should have an initial severity assessment based on measures of current impairment and future risk in order to determine type and level of initial therapy needed."
6. "Allergen and Irritant Exposure Control: Clinicians should review each patient's exposure to allergens and irritants and provide a multipronged strategy to reduce exposure to those allergens and irritants to which a patient is sensitive and exposed, i.e., that make the patient's asthma worse."

Signs and Symptoms

Warning signs typically appear before more serious asthma symptoms occur. These signs may not be present with every student and can differ among students with asthma. To aid in determining the seriousness of the student's symptoms, each individual student's early warning signs should be documented in his or her Asthma Action Plan (see pages 13-14 for more information about action plans). It is important that those in frequent contact with students, such as teachers, teacher's assistants, aides, and other school personnel, be aware of and observe each student's early warning signs. Even mild asthma symptoms can worsen quickly, resulting in tightening of the airways. When airways become restricted, and mucus clogs the airways, then an asthma exacerbation is occurring. Other names for an asthma exacerbation include attack, episode, or flare up.[2]

Common Early Warning Signs and Symptoms of Asthma

- Mild cough
- Mild difficulty breathing
- Mild wheezing
- Chest starts to hurt or feel tight
- Complaint of the feeling that something is stuck in their throat
- Waking up at night with coughing or wheezing
- Cannot do all usual activities, or becomes less active due to coughing or wheezing
- Need quick-relief medication more than usual
- Low peak flow readings measuring lung function[2]

Common Asthma Triggers

Asthma triggers can be different for each person with asthma. People with asthma always should be aware and on the lookout for potential triggers. Triggers can cause mild symptoms or an asthma exacerbation. Both indoor and outdoor allergens and irritants can play a significant role in triggering asthma exacerbations.[12] Below is a list of allergens, irritants, and triggers that can cause or worsen an asthma exacerbation:

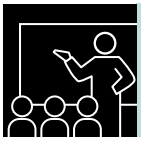
Allergens and Irritants

- Pollen from trees, plants, and grasses, including freshly cut grass
- Animal dander from pets with fur or hair
- Dust mites in dust, carpeting, plush toys, pillows, or upholstery
- Cockroach droppings
- Rodent urine
- Strong smells and sprays, such as perfumes, essential oils, paints, cleaning solutions, talcum powder, or pesticides
- Air pollution
- Cigarette and other tobacco smoke[2]
- Vehicle exhaust from idling school buses and cars
- Smoke from wood stoves or fires
- Mold

Other Asthma Triggers

- Respiratory infections, including colds, influenza, and respiratory syncytial virus (RSV)
- Gastroesophageal reflux disease (GERD)
- Exercise, such as running or playing hard, especially in cold weather
- Strong emotional expressions, such as laughing or crying hard
- Changes in weather or exposure to cold air
- Foods and food additives
- Hormonal changes
- Stress[2]

For information on steps, schools can take to create an asthma-friendly environment, see section, “Is Your School Asthma-Friendly?,” beginning on page 31 of this guide.



School personnel should act immediately if warning signs occur, even mild symptoms can worsen quickly.

Asthma Medications and Devices

In combination with asthma devices, asthma medications may be inhaled or taken orally. There are multiple medication students with asthma may take. A health care provider may occasionally base medication orders on peak flow meter readings and/or symptoms. Asthma medications are delivered in one of three different devices: metered-dose inhalers (MDI) and nebulizers deliver the medication in an aerosolized form; dry powder inhalers (DPI) deliver it in a powdered form.

Many students who have persistent asthma need to take both long-acting medications and quick-relief medications. Long-term control medications are usually taken daily to control asthma's underlying inflammation and prevent asthma symptoms. Quick-relief medications are taken when needed to help stop asthma symptoms and attacks, by temporarily relaxing the muscles around the airways, but are ineffective for long-term asthma control.[2]

As stated earlier, each student should have a written Asthma Action Plan from his/her private health care provider, which includes the student's individual treatment goals, medications and peak flow plan, with steps to reduce his/her asthma triggers.

New York State Education Law only permits appropriately licensed health professionals to administer medication to students in a school, with limited exceptions. Under Title Eight of Education Law, such professionals include but are not limited to: physicians, nurse practitioners (NP), physician assistants (PA), registered professional nurses (RN), and licensed practical nurses (LPN) under the direction of an RN. More information on this is available in NYS Education Department Guidelines for Medication Management in Schools. (http://www.p12.nysed.gov/sss/documents/MedicationManagement-DEC2017.pdf)

Respiratory Quick-Relief Medications

All students with asthma need access to quick-relief medications, if ordered, in a timely manner. Quick-relief medications also referred to as respiratory rescue medications, are given to help relieve asthma symptoms when they occur and should be taken when asthma symptoms are first noticed. Inhaled short-acting beta2-agonists (SABAs) are the most common medications used for quick-relief. They work by relaxing the tight muscles around the airways when asthma symptoms occur. This allows airways to widen, so air flows better through them. An individual's asthma exacerbation may be resolved just by taking one dose of their quick-relief medication.

TYPES OF RESPIRATORY QUICK-RELIEF MEDICATIONS

- Albuterol (AccuNeb, Proventil HFA, ProAir HFA/RespiClick, Ventolin HFA)
- Levalbuterol (Xopenex, Xopenex HFA)

School personnel should note, when possible, if the student uses his/her rescue medicine more than two days a week unless the student has EIA and uses an inhaler prior to exercise. This is a sign the student's asthma may not be well controlled and that his/her Asthma Action Plan may need to change. School personnel should notify the parents/guardians of any condition that may warrant follow-up care, including asthma, so that they can inform the child's private health care provider.

For more information see the NYSED memo, "Parent/Guardian Notification Regarding Illness/Injury." (http://www.p12.nysed.gov/sss/documents/ParentGuardianNotificationReStudentIllnessInjuryMemo.pdf)

Long-Acting Control Medications

Students with persistent asthma will typically take long-acting control medicines daily to prevent asthma symptoms. It is important that school personnel and individuals caring for students know that long-acting control medicines do not provide quick-relief from symptoms.

Long-acting beta-agonists (LABAs), a type of long-acting control medicine, are taken daily for long-acting airway muscle relaxation. This allows the airways/tubes carrying air into and out of the lungs to remain open, making breathing easier. Long-acting beta-agonists should be taken only in combination with an inhaled corticosteroid (ICS) for long-term asthma treatment and management. LABAs are distributed as a combined product that includes an ICS. Combinations of a long-acting beta2-agonist and inhaled corticosteroid include formoterol and budesonide (Symbicort), formoterol and mometasone (Dulera), and salmeterol and fluticasone (Advair).

TYPES OF LONG-ACTING CONTROL MEDICATIONS

- Inhaled Corticosteroids: The most effective long-term control medication
- Long-Acting Beta-Agonists: Used in combination with inhaled corticosteroids.
- Leukotriene Modifiers: Alternative controller medications
- Cromolyn and Theophylline: Alternative controller medications (not typically preferred).
- Immunomodulators and Biologics: Modifies the allergic immune response[13]

Emergency Use of Epinephrine

Epinephrine may be administered in schools to students under either a patient specific order or a non-patient specific order. Detailed information regarding state laws and regulations governing the emergency use of epinephrine in schools, along with training requirements for unlicensed personnel to administer is available in the NYS Education Department Guidelines for Medication Management in Schools. (http://www.p12.nysed.gov/sss/documents/MedicationManagement-DEC2017.pdf).

Epinephrine should not be the first-line of treatment for asthma. Albuterol is typically the first treatment of choice for asthma.[2] Parents/guardians of students with asthma should be encouraged to discuss the need for an order for emergency epinephrine from their private health care provider for use as necessary.

Asthma Devices

The following devices are used in combination with asthma medication and management. Reviewing student technique and teaching correct usage is important to maximize medication delivery into the lungs.

METERED-DOSE INHALER

A metered-dose inhaler (MDI) is a device that sprays a pre-set amount of aerosolized medicine through the mouth to the airways. It is important to take the medication as prescribed and use the proper technique to deliver the medicine to the lungs.[2]

Information on how to use a metered-dose inhaler with and without a spacer is available through the CDC online video, “Know How to Use Your Asthma Inhaler.” (http://www.cdc.gov/asthma/inhaler_video/)

SPACER AND VALVED HOLDING CHAMBER

Many asthma medications are taken through inhalation. A private health care provider’s orders should include the need to use a spacer device or valved holding chamber (VHC) with an MDI. A spacer is a device that attaches to the mouthpiece of a quick-relief inhaler to create space between the mouth and the MDI. The space created helps the medicine break into smaller droplets allowing the asthma medication to move easier and deeper into the lungs of the student when he/she breathes in the quick-relief or controller medicine formulated in an MDI.

A valved holding chamber (VHC) is another type of spacer that has a one-way valve at the mouthpiece. A VHC also traps and holds the medicine giving more time for the student to take a slow, deep breath reducing the amount that settles in the mouth and throat. A spacer is also useful in preventing side effects from asthma medication such as thrush. See section “Asthma Medication Side Effects” below.

For more information on the benefits and how to use a spacer, visit the American Lung Association at: http://www.lung.org/lung-health-and-diseases/lung-disease-lookup/asthma/living-with-asthma/

DRY POWDER INHALER

A dry powder inhaler (DPI) delivers pre-set doses of medicine in powder form. The medication gets to the airways when a person takes a deep, fast breath in from the inhaler. It is important to take the medication as prescribed and use the proper technique to deliver the medicine to the lungs. Information on how to use a dry powder inhaler is available at National Asthma Education and Prevention Program (http://www.nhlbi.nih.gov/files/docs/public/lung/asthma_tipsheets.pdf).

NEBULIZER

A nebulizer is an air compressor machine when used with a nebulizer cup, tubing, and mouthpiece or face mask delivers aerosolized medicine in a fine, steady mist. Health care providers may recommend nebulizers for students with asthma who may not be able to breathe in deeply in order to use inhalers. It is important to take the medication as prescribed and use the proper technique to deliver the medicine to the lungs.

Information on how to use a nebulizer is available at: Medline Plus – How to Use a Nebulizer (https://www.nlm.nih.gov/medlineplus/ency/patientinstructions/000006.htm).

PEAK FLOW METER

Peak flow meters are asthma management devices used to measure a person's ability to push air out of the lungs. Recording peak flows using the same device brand and type at the same time daily will give the most consistent numbers. A decreased peak flow reading usually precedes an exacerbation, sometimes 1-2 days in advance of symptoms. For this reason, a private health care provider may order medications based on peak flow readings and/or symptoms.

Note that many individuals use peak flow meters during high-risk times such as cold and flu season or when they are aware of their own personal triggers may be at a high point (like spring for those with pollen allergy).

Information on how to use a peak flow meter is available at: Medline Plus – How to Use a Peak Flow Meter (https://www.nlm.nih.gov/medlineplus/ency/patientinstructions/000043.htm)

CLEANING AND MAINTENANCE OF DEVICES/EQUIPMENT

Cleaning asthma equipment is simple and very important. Proper care prevents infection and maintains correct functioning of the device. Cleaning should be done in a dust- and smoke-free area away from open windows. ***Always*** consult manufacturer's instructions for specific information. The following is best practice for cleaning most asthma equipment.

To clean MDIs:

1. Remove the canister and mouthpiece cap. Wash the mouthpiece through the top and bottom with warm running water for 30 seconds at least once a week.
2. To dry, shake off excess water and let the mouthpiece air dry thoroughly, such as overnight. When the mouthpiece is dry, replace the canister and the mouthpiece cap. Blockage from medication buildup is more likely to occur if the mouthpiece is not allowed to air dry thoroughly.
3. If you need to use an inhaler before it is completely dry, shake off excess water, replace the canister, and test spray twice into the air, away from the face, to remove most of the water remaining water in the mouthpiece. Then administer dose as prescribed. After such use, rewash and air dry thoroughly as described in Steps 1 and 2.

To clean spacers/valved holding chambers:

1. Take the spacer apart.
2. Gently move the parts back and forth in warm water using a mild soap. Never use high pressure or boiling hot water, rubbing alcohol or disinfectant.
3. Rinse the parts well in clean water.
4. Do **not** dry inside of the spacer with a towel as it will cause static. Instead, let the parts air dry.
5. A spacer/valved holding chamber should be examined every 6-12 months to check that the structure is intact (e.g. no cracks) and the valve (if one is present) is working properly.

To clean air compressors, nebulizers, tubing, and mouthpieces/facemasks:

1. After each use, rinse the nebulizer cup with warm water for approximately 30 seconds, shake off excess water and let it air-dry.
2. After your last treatment of the day, wash the mouthpiece or mask and nebulizer cup in warm, soapy water. The compressor tubing does not need to be cleaned. Rinse well and let air-dry.
3. Store the parts in a clean zip-lock bag labeled with student's name.
4. Once a week, after washing your equipment, disinfect the equipment using either a vinegar/water solution or the disinfectant solution your equipment supplier suggests. To use the vinegar solution, mix ½ cup white vinegar with 1½ cups of water. Soak the equipment for 20-30 minutes and rinse well under a steady stream of water. Only one student's equipment may be soaked in the vinegar solution, dispose of used vinegar solution. Shake off the excess water and allow to air dry on a paper towel. Always allow the equipment to completely dry before storing in a plastic, zippered bag.
5. Replace the nebulizer cup, mouthpiece or mask, and tubing as often as directed by the manufacturer.
6. Wipe the compressor with a clean, damp cloth as needed. Never put the compressor in water.
7. Turn off the compressor and cover it with a clean, dry cloth when not in use
8. Do not put the compressor on the floor while using or storing it.
9. Replace or clean the compressor filter as directed by the manufacturer.

Asthma Medication Side Effects

Like many other medicines, certain asthma medication, particularly long-acting control medicines, can have side effects. Students who use inhaled corticosteroids products (ICS) are at risk for a mouth infection called oral thrush. Oral thrush is also referred to as oral candidiasis, which is an overgrowth of the yeast *Candidiasis albicans*. This yeast is a normal organism in the mouth; however, the use of corticosteroid inhalers can cause it to overgrow. The risk for oral thrush is easily reduced by always using a spacer with an MDI formulation of ICS. A spacer prevents the medicine from landing in the mouth. Students should be encouraged to rinse their mouth out with water after taking the inhaled corticosteroids to lower their risk for oral thrush. Other side effects of commonly used medications to treat asthma may include nervousness, nausea, jitteriness, hyperactivity, and drowsiness.

II. Caring for Students with Asthma

School Asthma Management Program

Asthma can usually be controlled with proper medication management and trigger reduction. Effective asthma management at school can help students with asthma stay healthy and attend school regularly, allowing them to participate fully during their school day and increase their academic achievement.

It is important that school personnel working with students with asthma understand that untreated and/or uncontrolled asthma can result in death and therefore, a prompt response is critical.

Effective asthma management at school includes assessing and monitoring asthma control, following private health care provider orders for medication use and management of the student's asthma, training staff to use and follow the student's Emergency Care Plan, minimizing exposure to asthma triggers, and encouraging parents/guardians to regularly see their private health care provider as recommended. When developing school asthma management programs, schools should be aware of and follow federal and state laws and regulations.

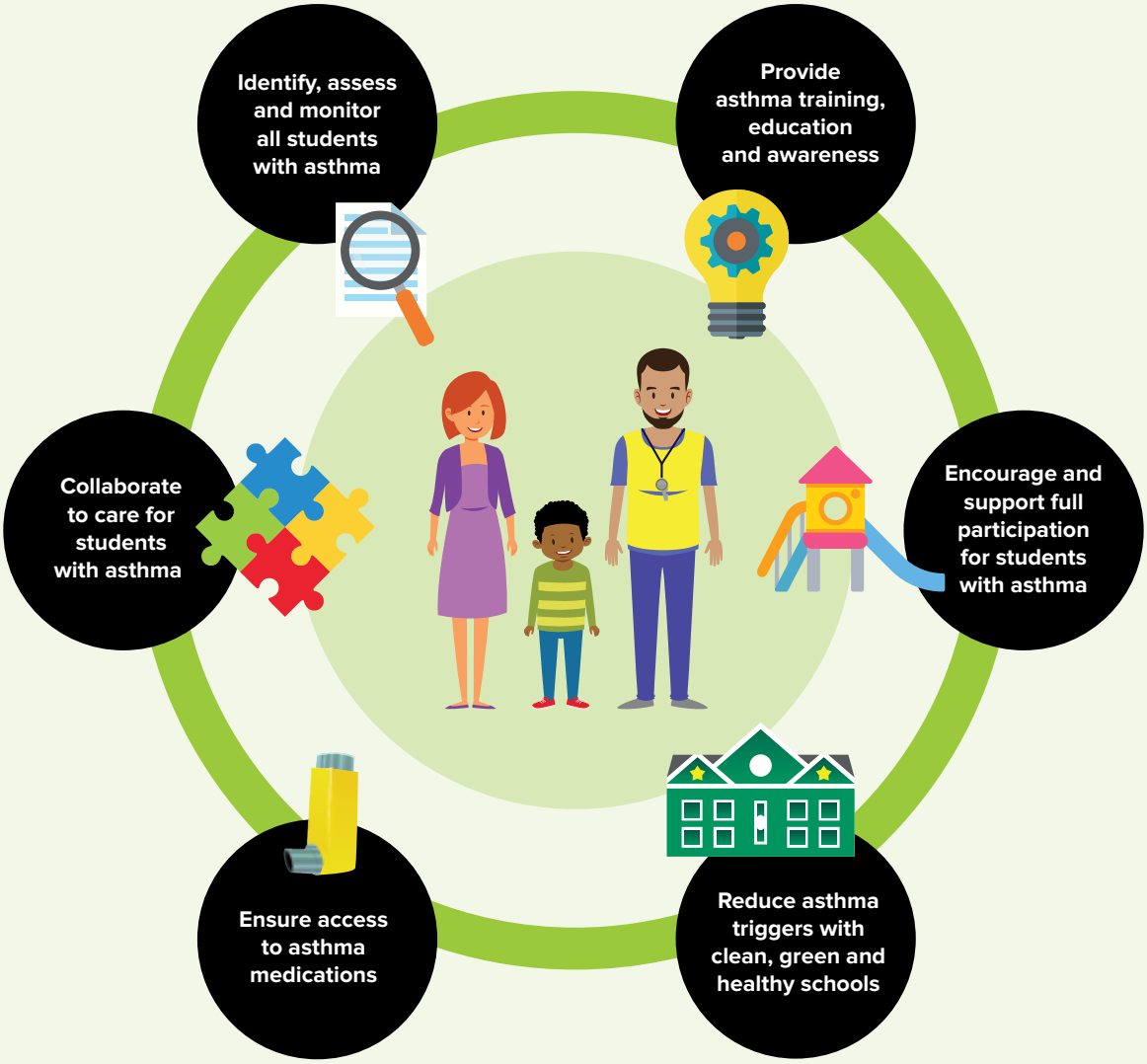
School personnel, particularly school health professionals, can assist students, parents/guardians, and private health care providers to effectively manage asthma at school.

A school asthma management program includes the following:

- A team approach consisting of school personnel, students, parents/guardians, private health care providers to develop, implement, and monitor the school's asthma management program (see Section III for details);
- Provision of both school nursing and other support services to students and families to allow the student to fully participate in school;
- Procedures that ensure quick and easy access to prescribed medications;
- Development of Emergency Care Plans by school nurse or medical director for school personnel to follow;
- Reduction or, when possible, elimination of exposure to asthma triggers;
- Education of the school community about asthma; and
- Development of district and building plans for any health emergency including asthma.

Managing Asthma in Schools

A Team Effort



Asthma Action Plans

Whenever possible, parents/guardians should meet with school personnel prior to the start of school to provide any necessary information, including any forms and written orders from their private health care provider regarding their child's asthma. This may include the student's medical provider orders and their Asthma Action Plan (AAP). This meeting allows parent/guardians and school personnel to develop plans to meet the student's needs at school. When parents/guardians are unable to meet in person prior to the start of the school year, they should provide written documentation to the school.

Schools should encourage each student diagnosed with asthma to have an up-to-date written Asthma Action Plan from his/her provider to the school. A written Asthma Action Plan provides school health professionals with information on the student's asthma triggers and symptoms, provider orders for medications and asthma management. Some Asthma Action Plans may have peak flow meters used to assist in assessing current asthma status when compared to the individual's "personal best." Additionally, a modified exercise regimen may

be included on the Asthma Action Plan, which details alternative physical activities for students with exercise-induced asthma. Sample Asthma Action Plans are available at:

1. NYS Department of Health – Asthma Action Plan (https://www.health.ny.gov/publications/4850.pdf)
2. NYS Center for School Health – Asthma Action Plans (https://www.schoolhealthny.com/site/default.aspx?PageType=3&ModuleInstanceID=355&ViewID=7b97f7ed-8e5e-4120-848f-a8b4987d588f&RenderLoc=0&FlexDataID=753&PageID=186)

For students who do not have an Asthma Action Plan on file, a sample emergency action protocol is available at: National Asthma Education and Prevention Program – Suggested Emergency Nursing Protocol for Students (https://www.nhlbi.nih.gov/files/docs/resources/lung/sch-emer-actplan.pdf).

Recommended Asthma Action Plan

The document below is from the NYS Department of Health Asthma Action Plan. To access the most updated and complete version of the Asthma Action Plan, please go to https://www.health.ny.gov/publications/4850.pdf

GREEN ZONE: GO! — Take These **DAILY CONTROLLER MEDICINES (PREVENTION)** Medicines **EVERY DAY**

You have ALL of these:
- Breathing is easy
- No cough or wheeze
- Can work and play
- Can sleep all night

☐ No daily controller medicines required
☐ Daily controller medicine(s):_____
☐ _____
Take _____ puff(s) or _____ tablet(s) _____ daily.
☐ For asthma with exercise, ADD: _____,
_____ puffs with spacer _____ minutes before exercise

ALWAYS RINSE YOUR MOUTH AFTER USING YOUR DAILY INHALED MEDICINE.

The Green Zone is when a student has no symptoms are present. Students whose asthma is well-controlled should be in this zone all the time. It is important that the student takes his/her control medicines as ordered by his/her private health care provider.

YELLOW ZONE: CAUTION! — Continue **DAILY CONTROLLER MEDICINES** and **ADD QUICK-RELIEF** Medicines

You have ANY of these:
- Cough or mild wheeze
- Tight chest
- Shortness of breath
- Problems sleeping, working, or playing

Take daily controller medicine if ordered and add this quick-relief medicine when you have breathing problems:
☐ _____ inhaler _____ mcg
Take _____ puffs every _____ hours, *if needed.* Always use a spacer, some children may need a mask.
☐ _____ nebulizer _____ mg /_____ ml
Take a _____ nebulizer treatment every _____ hours, *if needed.*
☐ Other _____
If quick-relief medicine does not HELP within _____ minutes, take it again and CALL your Health Care Provider
If using quick-relief medicine more than _____ times in _____ hours, CALL your Health Care Provider

IF IN THE YELLOW ZONE MORE THAN 24 HOURS, CALL HEALTH CARE PROVIDER.

The Yellow Zone is when a student has the above-listed symptoms present. A student may fall into this zone when exposed to an asthma trigger. Control medicines and quick-relief medicines should be taken as ordered by the student's private health care provider.

RED ZONE: EMERGENCY! — Continue **DAILY CONTROLLER MEDICINES** and **QUICK-RELIEF** Medicines and **GET HELP!**

You have ANY of these:
- Very short of breath
- Medicine is not helping
- Breathing is fast and hard
- Nose wide open, ribs showing, can't talk well
- Lips or fingernails are grey or bluish

☐ _____ inhaler _____ mcg
Take _____ puffs every _____ hours, *if needed.* Always use a spacer, some children may need a mask.
☐ _____ nebulizer _____ mg /_____ ml
Take a _____ nebulizer treatment every _____ hours, *if needed.*
☐ Other _____

CALL HEALTH CARE PROVIDER AGAIN WHILE GIVING QUICK-RELIEF MEDICINE. If health care provider cannot be contacted, CALL 911 FOR AN AMBULANCE OR GO DIRECTLY TO THE EMERGENCY DEPARTMENT!

The Red Zone is when a student has the above-listed symptoms present. A student in this zone needs ***immediate*** medical attention.

Emergency Care Plan for Unlicensed School Personnel

Every student diagnosed with asthma should have an Emergency Care Plan (ECP), (also referred to as an Emergency Action Plan) that directs steps for non-nursing school personnel if an asthma exacerbation occurs and a school nurse or other appropriate licensed health care professional is not available. An Emergency Care Plan is a set of guidelines that provides specific directions for non-nursing personnel about what to do during an asthma emergency. The Emergency Care Plan is written either by the medical director or the school nurse using information obtained from the private physician or other health care provider (i.e. previous symptoms, diagnosis) to provide instructions for school personnel on how to handle an asthma emergency in the absence of school health professionals, including emergency contact information for prompt notification of parent/guardian. Ideally, the Emergency Care Plan is developed with input from the student and parent/guardian. A sample Emergency Care Plan is available through the New York State Center for School Health Sample Emergency Care Plan for Unlicensed School Personnel: ASTHMA: (https://www.schoolhealthny.com/cms/lib/NY01832015/Centricity/Domain/88/ECPGenericAsthma0317.docx).

The original copy of the student's Emergency Care Plan should be filed in the student's cumulative health record (CHR). Best practice is for the school to discuss with the parents/guardians how the ECP will be shared with school personnel and since such plans contain health information and are subject to the confidentiality requirements of the Family Educational Rights Privacy Act (FERPA), for parents to authorize the distribution of such plans/health information to necessary school personnel and substitute teachers in their absence. All school personnel and substitute teachers who receive a copy of the ECP should be instructed to keep such information confidential. Copies of Emergency Care Plans should be kept in a secure but accessible location in a classroom.

The school nurse, or the school/district's medical director if there is no school nurse, may share the Emergency Care Plan to school personnel on a "need-to-know" basis in order to keep the student safe and react appropriately in an emergency situation. When providing Emergency Care Plans to school personnel, the school nurse should review the plan on an individual basis and answer any questions they may have specific to that student's asthma management. More information on FERPA is available at the U.S. Department of Education – Family Educational Rights and Privacy Act (https://www2.ed.gov/policy/gen/guid/fpco/ferpa/index.html).

Acting before asthma symptoms worsen or an asthma exacerbation occurs is always the best approach. Reviewing each student's Asthma Action Plan, or an Emergency Care Plan developed by the school nurse or medical director for unlicensed school personnel to follow, will prepare school personnel for what to watch for and what to do in case of symptoms or should an asthma exacerbation occur.

Assessment of Students' Asthma Control

When a student comes to the health office for medication administration or asthma symptoms, an opportunity is provided for the school nurse who is a registered professional nurse (RN), or other appropriate licensed health professional whose scope of practice includes assessment, to assess both the student's respiratory status and asthma control.

Subjective and objective data gathered* should include:

- Observation of any objective or subjective symptoms – coughing or repeated clearing of throat, audible wheezing, complaints of chest tightness or shortness of breath, difficulty speaking, chest retractions, and nasal flaring;
- Observation of any signs of upper respiratory infection, fatigue, increased irritability, and reports of decreased appetite and slowed activity level:
- Measurement of student's vital signs, noting any tachypnea or tachycardia;
- Auscultation of the lungs, noting any wheezing, or decreased breath sounds; and
- Measurement of peak flow meter reading as necessary.

**Please note: Assessment is not within the scope of practice of a licensed practical nurse (LPN). The LPN must review the data gathered with the directing RN or other appropriate licensed health professional. For more information, please see FAQs on the NYS Office of the Professions Nursing website: NYSED Office of Professions – Nursing Practice Questions (http://www.op.nysed.gov/prof/nurse/nursepracticefaq.htm).*

Procedures for When Symptoms Are Present

If any of the conditions described above are noted, the school nurse should administer emergency rescue inhaled medication(s) in accordance with the private health care provider's orders. The school nurse should notify the provider and parent/guardian if symptoms do not respond to treatment or worsen. Students who do not improve or whose symptoms worsen despite treatment, or students who appear to have a severely compromised respiratory status, should be transported to the nearest emergency room via EMS. In the absence of a school nurse or other licensed school health personnel, unlicensed school personnel should refer to the student's Emergency Care Plan.

If the student's symptoms resolve with treatment, in most cases the student may resume normal school activities. The school nurse should instruct the student and school personnel on signs and symptoms that warrant a need for follow up assessment and care by the school nurse. School nurses should consider reassessing the student prior to the student being transported home if not being transported by the parent/guardian.

Parents/guardians should be informed of the symptoms the student experienced and how they were treated at school. The parent/guardian should be informed of asthma exacerbations and encouraged to follow up with their private health care provider as needed.

Registered professional nurses who administer medications are required to periodically assess and document the student's response to the medication. This assessment should include the effectiveness of the medication and any possible side effects. Concerns regarding frequency of need for rescue medications, as well as medication effectiveness or side effects, should be reported to the ordering provider.

Accessing Asthma Medications

Students with asthma might need to take medications during the school day and at school-sponsored events. The types of medications taken will vary with each student, and depend on their individual provider's orders.[14] Some students may need to take their medications daily, while others may only need to take their medications when asthma symptoms occur or prior to exercise. Schools will need to ensure that students have access to their medications in a timely manner as ordered by the provider, and that appropriate licensed health professionals are available to administer the student's medications if a student is unable to self-administer consistent with state and federal laws. Additionally, school health personnel should ensure that students use medications correctly (e.g., correct use of metered dose inhaler or nebulizer).

In accordance with Education Law, Article 19, §§916, 916-a, and 916-b, schools must permit a student to carry and self-administer their medications on school property and at any school function if he/she has:

1. A provider's order that attests the provider confirms the student has demonstrated he/she can self-administer their medications effectively; and
2. Written parent/guardian consent.

This law applies to the following medications:

- Inhaled rescue medications for respiratory symptoms; or
- Epinephrine auto-injector to treat life-threatening allergies; or
- Insulin, glucagon, and other diabetes supplies to manage their diabetes.

To ensure medication access during all school and school-sponsored activities on or off school grounds:

- Establish procedures to make sure that all students who have asthma have immediate access to their quick-relief medication at school, at all school sponsored activities, and during transportation between school and school sponsored events.
- Make sure that students have access to their quick-relief medication when prescribed for use before exercise or other physical activity. Students who have exercise-induced asthma (or exercise-induced bronchospasm) may be directed by their private health care

provider to pre-medicate as ordered before exercise or other physical activity to prevent asthma symptoms.[2]

- Ensure documentation to allow students to be administered medication and/or carry and use medication is provided to parents and guardians at the beginning of the school year. Completed forms are kept on file in the student's cumulative health record.
- Provide any additional support to students as needed who are carrying and using their own medications independently.
- School nurses or other school health personnel can help the student when needed to follow proper technique according to manufacturer's instructions to ensure adequate delivery of medication to the airways.
- Encourage parents or guardians of any student who carries and uses his/her own medications if they would like to leave a second inhaler at the school for use as needed.[2]

Notify parents/guardians and private health care providers if the school is choosing to stock albuterol for use by students who have run out of their own medications. Please note both a private health care provider order and parent/guardian consent is required authorizing the use of stock albuterol. See the following memo for details: NYSED Memo – Policy for Stocking Albuterol Metered Dose Inhalers (http://www.p12.nysed.gov/sss/documents/Albuterol2011memo.pdf).

An interactive online tool for parents and health care providers to determine student readiness to carry and administer their quick-relief inhaler is available through the American Lung Association at: American Lung Association – Student Readiness Assessment Tool (https://lung.training/assessment.html).

Special Considerations for Field Trips

When students are off school property, the same policies for the care of a student with asthma should be followed including for students who carry and use their medications independently. There should be a copy of each student's Asthma Action Plan and Emergency Care Plan with school personnel on the field trip. Staff should have access to a cell phone or other communication device for use to contact district administration or emergency medical services. This also applies to students who carry and use their medications independently.

The information in this section is only a summary of what schools need to do to support students diagnosed with asthma. It is not intended to provide detailed instructions on medication in schools and on field trips. Schools should refer to NYSED Guidelines for Medication Management in Schools (http://www.p12.nysed.gov/sss/documents/MedicationManagement-final2015.pdf) for details on the requirements for medication management in schools (inclusive of transportation) and at school sponsored events.

Social and Emotional Considerations

The diagnosis of asthma can be difficult to deal with at any age, but it can be particularly hard for students and families, who may have a challenging time adjusting to the diagnosis. Students are still developing emotionally and often think of themselves in relation to their peers. Asthma can make a student feel different. Some students may find it beneficial to explain to classmates and friends what asthma is and show them how their supplies work. Not all students decide to tell their friends and classmates about their asthma diagnosis. It is important to be respectful of this decision. No two students with asthma are alike, and it is important to remember that these students may experience a wide range of emotions. Older students may have more control over their treatment, and this additional independence will shift some of the responsibility to the student. Even high school students may require continued support at varying levels as they continue to learn how to best manage their condition. Students can be encouraged to talk with their school nurse, school counselors or social workers as needed. If the school does not have one of these professionals, the parent/guardian can be encouraged to discuss a referral for counseling with their child's private health care provider. Some local lung and/or allergy associations may offer school support programs and after-school education components and resources.

Schools can further assist by ensuring that students who have asthma are treated with dignity and respect. Bullying of students who have asthma cannot be tolerated by school personnel; the Dignity Act prohibits acts of harassment and bullying, including cyberbullying, and/or discrimination, by employees or students on school property or at a school function, including but not limited to such conduct of those based on a student's actual or perceived race, color, weight, national origin, ethnic group, religion, religious practice, *disability*, sexual orientation, gender (defined to include gender identity or expression), or sex (Education Law §12[1]).

A key principle in the Dignity Act relates to reporting incidents of harassment, bullying, and/or discrimination. Pursuant to §100.2(kk) of the Commissioner's regulations, when an incident is reported and an investigation verifies that a material incident of harassment, bullying, and/or discrimination has occurred, the superintendent, principal or designee shall take prompt action consistent with the district's Code of Conduct, reasonably calculated to end the harassment, bullying, and/or discrimination, eliminate any hostile environment, create a more positive school culture and climate, prevent recurrence of the behavior, and ensure the safety of the student(s) against whom such behavior was directed (8 NYCRR §100.2[kk][2][iv]). More information on implementation of The Dignity Act is available at: NYSED – The Dignity for All Students Act (http://www.p12.nysed.gov/sss/documents/MedicationManagement-final2015.pdf).

Educating the School Community

Educating students, families, and school personnel about asthma will allow all to effectively address asthma in the school setting. This may be accomplished with in-service education programs for staff, providing individual students or groups with developmentally appropriate asthma education, or collaboration with parent-teacher organizations to offer a family asthma education program at school. School health personnel may also provide parent/guardians with asthma management skills and information, or provide classroom instruction by incorporating asthma into the science or health education curriculum.

Building Emergency Plans and Procedures

Schools should include in their emergency plans how they will meet the needs of students with chronic health conditions during a building emergency. The best practice for students with asthma is to have written Asthma Action Plan and Emergency Care Plan that are kept in an accessible location to ensure that it, and essential medicines are available in case of any emergency. Building Emergency Plans should also include ***clear*** procedures for communicating emergency health information within the school – such as using walkie-talkies, texting, sending emails, and communicating with parents and guardians. The plan should also ensure availability of asthma medications and devices, and epinephrine auto-injectors in case of emergency. Best practice is that each health office is supplied with a recognizable, readily accessible, easily carried emergency pack for an assigned staff member to take with them during an emergency. Information on medications and building emergencies is available on pages 43-44 of NYSED Guidelines for Medication Management in Schools (http://www.p12.nysed.gov/sss/documents/MedicationManagement-final2015.pdf).

After each emergency event or drill, schools should assess and make changes to Emergency Plans and Procedures as needed.

III. The Asthma Management Team

Asthma management in schools requires a coordinated, collective effort among school personnel along with parent(s)/guardian(s) to ensure that all aspects of the school day address prevention measures, communication, and collaboration, while following the private health care provider's treatment plan. This team may include, but is not limited to: the student; parent/guardian; the principal; the medical director; school nurse(s); administration; classroom and physical education teacher(s), coach(es); custodial staff; pupil personnel services staff; transportation staff and others as designated by the district. Schools are encouraged to work with their school's wellness committee.

The following pages contain suggested actions team members can do to ensure the health and safety of a student diagnosed with asthma.

The Centers for Disease Control and Prevention's Coordinated School Health (CSH) model identifies the critical role schools have in promoting the health and safety of young people and helping them establish lifelong healthy behavior patterns. CSH was expanded to the Whole School, Whole Community, Whole Child (WSCC) model emphasizing a school-wide approach. This serves as a model for schools to help ensure each student remain healthy, safe, engaged, supported, and challenged.[15, 16]

For more information see CDC – Whole School, Whole Community, Whole Child (https://www.cdc.gov/healthyschools/wscc/index.htm).

Student

The ability of a student to recognize and act on asthma symptoms will be dependent on his/her age and development, and other factors. Schools can assist students to learn to recognize their asthma symptoms and to seek prompt treatment.

Each student should:

- Be educated about asthma, symptoms requiring treatment, how to obtain assistance in school, what his/her asthma triggers are and how to avoid them.

  Suggested online resources for educating students about asthma:

  - CDC provides information and resources tailored for children with asthma and their parents:
    - For students: CDC – Asthma – Kids (https://www.cdc.gov/asthma/children.htm)
    - For parents of students with asthma: CDC – Asthma-Parents (https://www.cdc.gov/asthma/parents.html)
  - Interactive games and videos to help students learn about managing their asthma: (http://www.aaaai.org/conditions-and-treatments/just-for-kids)
  - American Academy of Asthma, Allergy & Immunology – Just for Kids (https://catalog.nhlbi.nih.gov/)
  - For students to learn about managing their asthma while engaging in physical activity at school: http://www.nhlbi.nih.gov/health/resources/lung/asthma-physical-activity

- Be encouraged to communicate any symptoms promptly to school personnel along with parents and guardians.
- Follow instructions from his/her private care health provider. This may include carrying a copy of his/her asthma care plan if the student is able to carry and use their own medication(s) independently.
- Follow their Asthma Action Plan as able.
- Be educated about the medications he/she takes and how to correctly take them.
- Be educated in how to clean and care for inhaled respiratory medication devices if independently managing.

Parents/Guardians

Parents/guardians play an integral role in assisting their child and are the primary advocate for their child. When their child is diagnosed with asthma, it is important that the parents/guardians communicate with both the private health care provider and the school.

Due to the various laws that govern the confidentiality of information, private health care providers and other specialists need to be aware that while they are governed by HIPAA (Health Insurance Portability and Accountability Act), districts are governed by FERPA. In order to send information to the district regarding the student, the health care provider will need parent/guardian consent. Likewise, a district must require parent/guardian consent in order to release information to the health care provider. Further information on how these laws interact is available at: http://www2.ed.gov/policy/gen/guid/fpco/doc/ferpa-hipaa-guidance.pdf.

It is recommended that parents/guardians:

- Provide any forms and written orders (including FERPA and HIPAA consent forms as noted above) from the private health care provider to the school in a timely manner as they are updated, and/or before or at the start of each new school year.
- Obtain an Asthma Action Plan from the private health care provider. Ideally, the parents/guardians should participate in the development of an Asthma Action Plan with the school and/or private health care provider.
- Provide the prescribed medication(s) and asthma device(s) (peak flow meter, spacers or valved-holding chambers) for use at school. Ensure that the medication is not expired and replace when needed.
- Be familiar with any school or district asthma policies or protocols and ask questions when clarification is needed.
- Schedule a meeting at the beginning of the school year with the school nurse, teacher and/or principal to review the Asthma Action Plan and other aspects of their child's needs at school, as needed.
- Monitor your child's asthma symptoms at home and maintain communication with the school. Notify the school (specifically the school health office) of any changes in peak flow meter readings, medication changes, hospitalizations, and/or ED visits due to asthma, or other concerns as necessary.
- Report concerns to your child's private health care provider.
- Provide the school with multiple means by which they can be contacted (e.g., cell phone number, work number, e-mail, etc.) and update as needed.
- Schedule regular checkups for your child's asthma with their private health care provider and when recommended by school health personnel. Where appropriate, ask parents/guardians to sign a FERPA release in order for district staff to provide information regarding the student's progress to the private health care provider.

Private Health Care Providers

Private health care providers, including school-based health center personnel, should work closely with school personnel and families to ensure everyone understands each student's asthma needs, the potential impact on his/her health and wellness, and how best to meet the needs of students with asthma.

Due to the various laws that govern the confidentiality of information, private health care providers and other specialists need to be aware that while they are governed by HIPAA, school districts are governed by FERPA. In order to send information to the district regarding the student, the private health care provider will need parent/guardian consent. Likewise, a district requires parental/guardian consent in order to release information to the private health care provider. Further information on how these laws interact is available at: http://www2.ed.gov/policy/gen/guid/fpco/doc/ferpa-hipaa-guidance.pdf.

The private health care provider should:

- Report the student's asthma diagnosis on the student's health forms and provide instructions for managing the student's condition.
- Provide medication orders, including duplicate MDIs, spacers, etc. for use at home and school, and communicate with the school nurse or medical director to clarify orders in a timely manner.
- Assist the parent/guardian in providing a spare respiratory "quick-relief" inhaler to the school with the required forms – particularly if the health insurance company does not cover multiple devices.
- Provide a written, signed order to the district within 48 hours of giving a verbal order to the school nurse.
- Develop the student's Asthma Action Plan in partnership with the student and student's parents/guardians, as well as with the school nurse and other key school personnel as warranted.
- Schedule clinical assessments to review the effectiveness of the student's asthma management on a regular basis consistent with the degree of symptom control and the severity of the condition.
- Communicate with school personnel as needed regarding a student's asthma management at school.
- Promote the student's full participation in school physical activities.
- Provide orders authorizing the use of the school's stock albuterol as necessary if the school provides stock albuterol.

District and/or School Building Administrators

The school administrator should ensure that the district's policies on asthma management are in place, reviewed and re-evaluated periodically, and followed by staff.

Administrators should:

- Arrange for professional development sessions regarding asthma management for staff (including substitute nurses, school custodians, bus drivers, school lunch personnel, recess monitors, etc.) and/or parent meetings, which include the following:
  - How to recognize common asthma triggers;
  - Steps to take to mitigate or prevent exposure to asthma triggers;
  - How to recognize symptoms of asthma; and
  - How to respond to an asthma emergency, following the student's Emergency Care Plan.
- Ensure that teachers or other school personnel promptly send students experiencing asthma symptoms to the school nurse with an escort (if available) for assessment and treatment, or as stated in the student's Asthma Action Plan.
- Invite parent/guardian participation in determining their child's needs at school and in developing or reviewing the student's Asthma Action Plan.
- Ask a parent/guardian to sign FERPA release form as needed in order for district staff to provide information regarding the student's progress to the private health care provider.
- Provide emergency communication devices for school activities and transportation.
- Provide and review with district staff district policies and protocols for emergency care and transport of students experiencing a severe asthma exacerbation or attack.
- Develop protocols for the management of asthma exacerbations and include them in the Building Emergency Plan and Procedures. Plans should be modifiable for individual students.
- Assist and support the school team in prevention, care, and management of students with asthma.
- Set standards for overall building maintenance, such as but not limited to humidity, mold and dust control, and ventilation. Ideally, identify staff to lead an indoor air quality (IAQ) program to identify, assess, and resolve IAQ issues that can worsen asthma.
- Develop district/building level animal (including service animals) protocols in alignment with student conditions (i.e., asthma, allergies, etc.). Include advanced notice if an animal will be present in a classroom.
- Enforce laws regarding no-smoking, no-idling, and integrated pest management to reduce pesticide use.
- Know the laws pertaining to students who have asthma and be proactive in following them.

District/School Medical Director

The district medical director, who is a licensed physician or nurse practitioner, plays a very important role in setting policies and procedures related to the provision of school health services in public schools.

The medical director should:

- Collaborate with district administration in developing asthma management practices, policy, protocols, and procedures.
- Assist in developing student Asthma Action Plans as necessary.
- Assist district staff by acting as a liaison to the student's private health care provider and contacting that private health care provider as necessary to discuss or clarify orders and plan of care.
- Attend 504 (see page 37), Committee on Special Education (CSE) and Committee on Preschool Special Education (CPSE) meetings when requested by 504 or CSE/CPSE director.
- Survey and make necessary recommendations concerning the health and safety aspects of school facilities and the provision of health information.
- Participate in professional development activities as needed to maintain a knowledge base and keep practice current.
- Provide professional development for staff on asthma and allergies at the request of the district.

School Nurse

The school nurse (RN) is often the person who communicates with the private health care provider, district/school medical director, parent/guardian, and district staff. Often, the school nurse is the district staff member who collects written documentation and orders from the private health care provider. The school nurse also plays an integral role in assessing and treating students' responses to asthma as necessary. Additionally, the school nurse assesses the overall management of the student with asthma and can alert the parent/guardian and private health care provider of the need for adjustments to the student's asthma management.

The school nurse should:

- Assess students with asthma as necessary.
- Administer prescribed medication as ordered. Monitor medication expiration dates and counts to ensure medication is always available. Notify parents/guardians in advance when the medication will soon expire or is running low.
- Notify parents/guardians when a student is experiencing frequent asthma symptoms and recurrent use of quick-relief medications.
- Train unlicensed personnel to assist a supervised student to use/administer their own medications.
- Call for emergency transport to the nearest hospital emergency room per district policy if a student is experiencing severe respiratory distress.
- Assist in developing and/or updating the student's Asthma Action Plan in partnership with the student and student's parents/guardians and the private health care provider.
- Develop the Emergency Care Plan and educate staff on how to use it in the nurse's absence.
- Consider temporary modification of a student's activities and notify the parent/guardian when he/she:
  - Is recovering from a recent asthma exacerbation;
  - Has a cold or flu;
  - Has increased allergy symptoms (such as an itchy or a runny nose); or
  - Has a peak flow number below the student's normal range.
- Educate students and staff on asthma management and prevention, including mitigating environmental triggers.

Teachers and Other School Personnel

Teachers and other school personnel will likely be the staff who have the most contact with a student at the school. It is important that such personnel are well educated in the signs and symptoms of asthma that warrant the need for medication and/or assistance. Additionally, teachers can assist in the prevention of asthma exacerbations by being aware of asthma triggers and minimizing student exposure to such triggers when possible.

Teachers and other school personnel should:

- Review the Emergency Care Plan of any of your students with asthma. If a student is experiencing asthma symptoms, follow the steps outlined in the Emergency Care Plan *Reminder: If a student needs to go to the school health office always send them with an escort.* Notify the school nurse and the student's parent/guardian if student frequently expresses a desire to either not participate, or states he/she is unable to do an activity due to the student's respiratory status.
- Participate in training to ensure the ability to handle every day and emergency care. This training should include:
  - How to recognize common asthma triggers;
  - Steps to take to mitigate or prevent exposure to asthma triggers;
  - How to recognize symptoms of asthma;
  - How to respond to an asthma emergency, following the student's Emergency Care Plan.
- Districts should allow student teachers, aides, and substitute teachers to be informed of a student's asthma diagnosis and where a student's Emergency Care Plan is located.
- Reinforce school guidelines to help identify students with asthma who are being bullied and teased to eliminate harassment of students.
- Check the Air Quality Index and consider moving an outdoor activity indoors when air pollution or pollen levels are high, or the weather is cold.[2]
- When feasible, use low-odor emitting products for art, science, and other instructional use.
- Minimize eating in the classroom to reduce pests. Food stored in the classroom should be in sealed containers. Clean up spills right away. For large spills, call maintenance or custodial staff.
- Reduce classroom clutter and store classroom materials in covered bins to make cleaning easier.
- Keep air vents clear of furniture, papers, books, and other items.
- Report unusual odors, mold, moisture problems, or other environmental concerns to maintenance staff right away.
- Help students who have asthma participate fully and safely in physical activity: limit, modify, relocate, or stop activity as indicated by student's current asthma status in accordance with their Emergency Care Plan, or as directed by school health personnel.
- Physical education teachers and coaches should be aware of students with asthma in their class, and be prepared to follow each student's Emergency Care Plan.

Winning with Asthma

A free online program for coaches, referees, and PE teachers to learn more about asthma, how it affects athletes, and how they can support athletes with asthma is available at: http://www.winningwithasthma.org/

Disclaimer: This program was developed by the Minnesota Department of Health Asthma Program and the Utah Department of Health Asthma Program as a resource for coaches, referees, and PE teachers. Any actions taken by school personnel should be in accordance with New York State laws and regulations.

Maintenance and Custodial Staff

School maintenance and custodial staff may have contact with a student with asthma at the school. It is important that such personnel are well educated in the signs and symptoms of asthma that warrant the need for assistance. School maintenance staff can also impact the exposure of asthma triggers in the school.

School maintenance personnel should:

- Work with the school administration to identify and address air quality issues and other environmental concerns in and around the building.
- Follow district's green cleaning protocols.
- Mop and damp dust often. Clean mops and dust cloths after each use.
- Ensure compliance with district's integrated pest management program.
- Follow district/building policies and procedures for promptly reporting and handling cases of hazardous chemical exposure or air and water quality problems.
- Follow district/building policies and procedures in scheduling building repairs, renovations, or cleaning to avoid exposing students and staff to fumes, dust, or other irritants (e.g., schedule painting and major repairs during long vacations or summer break when possible). Partner with administrators, school personnel, and community members on a school indoor air quality (IAQ).[2]
- IAQ team to develop and implement a comprehensive IAQ program, such as EPA's IAQ Tools for Schools.
- Follow district/school's policy and procedures for calling 9-1-1 or local emergency services during an emergency.

Transportation Personnel

School transportation personnel should be informed of any students with health conditions that may need intervention while on the bus. It is important that such personnel are well educated in the signs and symptoms of asthma that warrant the need for assistance.

Transportation personnel should:

- Be given a copy of the Emergency Care Plan for each student on their bus with a health condition.
- Be educated on asthma signs and symptoms requiring intervention according to the student's emergency care plan. They should not hesitate to call for help in accordance with the district or school policy. Contact school health personnel for questions about the Emergency Care Plan.
- Follow district's green cleaning policies and protocols, with special attention to cleaning of seats and handrails.
- Have communication devices to contact district personnel as needed.
- Watch for signs of bullying or exclusion of students, including those with asthma and report such to the administrator.
- Follow district policy and procedure for transporting medications to and from school.
- Follow NYSED guidance for oxygen on the bus.*
- Follow district policy related to no idling.**
- Follow district/school's policy and procedures for calling 9-1-1 or local emergency service during an emergency.

**Schools should refer to available at: NYSED's Guidance for Transporting Oxygen on School Buses (http://www.p12.nysed.gov/schoolbus/documents/pdf/transporting_oxygen_on_school_buses.pdf) for details on the requirements for transporting oxygen on school buses.*

***More information on NYSED's School Bus Idling Regulation is available at: Reducing School Bus Idling – Requirements and Notice Materials for School Districts (http://www.p12.nysed.gov/schoolbus/anti-idling/home.html).*

Steps to Follow for an Asthma Attack in the School Setting

A poster that provides guidance on what to do when a student has an asthma attack on school grounds is available on the next page (page 29) and at: https://www.health.ny.gov/publications/5162.pdf

Steps to Follow for an **ASTHMA ATTACK** in the School Setting

If a student has excessive coughing, wheezing, shortness of breath or chest tightness, they may be having an asthma attack.

1 STOP ACTIVITY

- Help the student to an upright position. Do not have them recline or lie down.
- Ask: "Are you having trouble breathing?"
- Ask: "Do you have asthma?"
- Ask: "Do you have a quick-relief inhaler?"

2 STAY CALM

- Encourage use of a quick-relief inhaler, if available.
- If a quick-relief medication was used, the school nurse should assess the student, if possible. Parent or guardian should be notified.
- If the quick-relief medication does not work, or if the student doesn't have a quick-relief inhaler, **get help.**

3 GET HELP

- If the student can walk without difficulty, send them to the school nurse, accompanied by another person. **Never send the student alone.**

OR

- Call the school nurse to the classroom or the gym.

OR

- **CALL 911** (or your local emergency number) **if the student has ANY of these signs of an asthma emergency:**
  - Inability to breathe
  - Struggling to breathe
  - Chest or neck are pulled in or sucked in with each breath
  - Trouble walking or talking
  - Nostrils open wide
  - Lips or fingertips are blue

WRITE IN LOCAL EMERGENCY NUMBER HERE

Always notify parent or guardian.

NEW YORK STATE | Department of Health

5162 9/17

IV. Is Your School Asthma Friendly?

Creating an asthma-friendly school will improve the learning environment, reduce student absences, and enhance student and staff productivity. An asthma-friendly environment will reduce the occurrence of symptoms and allow students to better control their asthma. Asthma-friendly schools offer:

- Appropriate school health services for students with asthma, ensuring that students take their medicines and learn to use them when appropriate;
- Asthma education for students with asthma and awareness programs for students, school personnel, parents, and families;
- Safe and healthy school environment to reduce asthma triggers; and
- Safe and enjoyable physical education and activities for students with asthma.[17]

One in five Americans occupy a school building each day; the majority of whom are students. Identifying environmental asthma triggers on school grounds is important in maintaining an asthma-friendly school. Environmental triggers can include:

- Cockroaches and other pests
- Mold resulting from excess moisture in the building
- Dander from animals in the classroom and dander brought in on clothing from animals at home
- Secondhand smoke
- Dust mites
- Unvented stoves or heaters
- Chemicals, cleaning agents, perfumes, essential oils, pesticides, and sprays
- Bus exhaust[17]

The “How Asthma-Friendly Is Your School?” questionnaire is a tool to help parents/guardians and school personnel determine the ability of their school to assist students with asthma. The questionnaire helps identify potential sources of problems in schools that could make asthma management difficult, along with actions schools can take to support students who have asthma. This questionnaire may also help in developing school policies and create a more asthma-friendly environment. See page 31.

How Asthma-Friendly Is Your School?

Students who have asthma need proper support at school to keep their asthma under control and be fully active. Use this checklist to find out how well your school serves students who have asthma:

- ☐ Yes ☐ No Are the school buildings and grounds **free of tobacco smoke** at all times?
- ☐ Yes ☐ No Are all school buses, vans, and trucks free of tobacco smoke?
- ☐ Yes ☐ No Are all school events, like field trips and athletic events (both "at home" and "away") free from tobacco smoke?
- ☐ Yes ☐ No Does your school have a policy or rule that allows students to **carry and use their own asthma medicines**?
- ☐ Yes ☐ No If some students do not carry their asthma medicines, do they have quick and easy access to their medicines?
- ☐ Yes ☐ No Does your school have a **written emergency plan** for teachers and other staff to follow to take care of a student who has an asthma exacerbation?
- ☐ Yes ☐ No In an emergency, such as a fire, weather event, or lockdown, or if a student forgets his or her medicine, does your school have standing orders and quick-relief medicines for students to use?
- ☐ Yes ☐ No Do all students who have asthma have **updated Asthma Action Plans** on file at the school? (An Asthma Action Plan is a written plan from the student's doctor to help manage asthma and prevent asthma exacerbations.)
- ☐ Yes ☐ No Is there a **school nurse or other school health staff** in your school building during the school day?
- ☐ Yes ☐ No Does a school nurse or other school health staff identify, assess, and monitor students who have asthma at your school?
- ☐ Yes ☐ No Does a school nurse or other school health staff help students with their medicines and help them to participate fully in exercise and other physical activity, including physical education, sports, recess, and field trips?
- ☐ Yes ☐ No If a school nurse or other school health staff is not full-time in your school, is a nurse readily and routinely available to write and review plans and give the school guidance?
- ☐ Yes ☐ No Does an asthma education expert **teach all school personnel about asthma**, Asthma Action Plans, and asthma medicines?
- ☐ Yes ☐ No Is asthma information incorporated into health, science, first aid, and other classes as appropriate?
- ☐ Yes ☐ No Can students who have asthma **participate fully and safely in a range of exercise and other physical activity**, including physical education, sports, recess, and field trips?
- ☐ Yes ☐ No Are students' quick-relief medicines nearby before, during, and after exercise and other physical activity?
- ☐ Yes ☐ No Can students who have asthma choose a physical activity that is different from others in the class when it is medically necessary?
- ☐ Yes ☐ No Can students who have asthma choose another activity without fear of being ridiculed or receiving reduced grades?
- ☐ Yes ☐ No Does the school help to **reduce or prevent students' contact with allergens or irritants – indoors and outdoors** – that can make their asthma worse? Are any of the following are present?
  - Cockroach droppings
  - Excessive dust and/or carpets, pillows, cloth-covered or upholstered furniture, or stuffed toys that harbor dust mites (tiny bugs too small to see)
  - Mold or persistent moisture
  - Pets with fur or hair
  - Strong odors or sprays, such as paint, perfume, bug spray, and cleaning products
- ☐ Yes ☐ No Does your school have a no-idling policy for vehicles on school grounds, such as school buses and carpools?
- ☐ Yes ☐ No Does your school monitor daily local Air Quality Index (AQI) information to help reduce students' exposure to unhealthy air quality?
- ☐ Yes ☐ No Does your school partner with parents and private health care providers to address students' asthma needs?
- ☐ Yes ☐ No Does your school work with an asthma specialist in the community?

If the answer to any question is "no," then it may be harder for students to have good control of their asthma. Uncontrolled asthma can hinder a student's attendance, participation, and progress in school. School personnel, private health care providers, and families should work together to make schools more asthma-friendly to promote student health and education.

Source: National Heart, Lung, and Blood Institute; National Institutes of Health; U.S. Department of Health and Human Services

School Health Index

The School Health Index (SHI) (https://www.cdc.gov/healthyschools/shi/index.htm) is a free self-assessment and planning guide developed by the Centers for Disease Control and Prevention in partnership with school personnel, parents, and national non-governmental health and education agencies. The self-assessment and planning guide will help schools evaluate and improve their health programs, which will benefit students and staff.[17] SHI will enable school personnel to:

- Identify the school's policies and programs strengths and weaknesses for promoting health and safety;
- Develop an action plan for improving student health and safety;
- Foster collaboration among teachers, parents, students, and community in improving school policies, programs and services.

The SHI requires teams from the school to complete two activities that are encompassed in the guide: a *self-assessment process* and a *planning for improvement process*.

- The self-assessment process requires those involved in the SHI to come together to discuss what the school is currently doing to promote good health and identify strengths and weaknesses. The SHI provides the ability to assess the extent to which the school implements the types of policies and practices recommended by the CDC in its guidelines related to school health, and safety.[17]
- The planning for improvement process enables those involved to identify recommended actions the school can take to enhance its performance in areas that received low scores. The SHI provides guidance through a simple process for prioritizing the various recommendations. This step will help school personnel decide on a selection of actions to implement during the school year. The SHI will also inform the School Health Improvement Plan that lists the steps to take for implementing actions.[18]
- The results from using the SHI can help school personnel and administration include health promotion activities in overall School Improvement Plan.

Indoor Air Quality: Reducing Risk

Poor air quality within and around school buildings can have adverse effects on students' health. Poor indoor air quality (IAQ) can aggravate asthma and other respiratory illnesses.[20] The most common allergens in the school environment are dust mites, pest and molds, and diesel exhaust from buses. Failing to develop and implement IAQ programs in schools may result in:

- Accelerating deterioration and reduced efficiency of the school's physical plant and equipment[20]
- Increased potential for long-term health problems among students and staff[20]
- Costly repairs if maintenance and proactive measures are deferred
- Increased student and staff absences[20]
- Increased likelihood of school being closed temporarily[20]

Having a strong IAQ management program in schools will not only benefit students with asthma, but all students and staff. There are many resources available in New York State to help schools identify and fix indoor air quality problems that may affect students with asthma.

For guidance and tools to help resolve current and prevent future IAQ problems, access the Environmental Protection IAQ Tools for School Action Kit (https://www.epa.gov/sites/production/files/2014-08/documents/checklist_log.pdf).

Webinars encompassing assorted topics on Indoor Air Quality in Schools are available through the U.S. Environmental Protection Agency (EPA) website: Web Conferences and Webinars for Indoor Air Quality in Schools (https://www.epa.gov/iaq-schools/web-conferences-and-webinars-indoor-air-quality-schools).

Air Quality Index (AQI)

The Air Quality Index (AQI) is an index for reporting daily air quality. It tells one how clean or polluted the air is, and what associated health effects might be of concern. The AQI focuses on health effects one may experience within a few hours or days after breathing polluted air. Children and adolescents are at greater health risk due to poor air quality because their lungs are still developing and they typically engage in more outdoor activities. Poor air quality also affects individuals with heart and lung conditions.[21]

The AQI, like an air quality "thermometer," translates daily air pollution concentrations into a number on a scale between 0 and 500. An AQI of 101 to 150 is "unhealthy for sensitive groups," which includes children and adolescents with asthma.[10]

For information on AQI in New York State visit: Air Quality Index (AQI) Forecast and Current Observations for New York State (http://www.dec.ny.gov/chemical/34985.html) and Air Now – National AQI Index (https://airnow.gov/).

New York State Department of Environmental Conservation (NYSDEC) provides an up-to-date AQI forecast based on region. This is a useful tool when planning an outside activity, and determining if an accommodation will need to be made for students with asthma or if the planned activity should be changed.

For more information or access to the daily AQI forecast visit: Today's Air Quality Index (AQI) Forecast for New York State (http://www.dec.ny.gov/cfmx/extapps/aqi/aqi_forecast.cfm?CFID=2346454&CFTOKEN= 68380486&jsessionid= 6FD098A856AE1ED2B4AABCA22F545871.+p19).

Green Cleaning Requirements for Schools

The chemicals found in many cleaning products can have adverse health effects on children, especially those who have asthma. Chemicals such as volatile organic compounds (VOC) have been shown to elicit asthma symptoms, cause upper respiratory irritation, and nasal congestion. Using green cleaning products and practices protects students who may be most vulnerable to cleaning chemicals, which can reduce absences, and improve the school environment.[22]

New York Education Law §409-i: Procurement and Use of Environmentally-Sensitive Cleaning and Maintenance Products

The Education Law requires that all public and nonpublic elementary and secondary schools procure and use environmentally sensitive cleaning and maintenance products in accordance with guidelines established by the Commissioners of the New York State Department of Environmental Conservation, New York State Education Department and New York State Office of General Services. Environmentally sensitive cleaning and maintenance products are cleaning products having properties that minimize potential impacts to human health and the environment while maintaining effective maintenance for the protection of public health and safety. The primary focus of this law is students' health, and reducing potentially harmful chemicals and substances used in the cleaning and maintenance of school facilities.[23]

For information on establishing a Green Cleaning Program and a list of New York State approved Green Cleaning Products, as well as additional information please visit the Office of General Services Procurement Services Green Cleaning Program.

Recommended Cleaning Practices

1. Read and follow product directions
2. Use only the amount of chemical needed
3. Clean when the building is unoccupied
4. Use proper equipment
5. Train employees to use product Safety Data Sheets (SDSs) and label for use, storage and disposal
6. Manage and dispose of cleaning products safely and in accordance with manufacturer instructions.[24]

Environmental Tobacco Smoke

Environmental tobacco smoke, also known as secondhand smoke, is the smoke given off from cigarette, cigar or pipe, and smoke exhaled by the smoker. Environmental tobacco smoke has adverse health effects on students, particularly young students and students diagnosed with asthma. Students with asthma who are exposed to environmental tobacco smoke through secondhand smoke, as asthma trigger, are at increased risk for asthma exacerbations. Secondhand smoke is a risk factor for new cases of asthma among preschool-aged children.[25] Fortunately, there are state and federal laws that prevent tobacco use in and on school grounds in New York State.

20, United States Code (U.S.C.), Chapter 70, §7183: Nonsmoking Policy for Children's Services

After January 8, 2002, no person shall permit smoking within any indoor facility owned or leased or contracted for, and utilized, by such person for provision of routine or regular kindergarten, elementary, or secondary education or library services to children.[26]

New York State Public Health Law, Article 13-E, §§1399-n, 1399-o and 1399-p: Clean Indoor Air Act. Amended by New York State Pro-Kids Act of 1994.

Prohibits smoking in all indoor places of employment which definition includes "school grounds" defined as "any building, structure, and surrounding outdoor grounds contained within a public or private preschool, nursery school, elementary or secondary school's legally defined property boundaries as registered in a county clerk's office, and any vehicles used to transport students or school personnel. The law also requires "No Smoking" signs to be displayed in smoking prohibited areas.

New York State Law State Education Law Article 9 §409(2)

Notwithstanding the provisions of any other law, rule or regulation, tobacco use shall not be permitted and no person shall use tobacco on school grounds. "School grounds" mean any building, structure and surrounding outdoor grounds, including entrances or exits, contained within a public or private preschool, nursery school, elementary or secondary school's legally defined property boundaries as registered in a county clerk's office.[27]

Integrated Pest Management

Pests such as rodents and insects can create health problems for students with an asthma diagnosis because they each have properties that can trigger asthma exacerbations. Additionally, pests can cause structural damages to school grounds. They may be found in cafeterias, classrooms, lockers, gyms, dumpsters, exterior conduits, and other places throughout school grounds.[28]

Integrated Pest Management (IPM) is an approach for managing, preventing, and suppressing pests with minimal impact on human health, the environment, and non-target organisms.[29] IPM incorporates all reasonable measures by properly identifying, monitoring, and controlling pests through the use of cultural, physical, biological, and chemical control methods to reduce pests to acceptable levels. Successful IPM programs use a four-tiered implementation approach: (1) identifying pests and monitor progress; (2) determine the pest population level; (3) remove conditions that attract pests; and (4) control pests. Adopting IPM will help reduce students' exposure to both pests and pesticides.

7 United States Code (U.S.C.), Chapter 6, §136r–1: Integrated Pest Management

The Secretary of Agriculture, in cooperation with the Administrator, shall implement research, demonstration, and education programs to support the adoption of Integrated Pest Management (IPM). Additionally, part 155 of the Regulations of the Commissioner of Education require the establishment of a least-toxic approach to IPM (Title 8 of the New York Code of Rules and Regulations (NYCRR)) §155.4(d)(2)).

New York State Environmental Conservation Law, Article 33, Title 9 and New York State Education Law, Article 9, §409-h

In accordance with New York State Environmental Conservation Law, only a licensed pesticide applicator may apply pesticide products. If the school district has licensed applicators on staff, the district must be registered with the NYSDEC. The school shall provide written notification to all staff and persons in parental relation at the beginning of each school year or summer school session. Each school shall establish and maintain a list of staff and persons in parental relation who have requested written notification 48 hours in advance of pesticide applications at relevant facilities. Any public or nonpublic elementary or secondary school that decides to use a pesticide product as a last resort in addressing a pest problem, must comply with the School Pesticide Neighbor Notification Law (§409-h of the Education Law).

The School Pesticide Neighbor Notification Law requires and outlines an annual notification process for all faculty, staff, and persons in parental relation in public and nonpublic elementary and secondary schools. The law covers all instructional and administrative buildings and grounds, including playgrounds, athletic fields, and bus garages. A written notice must be provided to all students, persons in parental relation, and staff at the beginning of each school year with a statement that pesticide applications may take place during the upcoming school year. This notice must include the name of the school representative to contact for further information. The basics of the school IPM program should also be explained at this time. The notice must offer individuals an opportunity to register to receive a written notification at least forty-eight hours prior to pesticide applications, including instructions on how to register with the school to be on the notification list. Individuals may request that their name be added to the registry at any point during the school year.

More information on IPM is available from the following:

- NYSED – School Integrated Pest Management & Neighbor Notification (http://www.p12.nysed.gov/facplan/IPM/IPMNeighborNotificationDocument.htm)
- Cornell University IPM Resources for schools and daycare (https://nysipm.cornell.edu/community/schools-and-daycare-centers)
- U.S. Environmental Protection Agency – Information on Pests in Schools and Their Control (https://www.epa.gov/managing-pests-schools/information-pests-schools-and-their-control)

Health and Safety Committees

In accordance with Commissioner's regulations (8 New York Code of Rules and Regulations (NYCRR))§155.4(d)(1) Health and Safety Committees are required in all districts. Health and Safety committees are comprised of representatives from districts officials, district staff, bargaining units and parents. The Health and Safety Committee is mandated to address health and safety concerns in occupied buildings of the school district.

More information on the Health and Safety committee is available at: NYSED – Guidelines for the Health and Safety Committee (http://www.p12.nysed.gov/facplan/articles/GuidelinesfortheHealthandSafetyCommittee.html).

V. Resources to Learn More About Asthma Management

Allergy Home
(https://www.allergyhome.org/)

Allergy & Asthma Network
(http://www.allergyasthmanetwork.org/)

American Academy of Allergy Asthma & Immunology
(https://www.aaaai.org/conditions-and-treatments/asthma)

American Lung Association
(http://www.lung.org/)

American School Health Association
(http://www.ashaweb.org/)

Asthma and Allergy Foundation of America
(http://www.aafa.org/)

Asthma Community Network
(http://www.asthmacommunitynetwork.org/)

Centers for Disease Control and Prevention
(https://www.cdc.gov/asthma/)

National Association of School Nurses
(https://www.nasn.org/home)

National Environmental Education Foundation: Asthma
(https://www.neefusa.org/health-wellness)

National Heart, Lung and Blood Institute

- Asthma
  https://www.nhlbi.nih.gov/health-topics/asthma
- National Asthma Control Initiative (NACI)
  https://www.nhlbi.nih.gov/health-pro/resources/lung/naci/
- National Asthma Education and Prevention Program (NAEPP) Guidelines for the Diagnosis and Management of Asthma
  https://www.nhlbi.nih.gov/health-topics/guidelines-for-diagnosis-management-of-asthma

New York State Association of School Nurses
(http://nysasn.org/)

New York State Center for School Health (NYSCSH)
(https://www.schoolhealthny.com/)

New York State Department of Health – Asthma Control Program
(https://www.health.ny.gov/diseases/asthma/)

New York State Education Department – School Health Services
(http://www.p12.nysed.gov/sss/schoolhealth/schoolhealthservices/)

The Law Library of Congress
(http://www.loc.gov/law/)

United States Department of Education – Office of Civil Rights
(https://www2.ed.gov/about/offices/list/ocr/index.html)

United States Environmental Protection Agency
(https://www.epa.gov/schools)

Indoor Environments Division

- Indoor Air Quality tools for schools
  (https://www.epa.gov/iaq-schools)
- Managing Asthma in the School Environment
  (https://www.epa.gov/iaq-schools/managing-asthma-school-environment)
- Integrated Pest Management for Schools
  (https://www.epa.gov/managing-pests-schools)
- Remediation in Schools and Commercial Buildings
  (https://www.epa.gov/mold/mold-remediation-schools-and-commercial-buildings-guide)

Federal Laws Pertaining to Students with Disabilities and Confidentiality of Education and Health Records

It's important that your asthma management program consider federal, state, district, and local laws and requirements. Schools should be aware of and understand the school's responsibilities under these laws. There are three federal laws that provide protection to students with asthma at school, ensuring that they have an equal opportunity to participate and succeed: Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act (ADA) and the Individuals with Disabilities Education Act (IDEA).

Section 504 Rehabilitation Act of 1973

Section 504 regulations require a school district to provide a "free appropriate public education" (FAPE) to each qualified student with a disability who is in the school district's jurisdiction, regardless of the nature or severity of the disability. Under Section 504, FAPE consists of the provision of regular or special education and related aids and services designed to meet the student's individual educational needs as adequately as the needs of nondisabled students are met. See the following for more information, U.S. Department of Education Office of Civil Rights (https://www2.ed.gov/about/offices/list/ocr/504faq.html).

The Americans with Disabilities Act of 1990

Title II of the Americans with Disabilities Act of 1990 (ADA) prohibits discrimination based on disability by public entities, regardless of whether they receive federal financial assistance.[30] For More information, see U.S. DOE Office of Civil Rights – Overview of Disability Discrimination Laws (https://www2.ed.gov/policy/rights/guid/ocr/disabilityoverview.html).

Individuals with Disabilities Education Improvement Act of 2004

The Individuals with Disabilities Education Act (IDEA) is a law ensuring a Free Appropriate Public Education (FAPE) to children with disabilities whose disability adversely affects the student's academic performance necessitating a need for special education and related services. IDEA governs how states and public agencies provide early intervention, special education and related services to more than 6.5 million eligible infants, toddlers, children and youth with disabilities. Additional information about the Individuals with Disabilities Education Act is available at U.S. Department of Education – IDEA (https://idea.ed.gov/).

Family Education Rights and Privacy Act

The Family Educational Rights and Privacy Act (FERPA) (20 U.S.C. §1232g; 34 CFR Part 99) is a Federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education.

For more information, see U.S. DOE – Family Educational Rights and Privacy Act (https://www2.ed.gov/policy/gen/guid/fpco/ferpa/index.html).

Health Insurance Portability and Accountability Act (HIPAA)

The HIPAA Privacy Rule establishes national standards to protect individuals' medical records and other personal health information and applies to health plans, health care clearinghouses, and those private health care providers that conduct certain health care transactions electronically. The Rule requires appropriate safeguards to protect the privacy of personal health information, and sets limits and conditions on the uses and disclosures that may be made of such information without patient authorization. The Rule also gives patients' rights over their health information, including rights to examine and obtain a copy of their health records, and to request corrections.

A helpful document on how HIPAA and FERPA interact and apply to schools is Joint Guidance on the Application of the Family Educational Rights and Privacy Act and the Health Insurance Portability and Accountability Act of 1996 on Student Health Records (https://www2.ed.gov/policy/gen/guid/fpco/doc/ferpa-hipaa-guidance.pdf).

Family Medical Leave Act of 1993

The Family Medical Leave Act of 1993 (FMLA) may provide protection to parents/guardians who need time off from work to care for a child with asthma. More about FMLA and how it applies to care for a child with asthma is available through the United States Department of Labor at 1-866-4-USA-DOL or online at: U.S. Department of Labor – Family Medical Leave (https://www.dol.gov/general/topic/benefits-leave/fmla).

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Glossary of Terms

Air Quality Index (AQI)
An index for reporting daily air quality. It provides information on how clean or polluted your air is and its associated health effects.

Allergen
Typically a harmless substance capable of triggering an immune system response and results in an allergic reaction.

Allergy
A chronic condition associated with a high sensitivity reaction to an ordinarily harmless substance called an allergen.

Anaphylaxis
A life-threatening allergic reaction that often involves swelling, hives, lowered blood pressure and in severe cases, shock, which can be fatal.

Asthma
A lung disease characterized by airway constriction, mucus secretion, and chronic inflammation, resulting in reduced airflow and wheezing, coughing, chest tightness, and difficulty breathing.

Asthma Action Plan (AAP)
A written management plan that you develop *with your doctor* to help control your asthma. The Asthma Action Plan shows necessary daily treatment, such as what kind of medicines to take and when to take them. The plan describes how to control asthma long term AND how to handle worsening asthma, or attacks. It also explains when to call the doctor or go to the emergency room.

Asthma attack
See asthma exacerbation.

Asthma control
The extent to which asthma symptoms and impairments are minimized by medical treatment. Asthma control is categorized into three levels: well controlled, not-well controlled, and poorly controlled.

Asthma episode
See asthma exacerbation

Asthma exacerbation
Also referred to as an asthma attack/asthma episode. It may include coughing, chest tightness, wheezing, and trouble breathing. The attack happens in the body's airways, which are the paths that carry air to the lungs. As the air moves through the lungs, the airways become smaller, like the branches of a tree are smaller than the tree trunk. During an asthma attack, the sides of the airways in the lungs swell and the airways shrink. Less air gets in and out of the lungs, and mucous that the body makes clogs up the airways even more.

Asthma severity
Categorized into four levels: intermittent, mild persistent, moderate persistent, and severe persistent. These four levels help determine the type and level of initial asthma therapy needed.

Asthma trigger
Anything that can cause mild symptoms or an asthma exacerbation. Asthma triggers can be different for each person with asthma.

Corticosteroid
A medication that can be inhaled or taken by mouth that decreases inflammation in the airways of the lungs and prevents asthma exacerbation.

Cough
An act to expel air from the lungs with a sudden sharp sound. There are two types of cough associated with asthma: productive and non-productive cough. A productive cough brings up mucus/phlegm/sputum while a non-productive cough does not.

Cough variant asthma
A form of asthma associated with a persistent nonproductive cough with minimal wheezing or dyspnea. Uncontrolled coughing may interfere with sleep, work, and social activities.

District Medical Director
A physician or nurse practitioner pursuant to Education Law Article 19 section 902 who is the Director of School Health Services that public school districts must employ to oversee their school health services program. Also referred to as the school medical director, school medical office, school physician or school doctor.

Dry powder inhaler (DPI)
A type of inhaler that is breath-activated to deliver medications into the lungs.

Dyspnea
A subjective sensation of difficult or uncomfortable breathing.

Emergency Care Plan (ECP)
Also referred to as an Emergency Action Plan. It is a written plan developed by the school nurse (RN), medical director, or private health care provider. This plan provides specific instructions for school personnel to follow in the absence of a school nurse. This plan provides information about the individual student's condition, symptoms to observe for, and actions to take.

Exercise-induced asthma (EIA)
Asthma triggered by exercise.

Health Information Portability and Accountability Act (HIPAA)
A U.S. law that provides privacy standards to protect patients' medical records and other health information provided to health plans, doctors, hospitals and other health care providers. The school is not a HIPAA covered entity. The HIPAA Privacy Rule only applies to health plans, health care clearinghouses, and those health care providers that transmit health information electronically in connection with certain administrative and financial transactions ("covered transactions"). See 45 CFR §160.102. Covered transactions are those for which the U.S. Department of Health and Human Services has adopted a standard, such as health care claims submitted to a health plan. See the definition of "transaction" at 45 CFR §160.103 and 45 CFR Part 162, Subparts K–R. Thus, even though a school employs school nurses, physicians, psychologists, or other health care providers, the school is not generally a HIPAA covered entity because the health care providers do not engage in any of the covered transactions, such as billing a health plan electronically for their services. It is expected that most elementary and secondary schools fall into this category.

Family Educational Rights and Privacy Act (FERPA)
A Federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education. At the elementary or secondary school level, students' immunization and other health records that are maintained by a school district or individual school, including a school-operated health clinic, that receives funds under any program administered by the U.S. Department of Education are "education records" subject to FERPA, including health and medical records maintained by a school nurse who is employed by or under contract with a school or school district.

Indoor air quality (IAQ)
The air quality within and around buildings and structures, especially as it relates to the health and comfort of its building occupants.

Inflammation
A localized physical condition where a part of the body becomes swollen and often painful due to a reaction to an injury or infection. Individuals with asthma have inflamed airways, specifically the bronchial tubes. During an asthma attack, the muscles that surround the bronchial tubes constrict, narrowing the air passages and making it difficult to breathe.

Inhaler
See metered dose inhaler (MDI)

Irritant
A substance that causes slight inflammation or other discomfort to a body part or organ. Exposure to an irritant can cause inflammation in the airways and therefore trigger and/or aggravate asthma symptoms.

Licensed Practical Nurse (LPN)
An individual licensed pursuant to Article 139 of the Education Law performing tasks and responsibilities within the framework of case finding, health teaching, health counseling and the provision of supportive and restorative care under the direction of a registered professional nurse or licensed physician, dentist or other licensed health care provider.

Long-acting beta-agonist
An asthma medication that stimulates the muscles surrounding the bronchial tubes to relax (bronchodilation), thereby opening the airways.

Metered-dose inhaler (MDI)
A device that sprays a pre-set amount of aerosolized medicine through the mouth to the airways. MDIs are commonly referred to as an inhaler.

Peak flow meter
An asthma management device used to measure a person's ability to push air out of the lungs. Since asthma sometimes changes gradually, peak flow meter readings can alert a person when his/her asthma symptoms are worsening.

Prevalence
A measure of all cases of a disease/condition at a given point of time. The prevalence proportion is the proportion of people in a population that has a disease.

$$\frac{\text{(Number of individuals with disease/condition in given time period)}}{\text{(Population at risk for the same time period)}}$$

Quick-relief medication
Asthma medication that works fast, usually within 15 minutes after administration to control asthma symptoms. It acts to open and help relax the muscles of the airways (bronchodilation) so air can flow through them. SABAs are the most commonly used quick-relief drugs for asthma attacks.

Rescue medicine
See short-acting beta2-agonist (SABA).

School personnel
Any individual employed by the school.

School nurse
A registered professional nurse (RN), licensed pursuant to Education Law, Article 139, including school nurses, school nurse-teachers, school nurse practitioners, or other specialty nurse practitioners employed by the school district or BOCES pursuant to Education Law, §902.

Short-acting beta2-agonist (SABA)
A type of quick-relief medication that provides quick relieve of asthma symptoms. They can also be prescribed to be taken before exercising.

Spacer
A device that attaches to the mouthpiece of an MDI to create space between the mouth and the MDI. The spacer allows for the medicine to break into smaller droplets for easier delivery into the lungs.

Unlicensed school personnel
For the purposes of this guide, unlicensed school personnel are personnel who do not have a professional license, or whose license does not include medication administration within the scope of practice of the profession.

Valved holding chamber (VHC)
A type of spacer that has a one-way valve at the mouthpiece. It traps and holds the medicine giving more time for the student to take a slow, deep breath reducing the amount that settles in the mouth and throat.

Wheezing
Usually a high-pitched whistling sound during breathing. Some wheezes can only be heard with a stethoscope.


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