Toolkit for the Administration of *Epinephrine and Albuterol/Levabuterol* in the School Setting

https://dph.georgia.gov/school-nurse-resources

Georgia Department of Public Health

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Introduction

This tool kit provides the local school system with guidelines in the development and implementation of policies related to stock Epinephrine Auto-Injector (Epi-Pen) and stock Albuterol/Levalbuterol in the school setting. The tool kit specifically addresses:

- Medication administration
- Development of the Emergency Action Plan/Individualized Health Care Plan
- Stock Epinephrine in the School Setting for Treatment of Undiagnosed Severe Allergic Reactions/Anaphylaxis by School Personnel
- Stock Albuterol/Levalbuterol in the School Setting for Treatment of Perceived Respiratory Distress by School Personnel
- Training requirements

Medication Administration Procedures/Guidelines

The following are recommended procedural guidelines that address considerations that schools and school districts may adopt into district procedures. *When feasible*, school nurses assigned to the school should provide oversight of medication administration.

a. Storage of Emergency Medications

Emergency medications should be stored in an unlocked, clearly labeled and readily accessible cabinet or container in the health room during school hours under the general supervision of the school nurse, or in the absence of the school nurse, the principal or the principal's designee who has been trained in the administration of medication.

Emergency medications should be locked before and after regular school day or program hours, except as otherwise determined by a student's Emergency Action Plan.

To promote rapid, life-saving steps in an emergency, emergency medications should not be locked during the school day. While they must not be accessible to any student, they should be kept in a safe, accessible and reasonably secure location that can be properly supervised by a nurse or other authorized, trained staff member.

Epinephrine Storage. According to the manufacturer, epinephrine auto-injectors should be **stored at room temperature** until the marked expiration date, at which time the unit must be replaced. Auto-injectors should not be refrigerated as this could cause the device to malfunction. Auto-injectors should not be exposed to extreme heat, such as in the glove compartment or trunk of a car during the summer and they should not be exposed to direct sunlight. Heat and light shorten the life of the product and can cause the epinephrine to degrade. To be effective, the solution in the auto-injector should be clear and colorless. If the solution is brown, replace the unit immediately.

Albuterol/Levalbuterol Storage. Albuterol/Levalbuterol sulfate inhalation solution should be stored between 20° and 25° C (68° and 77° F). Vials should be protected from light before use, therefore, keep unused vials in the foil pouch. ***Check for color of drug*****:** do not use solution if it is brown or darker than slightly yellow. Do not use if pinkish in color. Do not use if it contains a precipitate (particles in the solution). ***Confirm expiration date:*** do not use after the expiration date printed on the vial. Check with local pharmacists to obtain medications that will remain "in date" for 12-15 months or more.

b. Location of Emergency Medications

The primary consideration for location of emergency medications should be the safety of students. Considerations for making responsible and reasonable decisions about location and safety include:

- general safety standards for handling and storage of medications;
- developmental stage of students;
- competence of the student;
- size of the school building;
- availability of a full time school nurse in the school building;
- availability of communication devices between school personnel (such as teachers, para-professionals) who are inside the building or outside on school grounds and the school nurse;
- school nurse response time from the health office to the classroom;
- preferences and other responsibilities of the teacher;
- preferences of the students and parent; and
- movement of the student within the school building.

c. Administration of Medications

Epinephrine Auto-Injectors. In the absence of a licensed nurse, an epinephrine auto-injector ("epi pen") may be administered by any school employee or agent who has completed training in recognizing the symptoms of anaphylactic shock and the correct method of administering the epinephrine auto-injector. A student may self-administer the epi pen if the school has written statements of authorization on file from the student's physician and from the parents.

Levalbuterol or Albuterol. In the absence of a licensed nurse, albuterol or levalbuterol may be administered by any school employee or agent who has completed training in recognizing the symptoms of respiratory distress and the correct method of administering albuterol or levalbuterol.

d. Training for Medication Administration

Code Section 20-2-776.2 requires that any school employee or agent of a public or private school designated to administer **auto-injectable epinephrine** shall complete an anaphylaxis training program. Such training should be conducted by a nationally recognized organization experienced in training laypersons in emergency health treatment. Training may be conducted online or in person and should cover, at a minimum, the following:

(1) How to recognize signs and symptoms of severe allergic reactions, including anaphylaxis;
(2) Standards and procedures for the storage and administration of auto-injectable epinephrine; and
(3) Emergency follow-up procedures.

Code Section 20-2-776.3 requires that any school employee or agent of a public or private school designated to administer **albuterol/levalbuterol** shall complete a training program. Such training should be conducted by a nationally recognized organization experienced in training laypersons in emergency health treatment. Training may be conducted online or in person and should cover, at a minimum, the following:

(1) How to recognize signs and symptoms of respiratory distress;
(2) Standards and procedures for the storage and administration of albuterol/levalbuterol; and
(3) Emergency follow-up procedures.

The Department strongly recommends that trainings be provided for unlicensed personnel ***at least twice per school year.*** Any individual trained to assist with the administration of emergency medication should be required to maintain a certification in Basic Life Support - CPR.

e. Supervision

When feasible, the licensed school nurse should be responsible for general supervision of administration of medications in the schools to which that nurse is based and/or assigned. This should include, but not be limited to:

- availability on a regularly scheduled basis to: review orders and changes in orders and communicate these to the personnel designated to give medication;
- set up a plan and schedule to ensure medications are administered properly;
- provide training to qualified personnel for schools and other licensed nursing personnel in the administration of medications and assess that the qualified personnel for schools are competent to administer medication;
- provide appropriate follow-up to ensure the administration of medication plan results in desired student outcomes;
- provide consultation by telephone or other means of

telecommunication;
- implementation of policies and procedures regarding all phases of administration of medications;
- periodic review of all documentation pertaining to the administration of medications for students;
- observe competency to administer medications by qualified personnel; and
- periodic review, as needed, with licensed nursing personnel and all qualified personnel for schools regarding the needs of any student receiving medication.

f. Returning to School after an Emergency

Students who have experienced an *acute allergic reaction* or *perceived respiratory distress* at school may need special consideration upon their return to school. The approach taken by the school is dependent upon the severity of the emergency, the student's age and the diagnosis.

Upon return to school, it is strongly recommended that the student be seen by a licensed professional school nurse. The school nurse is responsible for completing an assessment to ensure health care plans, emergency action plans are in place, provider follow-up and other appropriate measures are taken to ensure the health and safety of the student.

In the absence of school nurse, we recommend that the student and parents meet with designated school staff to discuss any perceived contributing factors to the respiratory distress, symptoms displayed and importance of follow-up with primary care physician for assessment of asthma or other underlying conditions.

If the emergency may have resulted from a food provided by the school food service department, or from an acute environmental exposure, then request assistance from witnesses and staff to ascertain what potential exposure the student may have encountered and review what changes need to be made to prevent another exacerbation. This information should be included in the student's health care plan and emergency action plan upon return to school.

Developing Individualized Health Care Plans and Emergency Action Plans

Children with life-threatening allergies must have an individualized health care plan (IHCP) and action plans (such as Emergency Action Plans) to address how their health and safety needs will be met while in school.

Sample IHCP and EAP templates specific to Anaphylaxis and Asthma may be found on the Georgia Department of Public Health (GDPH) School Nurse Resources Webpage at the following link: http://dph.georgia.gov/school-nurse-resources.

a. Emergency Action Plan (EAP)

Emergency Action Plans (EAPs) provide specific directions for students with life-threatening allergies or asthma episodes, appropriate to the student's diagnosis, about what to do in medical emergencies such as an accidental exposure to allergens and safety emergencies (such as fire drills or lockdowns). EAPs are often part of IHCPs. This written plan helps school nurses; school personnel and emergency responders react to emergency situations in a prompt, safe and individualized manner. EAPs may include:

- name and other identifying information (such as date of birth, grade and photo);
- disease or disorder specific information (such as specific allergen);
- signs and symptoms of an adverse reaction;
- location and storage of emergency medications
- who will administer the medication (including self-administration options);
- follow-up plans (such as calling 911 after the administration of epi pens); and
- emergency contacts for parents/guardians and medical providers.

To develop EAPs, school nurses should:

- obtain current health information from the family and the student's health care provider(s), including student's emergency plan and all medication orders, Asthma Action Plans, Allergy Action Plans; and
- consult with the health care provider, when necessary, to clarify emergency medical protocol and medication orders.

b. Health Care Plan (IHCP)

In addition to the development of EAPs, students with life-threatening allergies must also have an IHCP. The process for developing and implementing an individualized plan for the student includes:

- identification of a core team to establish the plan. **School nurses** should have the lead role on this team. In addition to the school nurse, the team should include, at a minimum, parent(s), guardian(s) or other family members; school administrator(s); classroom teacher; and the student (if appropriate). Other possible members include

the school medical advisor, school-based health clinic staff, student's health care provider, culinary arts teachers and other school staff such as the school service manager;

- collaboration between school nurses and parents to consider developmentally and age-appropriate accommodations for consideration at the core team meeting;
- meeting of team members to finalize IHCPs. While health care providers can offer recommendations for the types of accommodations needed in school settings, it is the core team's responsibility for the development of recommendations based on the students' needs and school environments;
- determination of the type of plan appropriate for students (such as IHCP or Section 504 plan). If the team determines that a student does not meet the eligibility requirements for Section 504, the IHCP may be considered one and the same as the Section 504 plan;
- based on students' health status, determine the minimum frequency with which health information will be reviewed and update accordingly; and
- clarify the roles and responsibilities of each core team member. Ensure that all team members' opinions are considered.

IHCPs should address student needs both during the normal school day and during before- and after-school activities. This information may be distributed to all school staff that has responsibility for the student with life-threatening allergies. Considerations to be included in IHCPs for students with life-threatening allergies or asthma may include:

- classroom environment (such as including allergy/trigger free areas in the classroom for students with allergies or allowing students with allergies to have or dietary supplements when needed in the classroom);
- cafeteria safety, including allergy free tables or zones;
- participation in school nutrition programs;
- snacks, birthday and other celebrations;
- alternatives to rewards and incentives;
- hand-washing;
- location(s) of emergency medication;
- risk management during lunch and recess times; classroom projects (such as science activities that may involve allergen products);
- classroom jobs (such as feeding fish, washing tables, etc.);
- special events (such as cultural programs, science programs);
- field trips, fire drills and lockdowns;
- staff education and training;
- who will provide emergency and routine care in school, i.e., administering emergency medication or feeding;
- substitute staff notification and training (including nurses, teachers, student teachers, cafeteria staff, school bus drivers and others as appropriate);

- school transportation; transitions to after-school programs; athletic and extracurricular activities;
- individualized adaptations of district parental notification letter (if necessary);
- Parent Teacher Organization or Parent-Teacher Association sponsored events for students; and
- transitions between grade levels and school buildings in the district.

c. Legal Considerations

The Georgia General Assembly has enacted several statutes to authorize and encourage school systems to stock epinephrine, albuterol, and levalbuterol, and to train their employees to recognize signs of distress and properly administer those medicines. To further encourage school systems, the law provides a high degree of legal protection to school employees who administer these medicines to students experiencing signs of distress, and to those who issue prescriptions to schools to stock epinephrine, albuterol, and levalbuterol.

Specifically, the law provides that school personnel who administer (or choose not to administer) epinephrine, albuterol, and levalbuterol in good faith shall be immune from civil liability for any act or omission to act related to such administration. This immunity also extends to licensed practitioners who prescribe epinephrine, albuterol, and levalbuterol for use in school settings. It does not extend, however, to acts of willful or wanton misconduct. *See* Code Sections 20-2-776.1(d), 20-2-776.2(f), and 20-2-776.3(f).

Stock Epinephrine in the School Setting for Treatment of Undiagnosed Severe Allergic Reactions/Anaphylaxis by School Personnel

a. What is Anaphylaxis?

Anaphylaxis is a potentially life threatening medical condition occurring in allergic individuals after exposure to an allergen. People with allergies have over-reactive immune systems that target otherwise harmless elements in our diet and environment. During an allergic reaction to food, the immune system identifies a specific food protein as a target. This initiates a sequence of events in the cells of the immune system resulting in the release of chemical mediators such as histamine. These chemical mediators trigger inflammatory reactions in the tissues of the skin, the respiratory system, the gastrointestinal tract, and the cardiovascular system.

When the inflammatory symptoms are widespread and systemic, the reaction is termed "anaphylaxis" a potentially life-threatening event. Anaphylaxis refers to a collection of symptoms affecting multiple systems in the body. These symptoms may include:

Organ	Symptoms
Skin	Swelling of any body part Hives, rash on any part of body Itching of any body part Itchy lips
Respiratory	Runny nose Cough, wheezing, difficulty breathing, shortness of breath Throat tightness or closing Difficulty swallowing Difficulty breathing, shortness of breath Change in voice
Gastrointestinal (GI)	Itchy tongue, mouth and/or throat Vomiting Stomach cramps Abdominal pain Nausea Diarrhea
Cardiovascular	Heartbeat irregularities Flushed, pale skin Coughing, cyanotic (bluish) lips and mouth area Decrease in blood pressure Fainting or loss of consciousness Dizziness, change in mental status Shock
Other	Sense of impending doom Anxiety Itchy, red, watery eyes

Anaphylaxis may occur in the absence of any skin symptoms such as itching and hives. Fatal anaphylaxis is more common in children who present with respiratory symptoms or GI symptoms such as abdominal pain, nausea or vomiting. In many fatal reactions, the initial symptoms of anaphylaxis were mistaken for asthma or mild GI illness, which resulted in delayed treatment with epinephrine auto-injector.

Fatal anaphylaxis is more common in children with food allergies who are asthmatic, even if the asthma is mild and well controlled. Children with a history of anaphylaxis or those whose prior food reactions have included respiratory symptoms such as difficulty breathing, throat swelling or tightness are also at an increased risk for severe or fatal anaphylaxis.

Anaphylaxis characteristically is an immediate reaction, occurring within minutes of exposure, although onset may occur one to two hours after ingestion. In up to 30 percent of anaphylactic reactions, the initial symptoms may be followed by a second wave of symptoms two to four hours later and possibly longer. This combination of an early phase of symptoms followed by a late phase of symptoms is defined as biphasic reaction. While the initial symptoms usually respond to epinephrine auto-injector, the delayed response may not respond as well to epinephrine auto-injector or other forms of therapy used in anaphylaxis.

For those children at risk for food-induced anaphylaxis, the most important management strategy in the school is prevention. In the event of an anaphylactic reaction, epinephrine auto-injector is the treatment of choice and should be given immediately. Sometimes, if symptoms do not subside, a second epinephrine auto-injector is necessary. Reports indicate that as many as one-third of individuals experiencing anaphylaxis may require a second (epinephrine) injection to control their reaction until they can get to a hospital (http://www.epipen.com/user.aspx, 2005).

Studies (Sampson, 1992 and Bock, 2001) show that fatal and near-fatal anaphylactic reactions are sometimes associated with not using epinephrine auto-injector or delaying the use of epinephrine treatment. When in doubt, it is better to give the epinephrine auto-injector and call the Emergency Medical System for an ambulance. Fatalities are more likely to occur when epinephrine administration is withheld.

An epinephrine auto-injector is a disposable drug delivery system that contains the proper dose of epinephrine and is used to treat anaphylaxis. It is supplied as a spring-loaded syringe that can be easily transported. The disposable system is designed to treat a single anaphylactic episode and must be properly discarded after its use. It is generally recommended that two epinephrine auto-injectors be kept on-hand as back up.

b. Standards and Procedures for Emergency Use of the Epinephrine Auto-Injector (Epi-Pen)

Steps in the Emergency Use of an Epinephrine Auto-Injector (Epi-Pen):

1. Determine if anaphylaxis is suspected. Anaphylaxis usually, but not always, occurs right after exposure to an allergen. Frequently, anaphylaxis occurs in individuals who have a history of a previous reaction. If there is uncertainty about the diagnosis, but there is a reasonable probability that it is anaphylaxis, then treat as anaphylaxis.
2. **If anaphylaxis symptoms occur, call 911 or activate the emergency medical system (EMS). Stay with the victim.** Have others notify the paramedics, school nurse, parents and school administrator immediately.
3. Have the victim sit down. Reassure the victim and avoid moving him or her. Calming reduces the distribution of the allergen in the body.
4. **Prepare to administer Epi-Pen.**
    a. For students in second grade or below, or if less than 66 lbs., use **White label** Epi-Pen Jr. (0.15 mg)
    b. For adults and students in third grade or above, or if more than 66 lbs., use **Yellow label** Epi-Pen (0.3 mg)
    c. The Epi-Pen acts immediately; however the effects last only 10—15 minutes. *Make sure someone has called **911*.**

Epi-Pen Administration Procedure:

1. **Grasp the Epi-Pen and form a fist around the unit. With the other hand, pull off the GRAY Safety Cap.**
2. **Hold the black tip near the outer thigh. Never put thumb, fingers, or hand over the black tip.** (If an accidental injection occurs, go immediately to the nearest hospital emergency room.)
3. **Swing and jab the black tip firmly into the OUTER BARE THIGH so that the auto-injector is perpendicular (at a 90° angle) to the thigh. You will hear a click.** (The Epi-Pen can be injected through the victim's clothing, if necessary.)
4. **Hold the Epi-Pen firmly in place for 10 seconds, and then remove it from the thigh.** (After the injection, the victim may feel his or her heart pounding. This is a normal reaction.)
5. **Remove the Epi-Pen and massage the injection area for several seconds.**
6. **Check the black tip:**
    a. If the needle is exposed, the dose has been delivered.
    b. If the needle is not exposed, repeat steps b through e.
7. **Dispose of the Epi-Pen in a "sharps" container or give the expended Epi-Pen to the paramedics.**
8. **Call 911, if not previously called.**

If the anaphylactic reaction is due to an insect sting, remove the stinger as soon as possible after administering the Epi-Pen. Remove stinger quickly by scraping with a fingernail, plastic card or piece of cardboard. Apply an ice pack to sting area. Do NOT push, pinch, or squeeze, or further imbed the stinger into the skin because such action may cause more venom to be injected into the victim.

Observe the victim for signs of shock. Cover the victim with a blanket, as necessary, to maintain body temperature and help to prevent shock.

Monitor the victim's airway and breathing. Begin CPR immediately if the victim stops breathing.

Take the victim's vital signs (if trained to do so) and record them. Duplicate the emergency card for the paramedics. When paramedics arrive tell them the time Epi-Pen was administered and the dose administered. If Epi-Pen has not been disposed of in a sharp's container, give the expended Epi-Pen to the paramedics.

If symptoms continue and paramedics do not arrive, use a new Epi-Pen and re-inject 15 to 20 minutes after initial injection. Continue to monitor the victim's airway and breathing.

Follow-up medical care should be obtained at the emergency room or from the victim's physician. A second delayed reaction may occur up to 6 hours after the initial anaphylaxis.

Document the incident and complete the accident/incident report. Include in the documentation the date and time Epi-Pen was administered, the victim's response, and additional pertinent information. Send a copy of the report to the school nurse.

c. Training

The ***Training for Medication Administration*** section describes the minimum training requirements required by law. The Department of Public Health further recommends that this training should include, at a minimum, the following:

- the general principles of safe administration of medication;
- the procedural aspects of the administration of medication, including the safe handling and storage of medications and documentation;
- and specific information related to each student's medication and each student's medication plan including the name and generic name of the medication, indications for medication, dosage, routes, time and frequency of administration; and
- therapeutic effects of the medication, potential side effects, overdose or missed dose of the medication and when to implement emergency interventions.

When feasible, the department strongly recommends that trainings be provided for unlicensed personnel ***at least twice per school year***. Any individual trained to assist with the

administration of emergency medication should be required to maintain a certification in Basic Life Support - CPR.

Where feasible, a school nurse should conduct these trainings for the agents, staff or other designees. Additional authorized trainers include physician, licensed professional school nurse (RN or LPN), respiratory therapist, physician assistant, pharmacist, and paramedic. Below are recommended on-line videos that may be used along with the training for Medication Administration.

Demonstration Online- Videos of Administration of Auto-Injectable Epinephrine

How to use the Epi-Pen® and EpiPen Jr®
https://www.epipen.com/en/about-epipen/how-to-use-epipen

How to use the Auvi-Q™ (epinephrine injection)

http://www.auvi-q.com/auvi-q-demo

http://products.sanofi.us/Auvi-Q_Patient_Information/Trainer_Information.pdf

How to use the Adrenaclick™

http://www.adrenaclick.com/how_to_use_adrenaclick_epinephrine_injection_USP_auto_injector.php

Schools/school districts should maintain documentation of administration of medication trainings as follows:

- dates of general and student-specific trainings;
- content of the training;
- individuals who have successfully completed general training;
- student-specific administration of medication training for the current school year;
- name and credentials of the nurse or school medical advisor trainer or trainers; and
- completed Documentation of Competency Form.

Stock Albuterol/Levalbuterol in the School Setting for Treatment of Perceived Respiratory Distress by School Personnel, Agent or Designee

a. What is Asthma?

Asthma is a chronic disease of the lungs and airways that may make it difficult to breathe and can be life threatening. Asthma causes inflammation or swelling, production of excess mucus and tightening of the muscles (bronchospasm) that surround the airway. Together the bronchospasm and inflammation make it harder to move air through the airways.

Asthma symptoms often include recurrent episodes of wheezing, coughing, shortness of breath, and chest pain or tightness. These symptoms are often initiated or worsened by exposure to substances or conditions (also called "triggers") such as allergens (dust, animal fur, cockroaches, mold, and pollens from trees, grasses, and flowers), irritants (tobacco smoke, air pollution, strong odors or chemicals), exercise, colds, flu and strong emotions.

Asthma affects people of all ages. Factors such as genetics, environmental exposures, and viral and respiratory infections all play a role in asthma. There is no cure for asthma. However, it can be well managed by avoiding triggers and taking appropriate medications.
Asthma and allergies affect the body through similar mechanisms related to how our body's immune system responds to common substances or foods. In the case of atopic asthma, the immune system is over-sensitized to certain triggers such as pollen or dust. This over-sensitization means that the body overreacts to a certain triggers causing the onset of asthma symptoms, which can lead to an asthma exacerbation (attack).

Allergic reactions occur when the body mistakes a harmless substance like pollen or peanuts as a dangerous invader. As a response, the body attacks the substance with antibodies. These chemicals released by your immune system lead to familiar symptoms like a stuffy nose, runny nose or itchy eyes. For some people, this same reaction also affects the lungs and airways, leading to asthma symptoms. Some medications can treat allergies and asthma simultaneously.

Asthma co-morbidity is the presence of one or more disorders (or diseases) that can have an aggravating effect on asthma. They may often be identified prior to having asthma diagnosed. These conditions can lead to worsening of asthma, treating them can lead to improved asthma management.

b. Standards and Procedures for Emergency Use of the Albuterol/Levalbuterol

The overarching goal of asthma management is to optimize the level of control through employing a compliment of pharmacologic, self-management and trigger control techniques. Asthma is controlled through four activities:

1. Provider visits and monitoring for control using spirometry;
2. Medication management emphasizing the use of corticosteroids, step therapy, and (in the school) use of rescue inhalers (Albuterol);
3. Education of the student (symptom recognition, following an action plan, correct use of medications, avoidance of environmental triggers); and
4. Monitoring, avoidance, and elimination of environmental triggers.

Asthma medications belong to two broad categories based on whether they provide quick relief or long-term control of asthma symptoms:

- **Quick relief medications** (bronchodilators) open the airways by relaxing the muscles around the bronchial tubes. Bronchodilators are taken when symptoms begin to occur or when they are likely to occur (e.g., prior to recess, physical education classes or sports events or, if student is using a peak-flow meter, when readings are in the yellow or red zone). This category of drugs includes short-acting inhaled beta-two (ß2)-agonists.
- **Long-term control medications** generally are anti-inflammatory medications and taken daily on a long-term basis to gain and maintain control of persistent asthma, even in the absence of symptoms. This category includes long-acting inhaled b2-agonist, inhaled anti-inflammatory drugs (corticosteroids and non- corticosteroids), anti-leukotriene drugs, combination medications, theophylline and anti-IgE immunotherapy.

There is a misperception that an asthma exacerbation (asthma attack) always starts suddenly and without warning. However, many with asthma show “early warning signs” before and acute episode begins. Students vary significantly in the ways that they perceive their symptoms. Consider developing a list, with the student, of his or her early warning signs and symptoms. In school settings asthma management is supported by the

- Documentation and utilization of Asthma Action Plans and Individual Care Plans (ICP). Good for documenting symptoms and triggers.
- Support student self-management education
- Maintaining indoor air quality and controlling exposure to environmental triggers
- Asthma awareness education for staff and administration
- Maintain protocols to manage acute asthma exacerbations

Possible Early Warning Signs and Symptoms

Early warning signs may progress to an asthma episode (attack).

coughing
itchy throat or chin (tickle in throat)
stomach ache (younger child)
funny feeling in chest (younger child)
grumpiness or irritability
fatigue agitation
dark circles under eyes
behavioral changes
decreased appetite
peak flow in yellow or red zone
persistent coughing
headache

Possible Late Stage Asthma Episode Signs and Symptoms

Not all students will experience all of these symptoms during an asthma episode (attack).

becoming anxious or scared
shortness of breath
rapid labored breathing
incessant coughing
nasal flaring
pulling-in of neck and chest with breathing
rescue medications every 4 hours or more often
tightness in chest
wheezing while breathing in/out
vomiting from hard coughing
unable to talk in full sentences
shoulders hunched over
sweaty, clammy skin

The school nurse, designated staff or agent must immediately respond to an emergency of a student who is perceived to be experiencing respiratory distress and must administer albuterol/levalbuterol in accordance with this regulation and the training provided to school staff or designee. If the student is determined to be experiencing respiratory distress:

1. Call 911 (if symptoms of severe distress present);
2. Summon the school nurse if available. If the school nurse is not immediately available, summon the designated staff (Emergency School Responders) trained to respond to respiratory distress;
3. Check for adequacy of the airway, breathing, respiratory rate, blood pressure (when feasible), pulse and color;
4. Administer medication: albuterol/levalbuterol per standing order;
5. Monitor vital signs (pulse, BP, respiration, color);
6. If not responding and extremely severe symptoms are present, administer epinephrine per guidelines;
7. Determine the cause (if possible); and
8. Contact the child's parents and primary care physician.

c. Training

The ***Training for Medication Administration*** section above describes the minimum training requirements required by law. The Department of Public Health further recommends that this training should include, at a minimum, the following:

- the basic principles of asthma;
- recognizing signs and symptoms of respiratory distress/breathing emergency;
- the general principles of safe administration of medication;
- the procedural aspects of the administration of medication, including the safe handling and storage of medications and documentation;
- how to assembly and use a compressor or nebulizer for the administration of albuterol/levalbuterol solution with face mask;
- how to properly assist with student self-administration of albuterol/levalbuterol using a metered dosed inhaler with or without a spacer or breathing chamber; and
- the Five Rights of Care

When feasible, the department strongly recommends that trainings be provided for unlicensed personnel ***at least twice per school year.*** Any individual trained to assist with the administration of emergency medication should be required to maintain a certification in Basic Life Support - CPR.

Where feasible, a school nurse shall conduct these trainings for the agents, staff or other designees. Additional authorized trainers include physician, licensed professional school nurse (RN or LPN), respiratory therapist, physician assistant, pharmacist, paramedic or Certified Asthma Educator with (AE-C) designation.

Below are recommended on-line videos that may be used along with the training for assistance with Albuterol/Levalbuterol Medication Administration.

Demonstration Video – How to Use a Metered Dose Inhaler
St. Louis Children's Hospital
http://www.stlouischildrens.org/our-services/allergy-immunology-and-pulmonary-medicine/asthma-education/video-living-with-asthma/d-1

Demonstration Video – How to Use a Nebulizer Machine
St. Louis Children's Hospital

http://www.stlouischildrens.org/our-services/allergy-immunology-and-pulmonary-medicine/asthma-education/video-living-with-asthma/d-2

Demonstration Video - Know How to Use Your Asthma Inhaler
Centers of Disease Control and Prevention
http://www.cdc.gov/asthma/inhaler_video/

Schools/school districts should maintain documentation of administration of medication trainings as follows:

- dates of general and student-specific trainings;
- content of the training; individuals who have successfully completed general training;
- student-specific administration of medication training for the current school year;
- name and credentials of the nurse or school medical advisor trainer or trainers; and
- completed Documentation of Competencies Form.

Appendix A
School Request for Prescription (Auto-Injectable Epinephrine)

The Request for Prescription should be completed, signed and returned to the Physician to be considered for a prescription for the undesignated auto-injectable epinephrine from the Requesting Physician. **Once the prescription has been received, a copy of the prescription should be kept in the Medication Administration Record.**

School Request for Auto-Injectable Epinephrine Prescription

Request for Auto-Injectable Epinephrine Prescription
School: _____
Address: _____ *(Street) (City) (State) (Zip Code)*
School Nurse (RN) Contact Name: _____

The above named school requests a prescription from Physician for the limited purpose of stocking and administering auto-injectable epinephrine to any student upon the occurrence of an actual or perceived anaphylactic adverse reaction, subject to the following conditions:

1. The school will assure that sufficient school nurses are available to provide proper oversight of the program (minimum of one Registered Nurse licensed to practice in the state of Georgia).

2. The school has approved policies governing the administration of epinephrine by school personnel.

3. The unlicensed school personnel authorized to administer epinephrine has completed training in recognizing the symptoms of anaphylactic shock and the correct method of administering the epinephrine auto-injector.

4. The school nurse will provide a training review and informational update for unlicensed personnel at least twice a year.

5. When epinephrine is administered, the local emergency medical services system (E-911) shall be notified immediately, followed by notification of the school nurse, student's parents, or, if the parents are not available, any other designated person(s), and the student's physician.

6. There are written procedures, in accordance with any standards established by Physician, for:

a) proper storage of the epinephrine;
b) documentation of administration;
c) notification of administration;
d) recording receipt and return of medication by the school nurse;
e) reporting medication errors;
f) reviewing any incident involving administration of epinephrine to determine adequacy of the response and to consider ways to reduce risks for the particular student and the student body in general; and
g) planning and working with the emergency medical system to ensure the fastest possible response.

I certify that I have read and agree to the above and all requirements to the administration of epinephrine and that the information provided in this request is accurate.

PHYSICIAN (print name) **_____**

Signature: _____Date: _____

_____

Address *(City)* *(State)* *(Zip Code)*

_____ _____ _____

Telephone *Fax* *Email Address*

Principal/Headmaster (print name) **_____**

Signature: _____Date: _____

_____

Address *(City)* *(State)* *(Zip Code)*

_____ _____ _____

Telephone *Fax* *Email Address*

_____

School Nurse (RN) Contact (Please print name)

_____

Address *(City)* *(State)* *(Zip Code)*

_____ _____ _____

Telephone *Fax* *Email Address*

Appendix B

School Request for Prescription (Albuterol/Levalbuterol)

Schools or school systems may choose to adopt use of the LEA Request for Prescription form within their district. The Request for Prescription should be completed, signed and submitted to the Licensed Clinician for the undesignated stock Albuterol/Levalbuterol. **Once the prescription has been received, a copy of the Prescription should be kept in the Medication Administration Record.**

School Request for Albuterol/Levalbuterol Prescription

Request for Albuterol/Levalbuterol Prescription
Request (check one): □Nebulizer Solution □ Metered Dose Inhaler **School Name**: _____ **Address**: _____ *(Street) (City) (State) (Zip Code)* **School Nurse or Designee Contact Name:** _____ **Request Submitted To:** _____ **Name of Practice:** _____ **Physician/Clinician Name:** _____

The above named school requests a prescription from Physician for the limited purpose of stocking and administering albuterol or levalbuterol to any student upon the occurrence of an actual or perceived respiratory distress, subject to the following conditions:

1. The school will assure that sufficient school nurses are available to provide proper oversight of the program (minimum of one Registered Nurse licensed to practice in the state of Georgia).

2. The school has approved policies governing the administration of albuterol or levalbuterol by school personnel.

3. The unlicensed school personnel authorized to administer albuterol or levalbuterol have completed training in recognizing the symptoms of respiratory distress and the correct method of administering albuterol or levalbuterol...

4. The school nurse will provide a training review and informational update for unlicensed personnel at least twice a year.

5. When albuterol or levalbuterol is administered, the local emergency medical services system (E-911) shall be notified immediately, followed by notification of the school nurse, student's parents, or, if the parents are not available, any other designated person(s), and the student's physician.

6. There are written procedures, in accordance with any standards established by Physician, for:

a) proper storage of the albuterol or levalbuterol;
b) documentation of administration;
c) notification of administration;
d) recording receipt and return of medication by the school nurse;
e) reporting medication errors;
f) reviewing any incident involving administration of albuterol or levalbuterol to determine adequacy of the response and to consider ways to reduce risks for the particular student and the student body in general; and
g) planning and working with the emergency medical system to ensure the fastest possible response.

I certify that I have read and agree to the above and all requirements to the administration of albuterol or levalbuterol and that the information provided in this request is accurate.

PHYSICIAN (print name) **_____**

Signature: _____Date: _____

_____
Address *(City)* *(State)* *(Zip Code)*

_____ _____ _____
Telephone *Fax* *Email Address*

Principal/Headmaster (print name) **_____**

Signature: _____Date: _____

_____
Address *(City)* *(State)* *(Zip Code)*

_____ _____ _____
Telephone *Fax* *Email Address*

_____
School Nurse (RN) Contact (Please print name)

_____
Address *(City)* *(State)* *(Zip Code)*

_____ _____ _____
Telephone *Fax* *Email Address*

Appendix C

Sample Memorandum of Agreement (Anaphylaxis)

A school or school system may choose to use a Memorandum of Agreement if a formal agreement is preferred or requested by the licensed provider to define relationship and protocols with respect to the provision of prescription.

MEMORANDUM OF AGREEMENT
BETWEEN

[PHYSICIAN]

AND

[SCHOOL]

Effective Date:

End Date:

Physician and School enter into this Agreement to support the safe and effective management of allergies and anaphylaxis in the school setting consistent with O.C.G.A. § 20-2-776.2 by stocking and administering auto-injectable epinephrine for use with students experiencing an actual or perceived anaphylactic adverse reaction.

1. Physician agrees to:

   A. Write a prescription in name of school for the stocking of Epinephrine Auto-Injectors to any student believed to be experiencing potentially life-threatening allergic reactions (anaphylaxis) upon receipt of **Request for Prescription Form.**

2. School agrees to:

   A. The school will have sufficient school nurses are available to provide proper oversight of the program (minimum of one Registered Nurse licensed to practice in the state of Georgia).

   B. The school has approved policies governing the administration of epinephrine by school personnel.

   C. The unlicensed school personnel authorized to administer epinephrine will complete training in recognizing the symptoms of anaphylactic shock and the correct method of administering the epinephrine auto-injector. The school nurse will document the training and testing for competency.

   D. The school nurse will provide a training review and informational update for unlicensed personnel at least twice per school year.

   E. The school will maintain a list of school personnel (licensed and unlicensed) authorized and trained to administer epinephrine when a school nurse is not immediately available.

F. Epinephrine will only be administered in accordance with a written medication administration plan.

G. When epinephrine is administered, the local emergency medical services system (E-911) shall be notified immediately, followed by notification of the school nurse, student's parents, or, if the parents are not available, any other designated person(s), and the student's physician.

H. When epinephrine is administered, the school nurse shall complete Report of Administration and fax to the Physician within 72 hours of administration.

I. There are written procedures, in accordance with standards established by the Department of Public Health, for:

a) proper storage of the epinephrine;
b) development of the medication administration plan;
c) documentation of administration;
d) notification of administration;
e) recording receipt and return of medication by the school nurse;
f) reporting medication errors;
g) reviewing any incident involving administration of epinephrine to determine adequacy of the response and to consider ways to reduce risks for the particular student and the student body in general; and
h) planning and working with the emergency medical system to ensure the fastest possible response.

This Agreement may be canceled or terminated by either of the parties upon thirty days' written notice.

This ___ day of _____, _____.

_____ _____

Physician Date

_____

Print/Type Name

_____ _____

School Date

_____

Print/Type Name

_____

Title

Appendix D

Sample Memorandum of Agreement (Asthma)

A school or school system may choose to use a Memorandum of Agreement if a formal agreement is preferred or requested by the licensed provider to define relationship and protocols with respect to the provision of prescription.

MEMORANDUM OF AGREEMENT
BETWEEN

[PHYSICIAN]

AND

[SCHOOL]

Effective Date:

End Date:

Physician and School enter into this Agreement to support the safe and effective management of respiratory distress due to asthma in the school setting consistent with O.C.G.A. § 20-2-776.3 by stocking and administering albuterol or levalbuterol for use with students experiencing actual or perceived respiratory distress.

1. Physician agrees to:

   A. Write a prescription in name of school for the stocking of albuterol or levalbuterol to any student believed to be experiencing respiratory distress upon receipt of **Request for Prescription Form.**

2. School agrees to:

   A. The school will have sufficient school nurses are available to provide proper oversight of the program (minimum of one Registered Nurse licensed to practice in the state of Georgia).

   B. The school has approved policies governing the administration of albuterol or levalbuterol by school personnel.

   C. The unlicensed school personnel authorized to administer albuterol or levalbuterol will complete training in recognizing the symptoms of respiratory distress and the correct method of administering albuterol or levalbuterol. The school nurse will document the training and testing for competency.

   D. The school nurse will provide a training review and informational update for unlicensed personnel at least twice per school year.

   E. The school will maintain a list of school personnel (licensed and unlicensed) authorized and trained to administer albuterol or levalbuterol when a school nurse is not immediately available.

   F. Albuterol or levalbuterol will only be administered in accordance with a written medication administration plan.

   G. When albuterol or levalbuterol is administered, the local emergency medical services system

(E-911) shall be notified immediately, followed by notification of the school nurse, students parents, or, if the parents are not available, any other designated person(s), and the student's physician.

H. When albuterol or levalbuterol is administered, the school nurse shall complete Report of Administration and fax to the Physician within 72 hours of administration.

I. There are written procedures, in accordance with standards established by the Department of Public Health, for:

a) proper storage of the albuterol or levalbuterol;
b) development of the medication administration plan;
c) documentation of administration;
d) notification of administration;
e) recording receipt and return of medication by the school nurse;
f) reporting medication errors;
g) reviewing any incident involving administration of albuterol or levalbuterol to determine adequacy of the response and to consider ways to reduce risks for the particular student and the student body in general; and
h) planning and working with the emergency medical system to ensure the fastest possible response.

This Agreement may be canceled or terminated by either of the parties upon thirty days' written notice.

This ___ day of _____, _____.

_____ _____

Physician Date

_____

Print/Type Name

_____ _____

School Date

_____

Print/Type Name

_____

Title

Appendix E

Emergency Medication Administration Reporting Form

EMERGENCY MEDICATION REPORTING FORM

SCHOOL DISTRICT:	**NAME OF SCHOOL:**
ADDRESS (STREET, CITY, STATE, ZIP CODE)	**CONTACT PERSON COMPLETING FORM**
TELEPHONE:	**CONTACT E-MAIL:**
DATE OF INCIDENT:	**TIME OF INCIDENT:** **_____A.M. _____P.M.**

1. Emergency Medication Administered?
    a. Albuterol/Levalbuterol
    b. Epinephrine Auto-Injector (Epi-Pen)

2. Age of Individual receiving emergency medication: _____

3. Description of person receiving emergency medication: (circle one only)
    a. Student
    b. Staff Member
    c. Visitor
    d. Other (please specify) _____

4. Was there any previously known diagnosis of a severe allergy or asthma?
    a. Yes
    b. No

5. If epinephrine administered, document trigger that precipitated allergic episode *(Circle all that apply)*
    a. Food (specific food if known) _____
    b. Drug (specific drug if known) _____
    c. Insect (specific insect if known) _____
    d. Other (please specify) _____
    e. Not Applicable

6. Location of where symptoms developed: (Check all that apply)
    a. Within school building
    b. On school grounds
    c. Other (e.g., school activity location, field trip location, etc.) _____

7. Number of doses administered: _____

8. Type of person administering the emergency medication: (Circle all that apply)
    a. Registered Nurse
    b. Trained Personnel
    c. Student
    d. Other (please specify) _____

APPENDIX F

DOCUMENTATION OF EMERGENCY ADMINISTRATION COMPETENCIES

Upon completion of written test and demonstration of skills, the qualified trainer is to complete a Documentation of Competencies form. This documentation should then be maintained for, at least, five years.

Documentation of Competencies

I have provided orientation, instruction, training and practice opportunities for _____
to administer **EpiPen® injections** in response to life-threatening systemic allergic reactions (anaphylaxis).
I observed the above named person and feel s/he can appropriately perform the tasks above.

Comments:

_____ _____

Date School Nurse/ Qualified Trainer Signature

****

I have been provided adequate orientation, instruction, training and opportunities to practice administering EpiPen® injections in response to life-threatening systemic allergic reactions (anaphylaxis). I feel I have the competencies necessary to provide these services in a safe manner.

Comments:

_____ _____

Date Participant/Staff Signature

Documentation of Competencies

I have provided orientation, instruction, training and practice opportunities for _____ to administer **Albuterol by Nebulizer** treatments in response to life-threatening systemic allergic reactions (anaphylaxis). I observed the above named person and feel s/he can appropriately perform the tasks above.

Comments:

_____ _____

Date School Nurse/ Qualified Trainer Signature

****

I have been provided adequate orientation, instruction, training and opportunities to practice administering EpiPen® injections in response to life-threatening systemic allergic reactions (anaphylaxis). I feel I have the competencies necessary to provide these services in a safe manner.

Comments:

_____ _____

Date Participant/Staff Signature

FOOD ALLERGY RESOURCES

GENERAL INFORMATION/GUIDELINES

CDC
http://www.cdc.gov/healthyyouth/foodallergies/pdf/13_243135_A_Food_Allergy_Web_508.pdf

NIAID
https://www.niaid.nih.gov/topics/foodAllergy/clinical/Pages/default.aspx

AAAAI
http://www.aaaai.org/conditions-and-treatments/allergies/food-allergies.aspx

ACAAI
http://www.acaai.org/allergist/allergies/Types/food-allergies/Pages/default.aspx

KIDS WITH FOOD ALLERGIES (KFA)
http://www.kidswithfoodallergies.org/resourcesnew.php

FARE
http://www.foodallergy.org/tools-and-resources/getting-started

NASN
http://www.nasn.org/ToolsResources/FoodAllergyandAnaphylaxis

Allergy and Asthma Network
http://www.aanma.org/

TRAINING

AllergyHome.org: Food Allergy Tools for Schools
http://www.allergyhome.org/schools/management-of-food-allergies-in-school-what-school-staffneed-to-know/

National Association of School Nurses (NASN)
http://www.nasn.org/ToolsResources/FoodAllergyandAnaphylaxis/GetTrained

NASN Checklist for Training
http://www.nasn.org/portals/0/resources/faat_2dc_training_levels.doc

FARE
http://allergyready.com/

FARE-Safe@School

http://store.foodallergy.org/ProductDetails.asp?ProductCode=SAS

Anaphylaxis Canada
http://www.eworkshop.on.ca/edu/anaphylaxis/sc00.cfm?L=1

Mylan
http://epipentraining.com/

School eLearning
http://www.safeschools.com/

EPINEPHRINE AUTO-INJECTOR DEVICE DEMONSTRATION

EpiPen®
https://www.epipen.com/about-epipen/how-to-use-epipen

Auvi-Q ®
http://www.auvi-q.com/auvi-q-demo

Adrenaclick ®
http://adrenaclick.com/how_to_use_adrenaclick_epinephrine_injection_USP_auto_injector.php

ACTION PLANS

AAAAI
http://www.aaaai.org/Aaaai/media/MediaLibrary/PDF%20Documents/Libraries/Anaphylaxis-Emergency-Action-Plan.pdf

FARE
http://www.foodallergy.org/document.doc?id=234

AANMA and ACAAI
http://www.aanma.org/wordpress/wpcontent/uploads/ANAPHYLAXISACTIONPLAN.pdf

Anaphylaxis Canada
http://www.eworkshop.on.ca/edu/anaphylaxis/images/Anaphylaxis_Emergency_Plan_English_Adapted_July_2013.pdf

NASN
http://www.nasn.org/portals/0/resources/faat_no_ECP.pdf

ASTHMA RESOURCES

GENERAL INFORMATION AND GUIDELINES

Attack on Asthma Nebraska. Education Plan & Curriculum For School Emergency Response Teams. 2007

Washington Asthma Initiative. Asthma Management in Educational Settings.
http://www.k12.wa.us/healthservices/pubdocs/asthmamanual.pdf

Georgia Department of Public Health. Asthma Control Program.
http://dph.georgia.gov/asthma-0

National Asthma Education and Prevention Program (NAEPP)
www.nhlbi.nih.gov

Expert Panel Report 3: Diagnosis and Management of Asthma Practical Guide
to the Diagnosis and Management of Asthma
www.nhlbi.nih.gov/guidelines/asthma/asthgdln.pdf

Centers for Disease Control and Prevention. National Asthma Program.
www.cdc.gov/asthma/NACP.htm

TRAINING

www.aanma.org

Allernet Allergy and Asthma
www.allernet.com

American College of Allergy, Asthma and Immunology Online
www.acaai.org

American Lung Association in Georgia
www.lungga.org

Lungtropolis
www.lungtropolis.com

Asthma and Allergy Foundation of America
www.aafa.org

Asthma Plan of Action: Creating Asthma-Friendly Environments
www.asthmainschools.com

Centers for Disease Control and Prevention
http://www.cdc.gov/asthma

Clinical Trials: Asthma
www.centerwatch.com/studies/CAT16.HTM

Family Doctor on Asthma
familydoctor.org/familydoctor/en/diseases-conditions/asthma.html

Healthfinder, of U.S. Department of Health and Human Services
www.healthfinder.gov

Kid's Health
www.kidshealth.org

National Association of School Nurses
www.nasn.org/ToolsResources/Asthma