Asthma and caring for those with asthma in schools

February 23th, 2024

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American Lung Association.

AHRQ K12: 5K12HS026385-04

Disclosures

Dr. Gonzalez has no financial relationships with any products or medications mentioned in this presentation.

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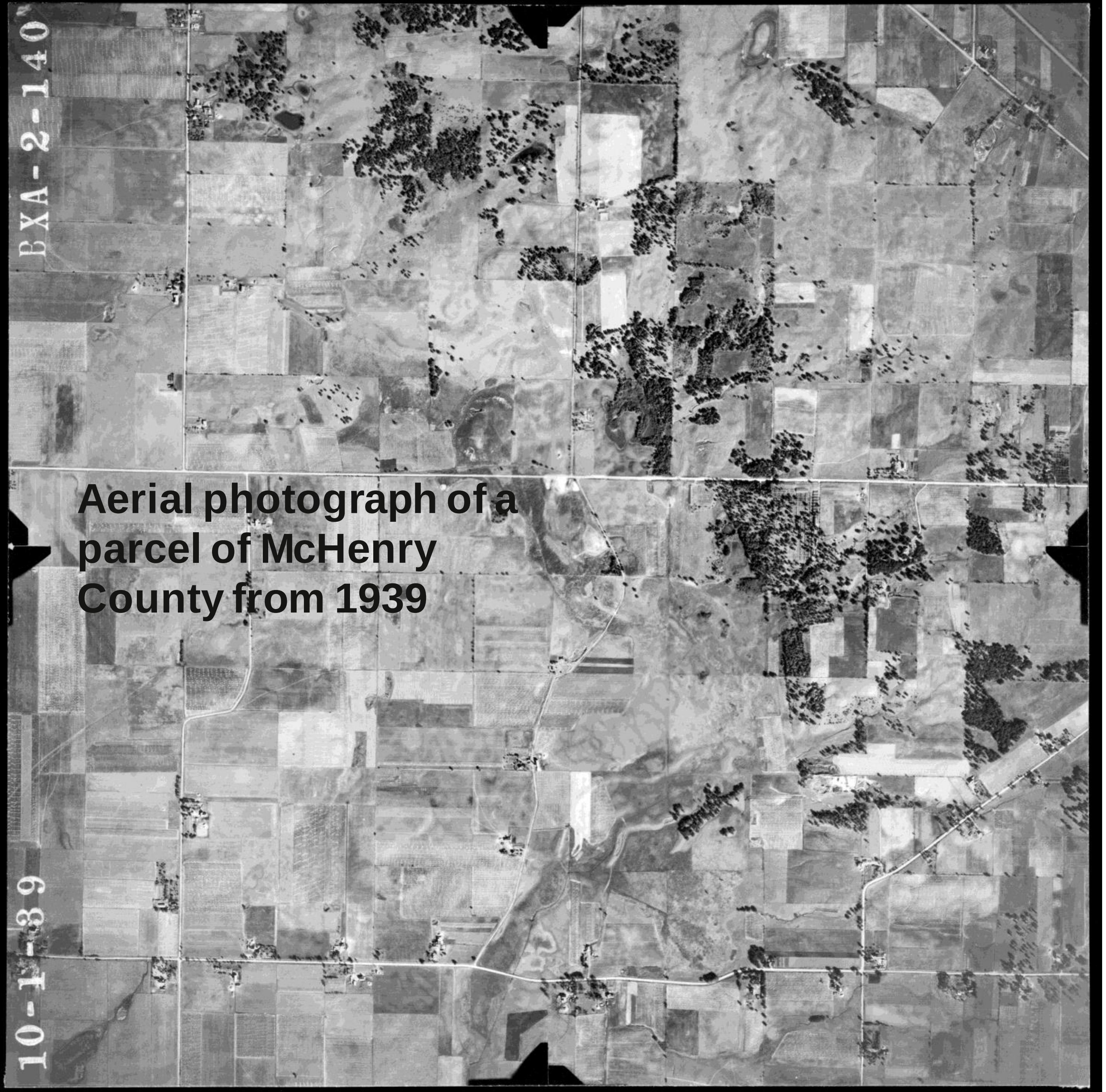
Today's Objectives

Stock photo of instructional meeting.

From "Group of People on Conference (https://www.pexels.com/photo/group-of-people-on-conference-room-1181396/). Copyright 2018 by Christina Morillo

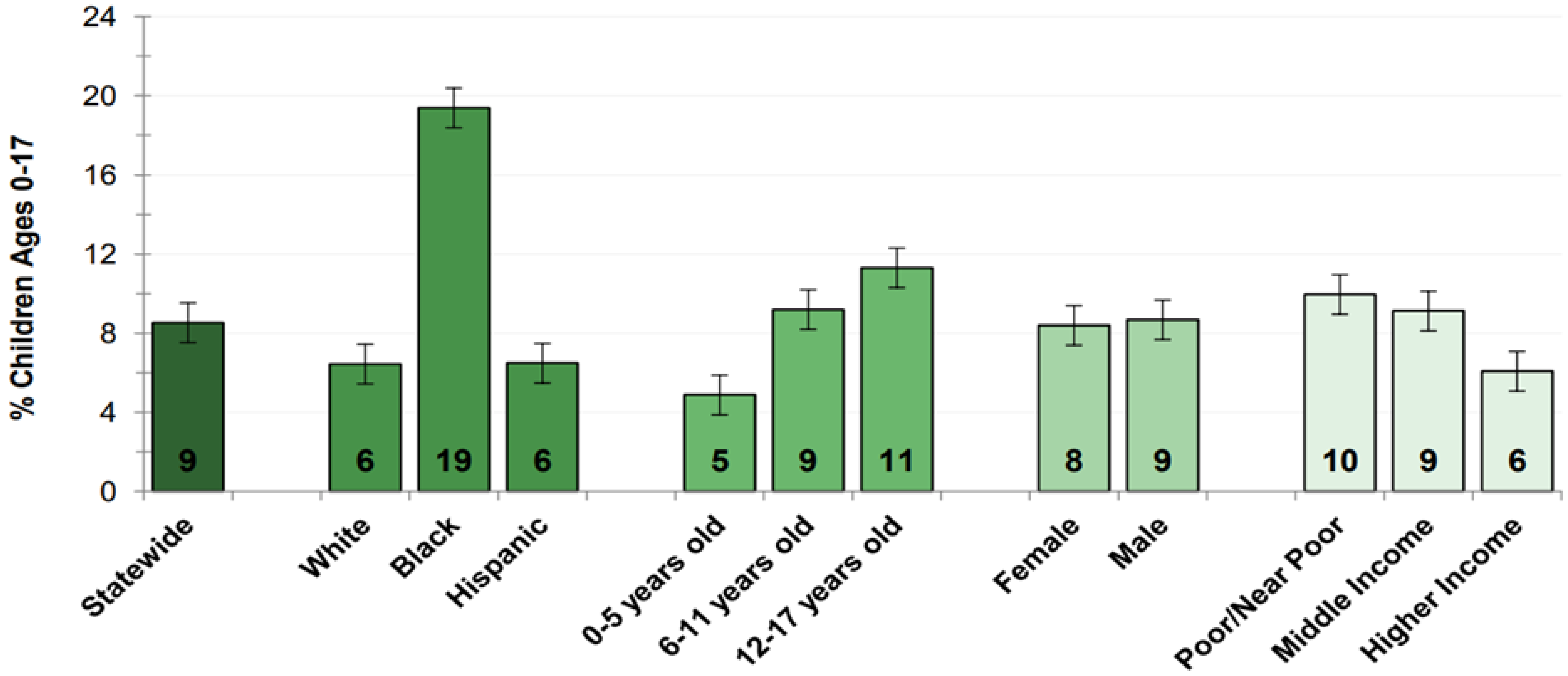
1. Review the basic epidemiology of childhood asthma at the state and county level.
2. Review asthma pathophysiology
3. Review the most recent asthma guidelines for outpatient management
4. Examine how state-based and school-based policy have the studied positive asthma outcomes
5. Understand how stock asthma medications can improve school based asthma care



Note: Picture of McHenry County. *From Illinois State Geological Survey* (*https://clearinghouse.isgs.illinois.edu/webdocs/ilhap/county/j_mchenry.html*)

Objective 1: Review the basic epidemiology of childhood asthma at the state and county level.

Pediatric Asthma in Illinois



Note: This image shows asthma prevalence rates in Illinois by sex, age, and race, emphasizing the disparity between Black and other racial/ethnic groups. Data from 2011-2014 *(IDPH, 2016)*

Objective 1

What does childhood asthma look like McHenry County?

American Lung Association. State of the Air | 2023

‹ Back to Lung.org | TRANSLATE

Report Cards ⌄ | Key Findings ⌄ | Health Impact | Recommendations | For The Media ⌄

Illinois: McHenry

Total Population:	**311,122**
Children Under 18:	71,178
Adults 65 & Over:	49,322
Pediatric Asthma:	5,009
Adult Asthma:	20,607

Asthma Incidence for children <18

7%

American Lung Association, 2023

What does asthma look like McHenry County?

Northwestern Medicine

2020 Community Health Needs Assessment

McHenry County, Illinois

Northwestern Medicine Huntley Hospital, Northwestern Medicine McHenry Hospital and Northwestern Medicine Woodstock Hospital

Prevalence of Physical and Mental Health Conditions/Diseases

McHenry County Compaired With Illinois and U.S.

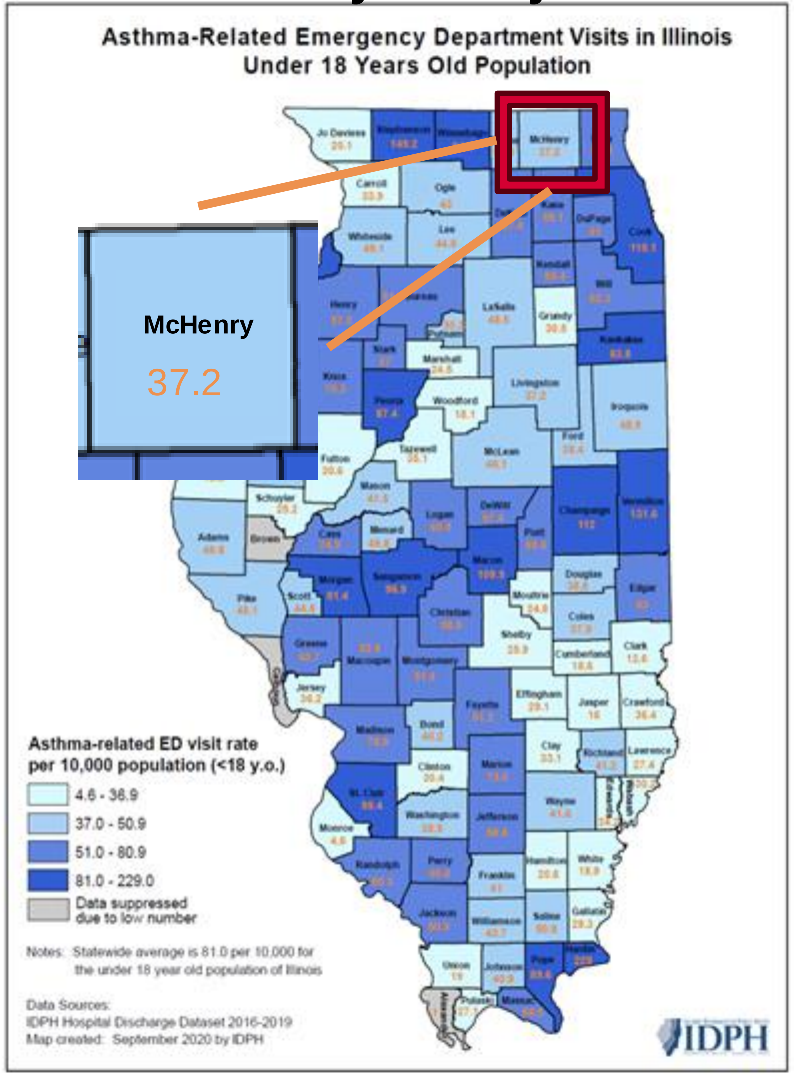
Physical or Mental Health Condition/ Disease	McHenry County	Illinois	United States
High Blood Pressure	37.3%	33.2%	33.4%
Arthritis	28.7%	24.8%	25.7%
Menthal Health Disorder	17.8%	Not Available	Not Available
Asthma	14.6%	13.1%	14.5%
Diabetes	11.8%	10.0%	11.4%
Dental disease	11.7%	Not Available	Not Available
Cancer	9.1%	10.7%	11.7%

Populations with higher rates of asthma include:

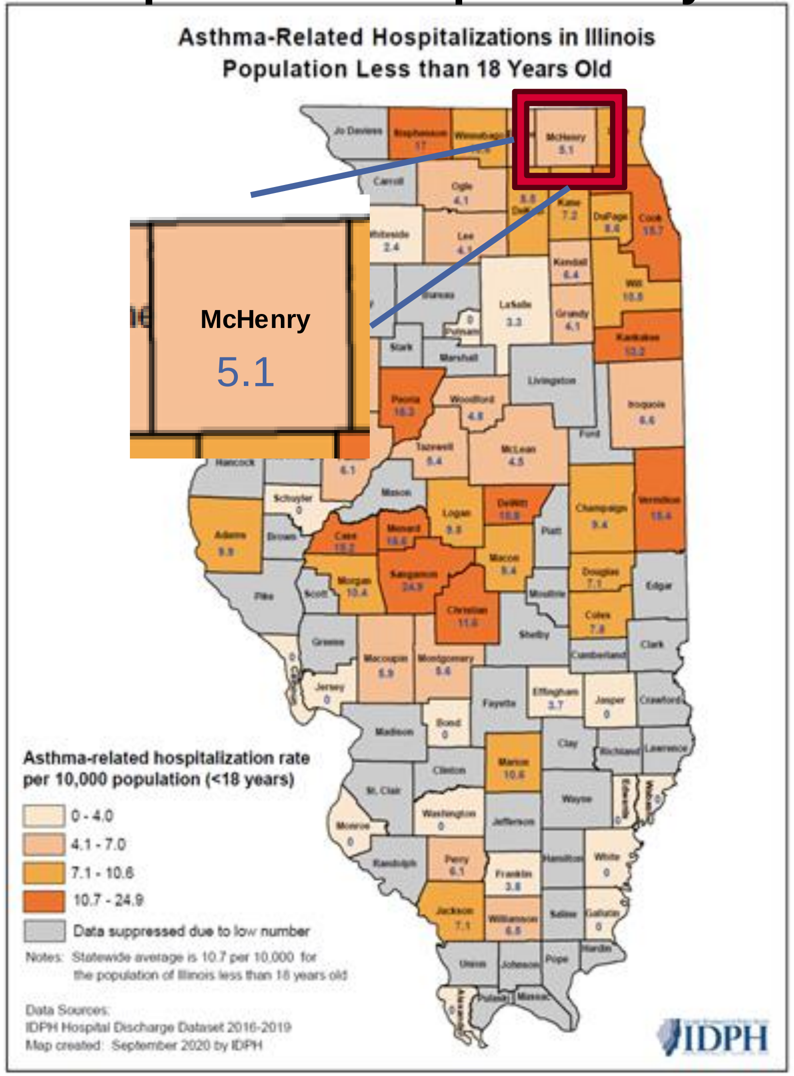
- Children
- Women (among adults) and boys (among children)
- Black Americans
- Puerto Ricans
- People living below the Federal Poverty Level
- Employees with certain exposures in the workplace

What does childhood asthma look like McHenry County?

IL ED Visits by County



IL Inpatient Visits per County



These maps displays pediatric asthma-related ED visit rates per Illinois county (Left) and pediatric asthma-related hospitalization rates (Right) from 2011-2014, with darker blue showing more ED visits and darker orange showing a higher rate of hospitalizations. (*IDPH, 2016*)

Air Pollution In McHenry County

Air Quality Index Daily Values Report over 6/24/23- 6/30/23, corresponding to Canadian wildfires for Ozone and PM 2.5 concentrations

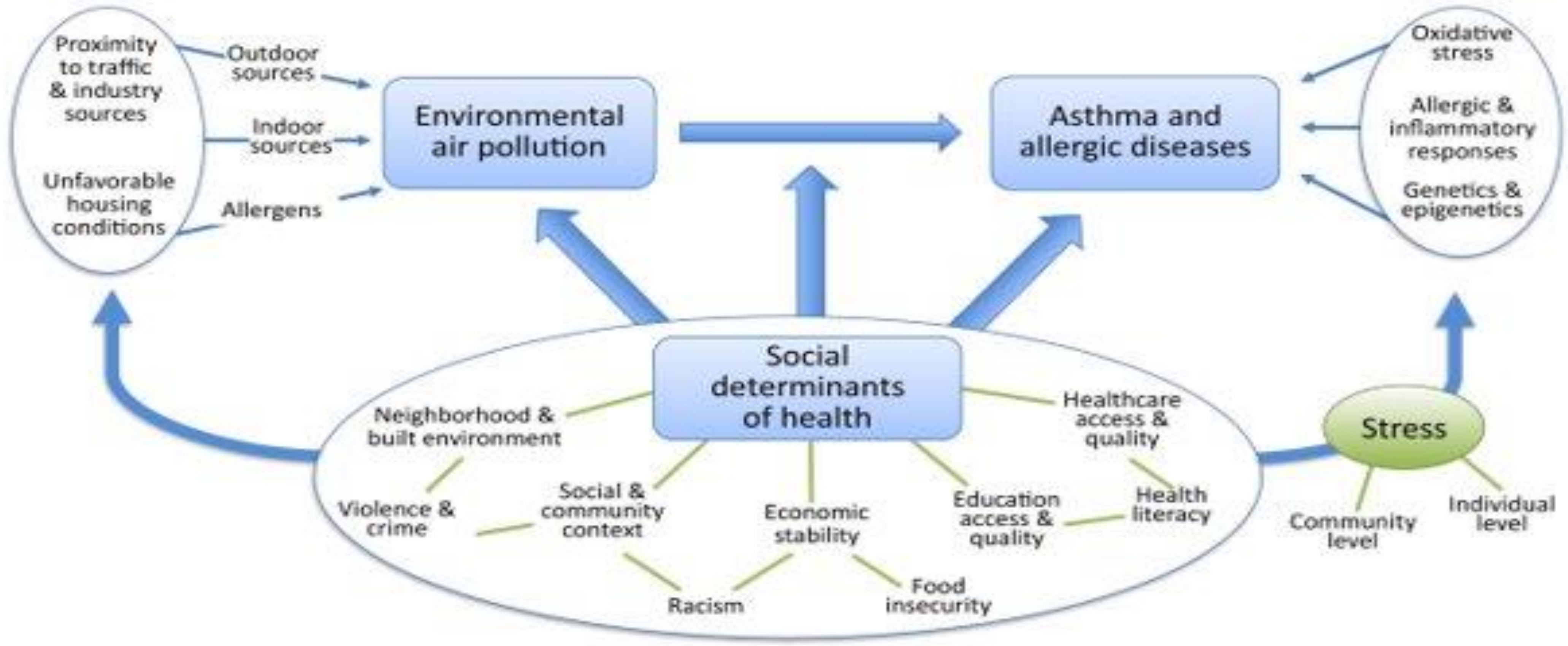
Air Quality Index Daily Values Report

Geographic Area: McHenry County, IL
Pollutant: Overall
Year: 2023

Date	Overall AQI Value	Main Pollutant	Ozone AQI Value	PM2.5 AQI Value	NO2 AQI Value	PM10 AQI Value	CO AQI Value
06/24/2023	151	Ozone	151	62	.	.	.
06/25/2023	44	Ozone	44	36	.	.	.
06/26/2023	97	PM2.5	38	97	.	.	.
06/27/2023	205	PM2.5	87	205	.	.	.
06/28/2023	184	PM2.5	161	184	.	.	.
06/29/2023	163	PM2.5	119	163	.	.	.
06/30/2023	89	PM2.5	77	89	.	.	.

U.S. Air Quality Index, 2023 https://www.epa.gov/outdoor-air-quality-data/air-quality-index-daily-values-report

Multiple Effects Worsen Asthma Outcomes



Cook et al, 2021

Objective 1

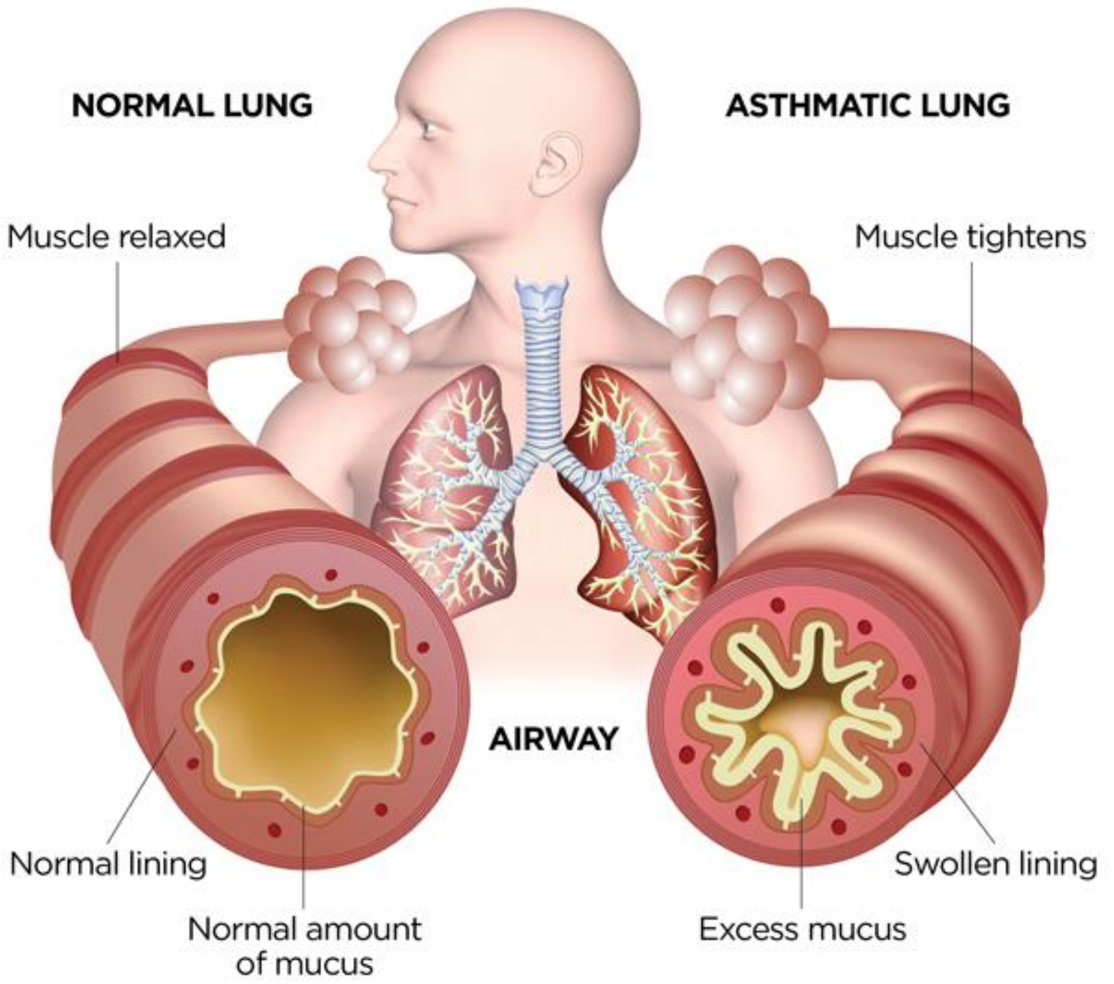
Objective 2: Review asthma pathophysiology

Stock photo from Microsoft PowerPoint

- A chronic, complex condition where a person experiences episodes of respiratory distress caused by the narrowing and obstruction of the lower airways

- Symptoms can be brought on by infections, smoke, dust, pollen, exercise, foods, etc.

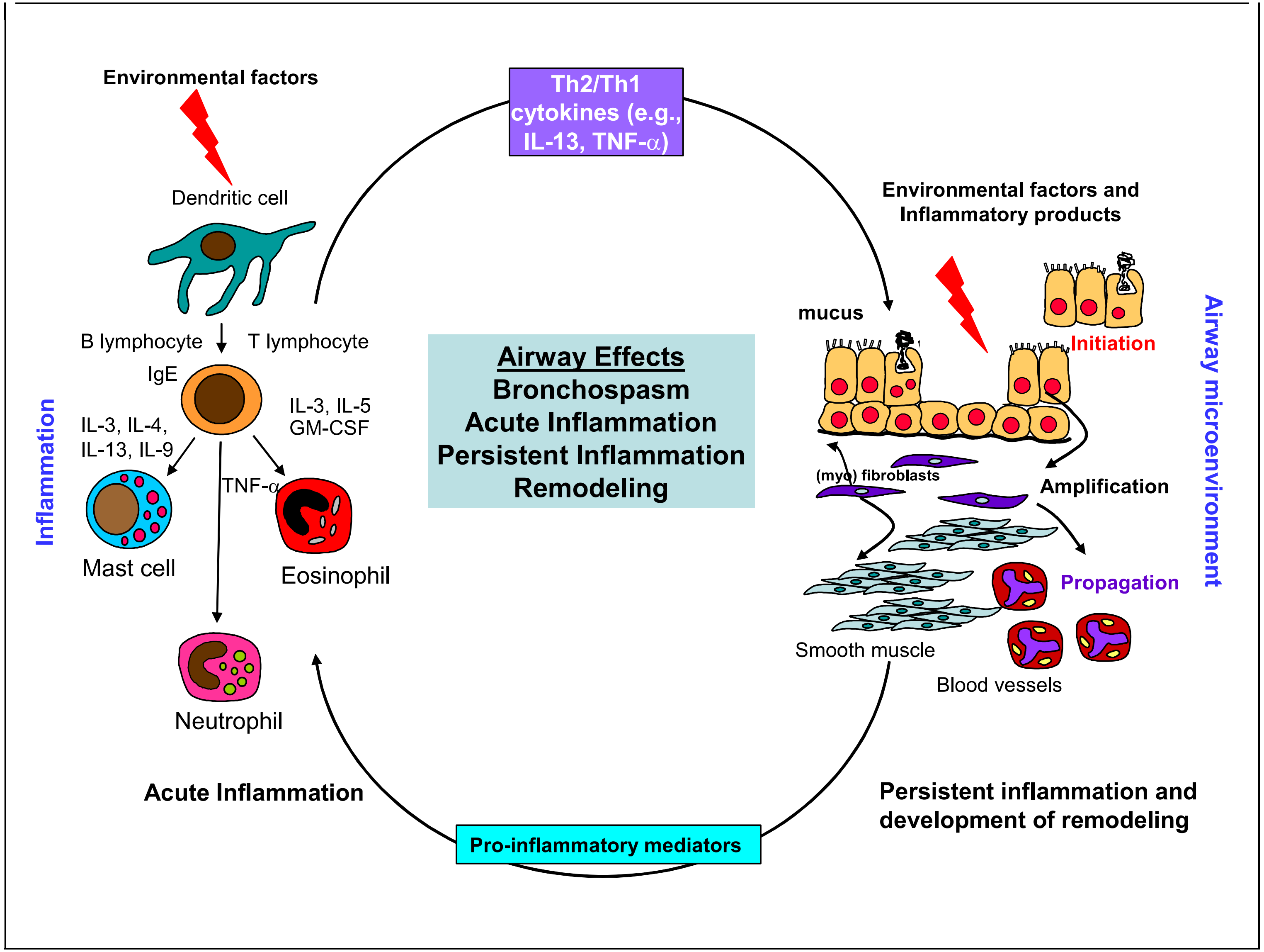
Objective 2: Review asthma pathophysiology



- Bronchoconstriction
- Airway Edema
- Airway Hyperresponsiveness
- Airway Remodeling

AAFA, 2019

Objective 2: Review asthma pathophysiology



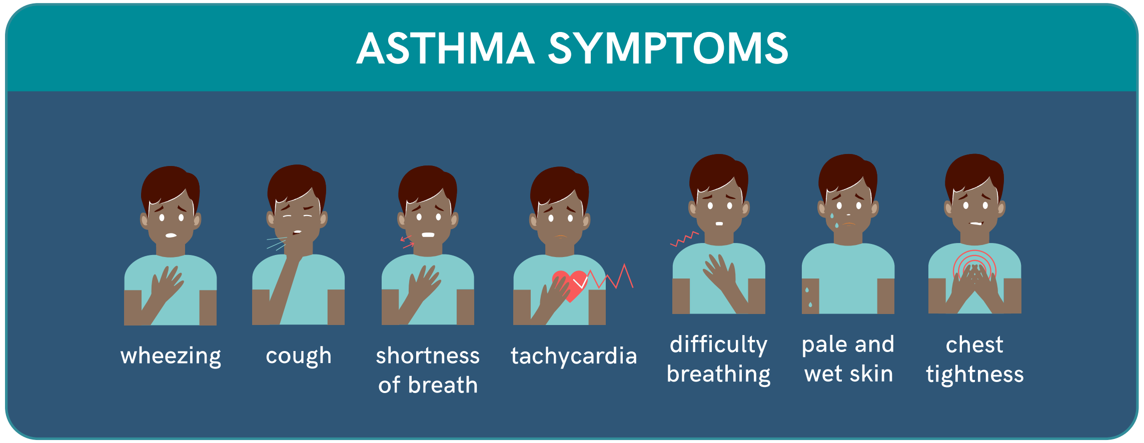
Factors Limiting Airflow in Acute and Persistent Asthma.

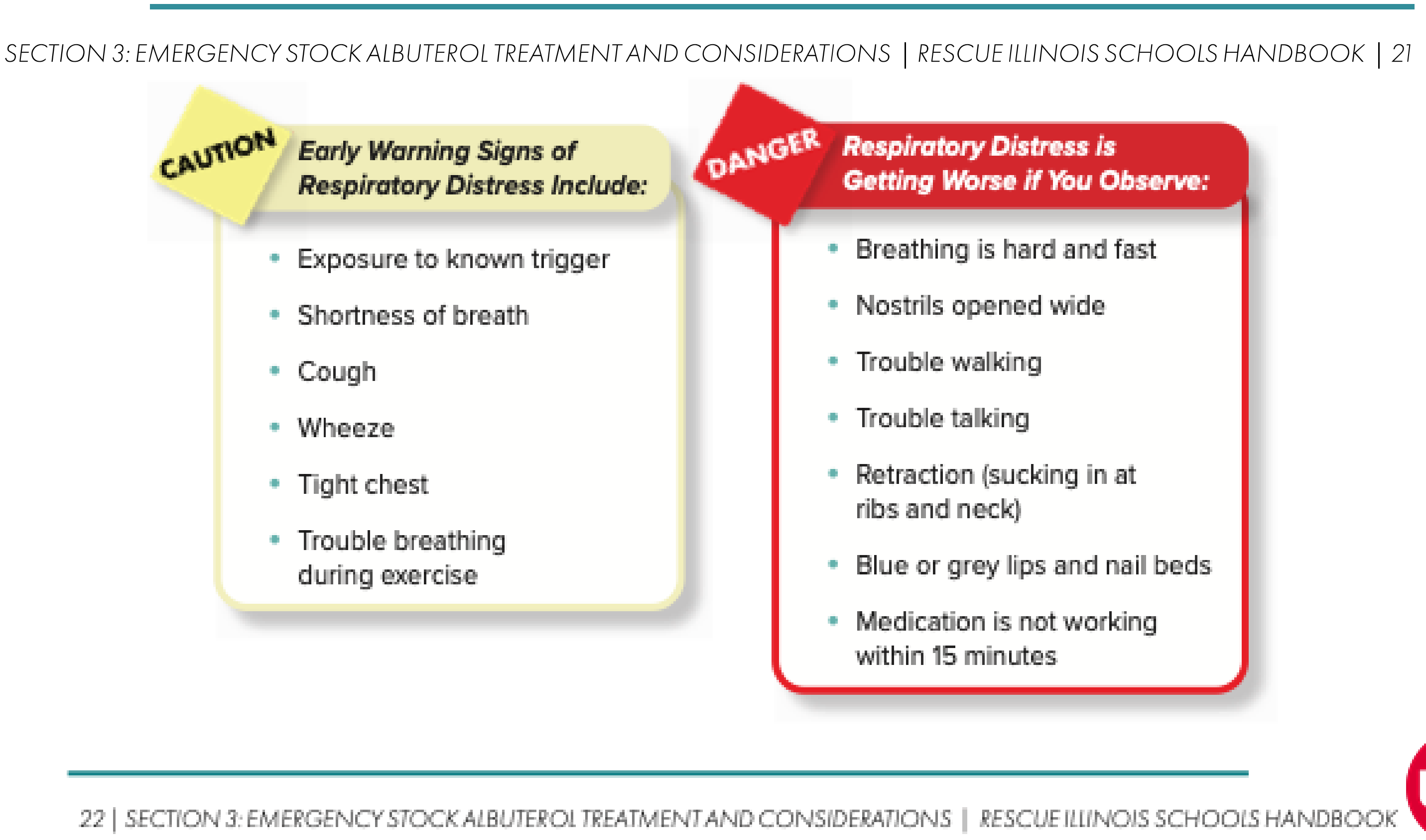
(NHLBI, 2007)

RESCUE, 2023

Objective 2: Review asthma pathophysiology

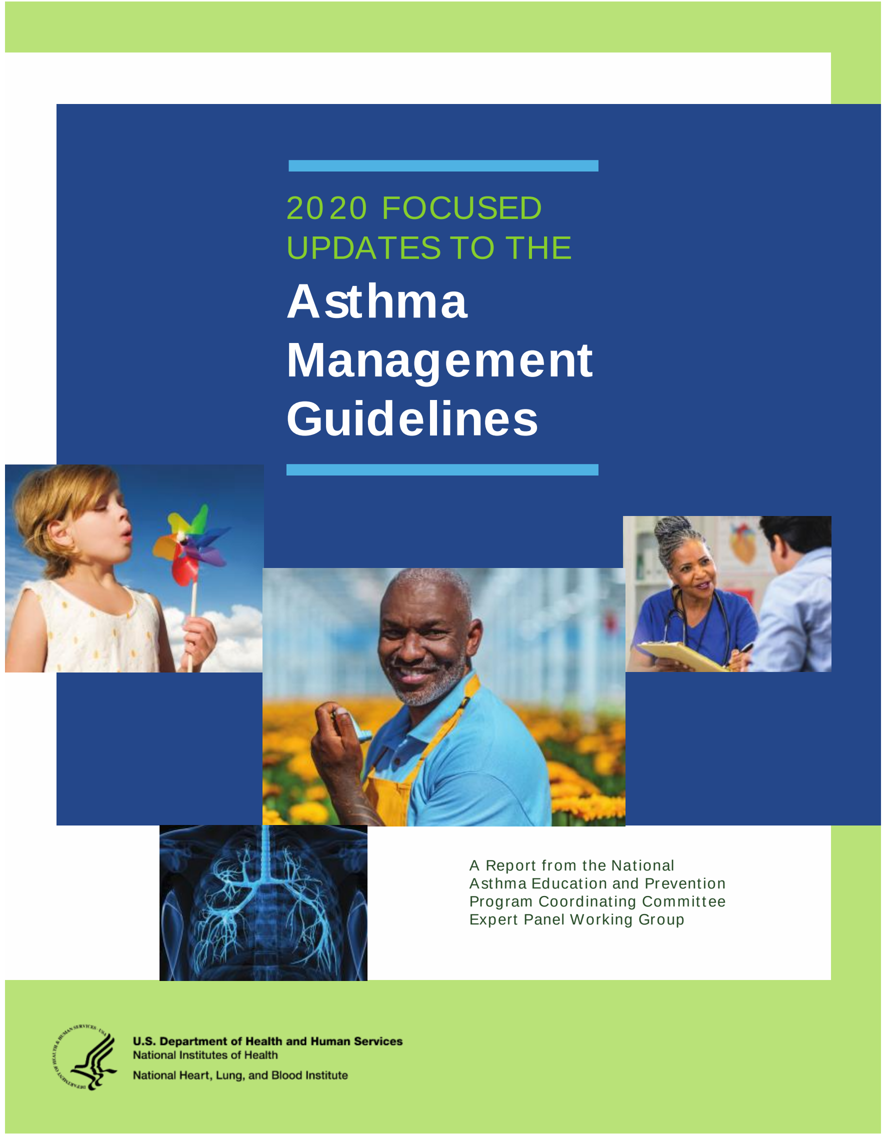
- Symptoms vary from person to person
- It is important to monitor for worsening symptoms over an extended period of time
- Monitoring at which stage of symptoms a person is experiencing can alter the steps needed to take care of them





Objective 3: Review the most recent asthma guidelines for outpatient management

- For newly diagnosed, select initial severity
- Escalates treatment as needed by using stepwise approach of asthma treatment
- De-escalation recommended only after patient's asthma is controlled for at least 3 consecutive months.
- For individuals with persistent asthma, treatment should be guided by the current step of treatment and their response to therapy weighing benefits and adverse effects.



NHLBI, 2020

Objective 3: Review the most recent asthma guidelines for outpatient management

Classification for the newly diagnosed

Initial Severity is important

Components of Severity		Classification of Asthma Severity (Children 5–11 years of age)			
		Intermittent	Persistent		
			Mild	Moderate	Severe
Impairment	Symptoms	≤2 days/week	>2 days/week but not daily	Daily	Throughout the day
	Nighttime awakenings	≤2x/month	3–4x/month	>1x/week but not nightly	Often 7x/week
	Short-acting beta_2-agonist use for symptom control (not prevention of EIB)	≤2 days/week	>2 days/week but not daily	Daily	Several times per day
	Interference with normal activity	None	Minor limitation	Some limitation	Extremely limited
	Lung function	• Normal FEV_1 between exacerbations • FEV_1 >80% predicted • FEV_1/FVC >85%	• FEV_1 = >80% predicted • FEV_1/FVC >80%	• FEV_1 = 60–80% predicted • FEV_1/FVC = 75–80%	• FEV_1 <60% predicted • FEV_1/FVC <75%
Risk	Exacerbations requiring oral systemic corticosteroids	0–1/year (see note)	≥2 in 1 year (see note) →		
		← Consider severity and interval since last exacerbation. Frequency and severity may fluctuate over time for patients in any severity category. →			
		Relative annual risk of exacerbations may be related to FEV_1			

NHLBI, 2007

Components of Severity		Classification of Asthma Severity (Youths ≥12 years of age and adults)			
			Persistent		
		Intermittent	Mild	Moderate	Severe
Impairment Normal FEV_1/FVC: 8–19 yr 85% 20 –39 yr 80% 40 –59 yr 75% 60 –80 yr 70%	Symptoms	≤2 days/week	>2 days/week but not daily	Daily	Throughout the day
	Nighttime awakenings	≤2x/month	3–4x/month	>1x/week but not nightly	Often 7x/week
	Short-acting beta$_2$-agonist use for symptom control (not prevention of EIB)	≤2 days/week	>2 days/week but not >1x/day	Daily	Several times per day
	Interference with normal activity	None	Minor limitation	Some limitation	Extremely limited
	Lung function	• Normal FEV_1 between exacerbations • FEV_1 >80% predicted • FEV_1/FVC normal	• FEV_1 ≥80% predicted • FEV_1/FVC normal	• FEV_1 >60% but <80% predicted • FEV_1/FVC reduced 5%	• FEV_1 <60% predicted • FEV_1/FVC reduced >5%
Risk	Exacerbations requiring oral systemic corticosteroids	0–1/year (see note)	≥2/year (see note) →		
		Consider severity and interval since last exacerbation. Frequency and severity may fluctuate over time for patients in any severity category.			
		Relative annual risk of exacerbations may be related to FEV_1			

Objective 3

NHLBI, 2007

The Risks of Mild Asthma

Taken from recent Global Initiative for Asthma (GINA)

- Patients with apparently mild asthma are still at risk of serious adverse events
  - 30–37% of adults with acute asthma
  - 16% of patients with near-fatal asthma
  - 15–27% of adults dying of asthma

  had symptoms less than weekly in previous 3 months *(Dusser, Allergy 2007; Bergstrom, 2008)*
- Exacerbation triggers are unpredictable (viruses, pollens, pollution, poor adherence)
- Even 4–5 lifetime OCS courses increase the risk of osteoporosis, diabetes, cataract *(Price et al, J Asthma Allerg 2018)*

GINA, 2023

Objective 2 and 3

Objective 3: **Review the most recent asthma guidelines for outpatient management**

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

2020 FOCUSED UPDATES TO THE
Asthma Management Guidelines

Intermittent Asthma	Management of Persistent Asthma in Individuals Ages 5–11 Years				
STEP 1	**STEP 2**	**STEP 3**	**STEP 4**	**STEP 5**	**STEP 6**
PRN SABA	Daily low-dose ICS and PRN SABA	Daily and PRN combination low-dose ICS-formoterol▲	Daily and PRN combination medium-dose ICS-formoterol▲	Daily high-dose ICS-LABA and PRN SABA	Daily high-dose ICS-LABA + oral systemic corticosteroid and PRN SABA

AND Low-Dose ICS
GINA 2023

NHLBI, 2020

GINA 2023 – Adults & adolescents 12+ years

Personalized asthma management
Assess, Adjust, Review
for individual patient needs

STEPS 1 – 2	**STEP 3**	**STEP 4**	**STEP 5**
As-needed-only low dose ICS-formoterol	Low dose maintenance ICS-formoterol	Medium dose maintenance ICS-formoterol	Add-on LAMA Refer for assessment of phenotype. Consider high dose maintenance ICS-formoterol, ± anti-IgE, anti-IL5/5R, anti-IL4Rα, anti-TSLP

RELIEVER: As-needed low-dose ICS-formoterol*

GLOBAL INITIATIVE FOR ASTHMA®

GINA, 2023

Anti-Inflammatory Reliever (AIR): Reliever medication that contains corticosteroid medication

Albuterol–Budesonide Fixed-Dose Combination Rescue Inhaler for Asthma

Alberto Papi, M.D., Bradley E. Chipps, M.D., Richard Beasley, D.Sc., Reynold A. Panettieri, Jr., M.D., Elliot Israel, M.D., Mark Cooper, M.Sc., Lynn Dunsire, M.Sc., Allison Jeynes-Ellis, M.D., Eva Johnsson, M.D., Robert Rees, Ph.D., Christy Cappelletti, Pharm.D., and Frank C. Albers, M.D.

Multi-national, DBRCT comparing Albuterol-Budesonide vs Albuterol alone as a rescue education in patients with uncontrolled moderate persistent asthma already on ICS maintenance.

Conclusion: Risk of Asthma Exacerbation was significantly lower in the combined group v albuterol alone

UIC

Objective 3

Maintenance and Reliever Therapy (MART):

The use of combined ICS-formoterol medication every day as a maintenance therapy

JAMA | Original Investigation

Association of Inhaled Corticosteroids and Long-Acting β-Agonists as Controller and Quick Relief Therapy With Exacerbations and Symptom Control in Persistent Asthma

A Systematic Review and Meta-analysis

Meta-analysis looking at 16 Randomized Control Trials comparing combined therapy with ICS maintenance with SABA reliever

- 12 and older (n=22,524): SMART: reduced risk of asthma exacerbations compared to same dose controller therapy, and higher dose controller alone +SABA
- Data for 4-11 year old children was inconclusive

Exercise Induced Asthma (EIB)

- Airway inflammation that occurs during times of exercise leading to shortness of breath and wheezing.
- Global Initiative for Asthma found that Combined Inhaled Corticosteroids-Long-Acting Beta-Agonists show benefit in EIB.
- Pre-exercise and during exercise intermittent Albuterol (or SABAs) or ICS have shown to have a tolerating effects
- GINA states there needs to be more study into the use of combined medications in EIB in comparison to intermittent SABA or ICS

Uncontrolled Asthma as a Child Leads to Adult Asthma Problems

Uncontrolled Childhood Asthma

More Frequent Asthma Exacerbations

(CDC, 2015)

(O'Byrne et al., 2013)

(Sousa et al., 2020)

Missed School Days

Increased Stress, Obesity, and Comorbidities

Fixed Obstruction
*irreversible, accelerated decline in lung function"

(Hsu et al., 2016)

(Sullivan et. al., 2018)

(To et al., 2020)

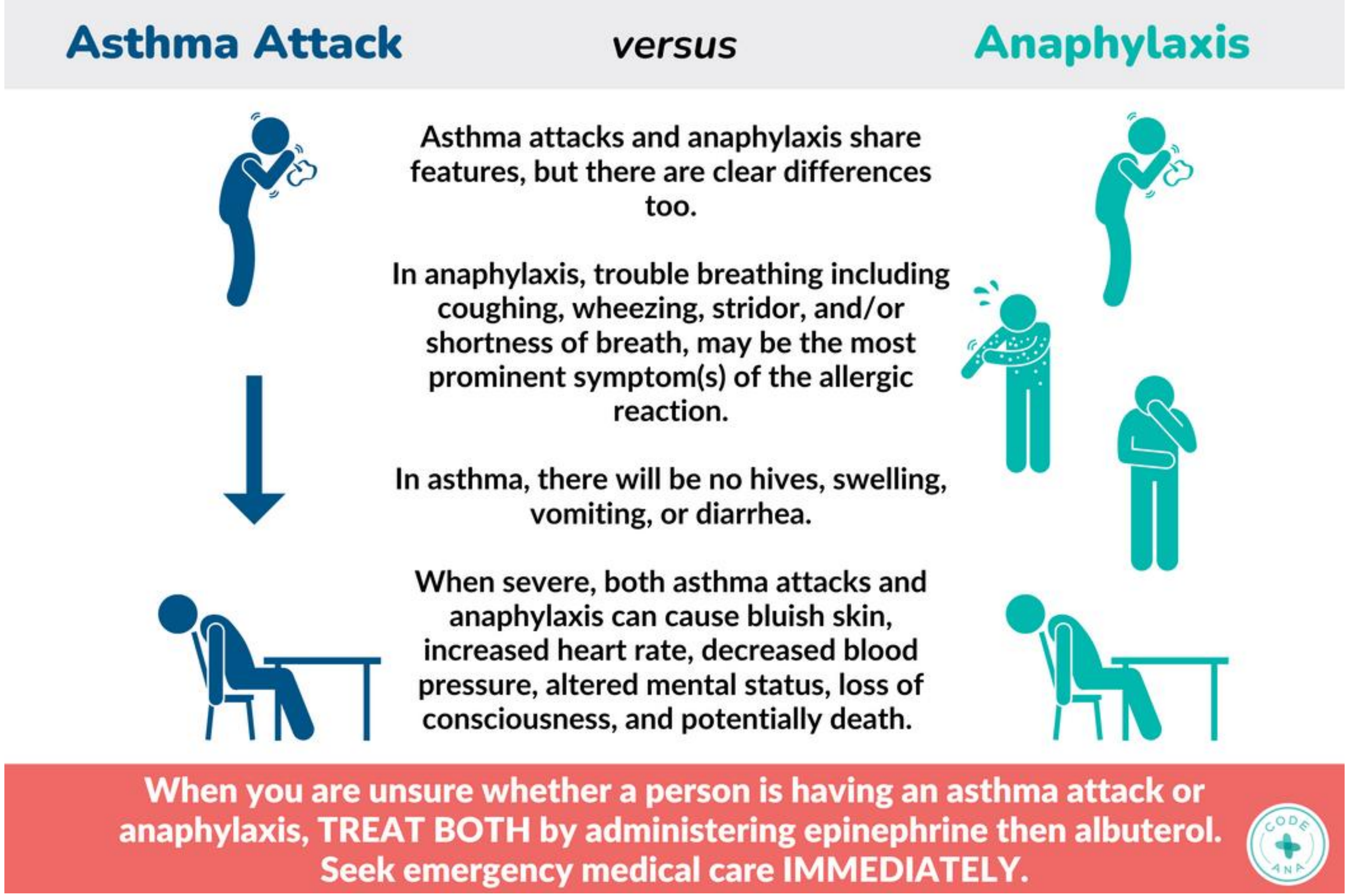
Missed Learning

Reduced Earning Potential

Worse Health in Adulthood

Objective 2 and 3

A Quick Note about Anaphylaxis



AAAAI, 2023

Objective 2

IL Capitol Building

Note: This is an image of the Illinois State Legislature in Springfield. From "Income tax credits abound in early bills introduced to Illinois General Assembly" (https://www.sj-r.com/gcdn/presto/2021/10/20/NSJR/f0c2e39f-8820-4dc6-8a2e-a13ff3ad97e8-ILSPR-10202021-PHOTO-Statehouse-11.jpg?width=660&height=430&fit=crop&format=pjpg&auto=webp). Copyright 2023 by Justin Fowler

Objective 4: Examine how state-based and school-based policy have the studied positive asthma outcomes

School-Related Asthma Legislation in Illinois

2001 — Self-Carry Law

Students can bring their asthma medication with them at school if they have a note from a provider

2010 — Self-Carry Law Amended

Self-Carry Law Amended so that students only need parental permission and a prescription label to self-carry

2016 — Asthma Emergency Protocol

Schools must have a protocol of what to do in case of asthma emergency

2018 — Stock Inhaler Law

Schools can choose to stock undesignated asthma medication.

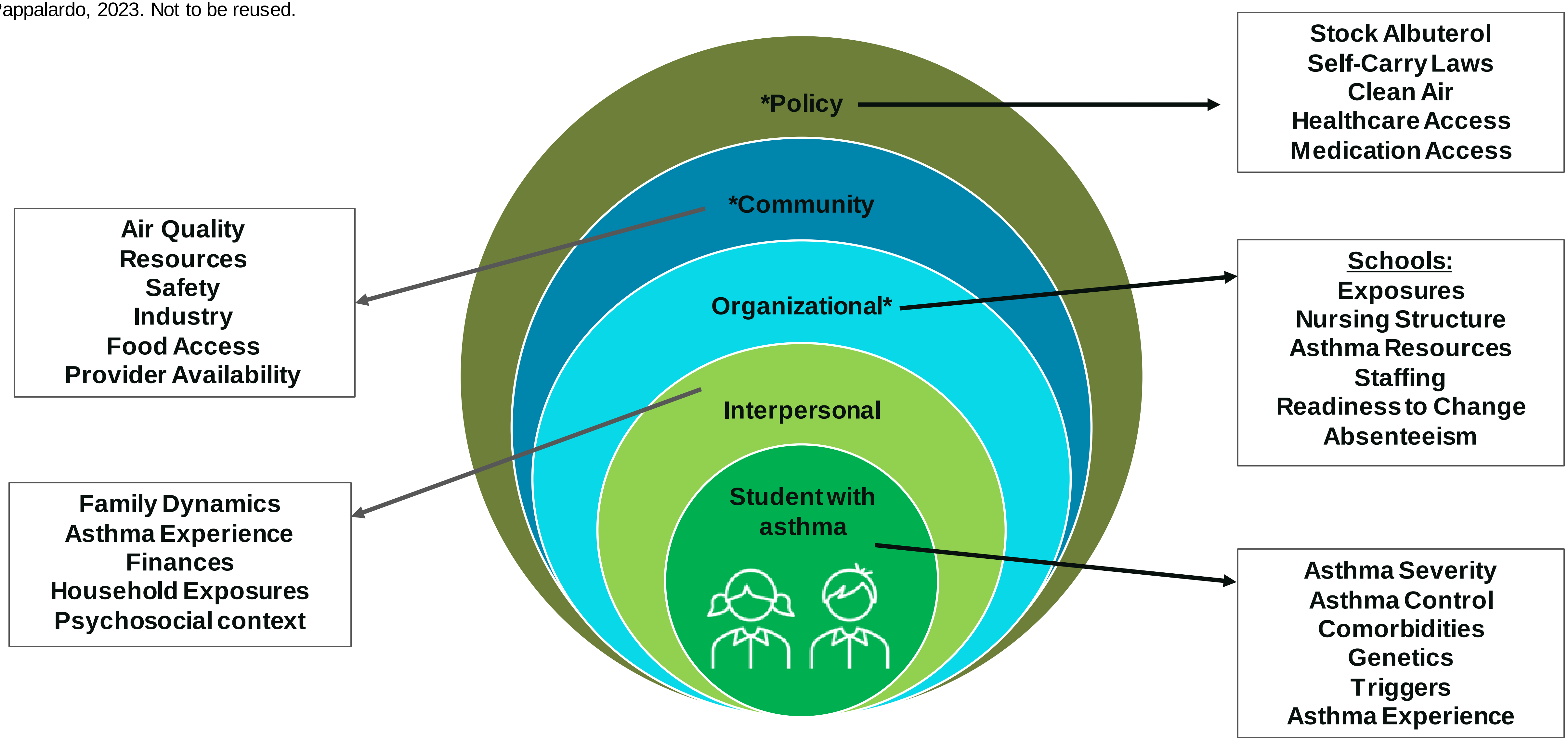
Step Therapy

Less expensive medication, including some asthma, must be tried before insurance may cover some more expensive medications

(AAFA, 2020)

Multi-level Asthma Interventions are Critical to Improving Pediatric Asthma Outcomes

Pappalardo, 2023. Not to be reused.



* Main Area of Focus for Project

Previous School-Based Legislation

ASTHMA ACTION PLAN

Asthma and Allergy Foundation of America
aafa.org

Name:	Date:
Doctor:	Medical Record #:
Doctor's Phone #: Day	Night/Weekend
Emergency Contact:	
Doctor's Signature:	

The colors of a traffic light will help you use your asthma medicines.

GREEN means Go Zone! Use preventive medicine.
YELLOW means Caution Zone! Add quick-relief medicine.
RED means Danger Zone! Get help from a doctor.

Personal Best Peak Flow: ____________

GO	Use these daily preventive anti-inflammatory medicines:		
You have *all* of these: • Breathing is good • No cough or wheeze • Sleep through the night • Can work & play. Peak flow: from ____ to ____	MEDICINE	HOW MUCH	HOW OFTEN/WHEN
	For asthma with exercise, take:		

CAUTION	Continue with green zone medicine and add:		
You have *any* of these: • First signs of a cold • Exposure to known trigger • Cough • Mild wheeze • Tight chest • Coughing at night. Peak flow: from ____ to ____	MEDICINE	HOW MUCH	HOW OFTEN/ WHEN
	CALL YOUR PRIMARY CARE PROVIDER.		

DANGER	Take these medicines and call your doctor now.		
Your asthma is getting worse fast: • Medicine is not helping • Breathing is hard & fast • Nose opens wide • Ribs show • Can't talk well. Peak flow: reading below ____	MEDICINE	HOW MUCH	HOW OFTEN/WHEN

GET HELP FROM A DOCTOR NOW! Do not be afraid of causing a fuss. Your doctor will want to see you right away. It's important! If you cannot contact your doctor, go directly to the emergency room. **DO NOT WAIT.** Make an appointment with your primary care provider within two days of an ER visit or hospitalization.

AAFA

Asthma Action Plan

[Illinois Public Act 099-0843]

MCHS HEALTH OFFICE

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PerdueCathy@dist156.org
P: 815.363.2243

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McHenry, IL 60050
ClassNicole@dist156.org
P: 815.759.5497
WinkelmanSheila@dist156.org
P: 815.759.5498

EMERGENCY MEDICATION SELF-ADMINISTRATION FORM

To be completed by the student's physician, physician assistant with prescriptive authority, or advanced practice RN with prescriptive authority. This is only for self-administration of authorized emergency medication. A new form must be completed every school year.

Student's Name: ______________________ **Birth Date:** ____________

Any change in dosage or administration time must be authorized by a physician in writing.

*I certify that ______________________ has been instructed in the use and self-administration of ______________________.

He/she understands the need for the medication and the necessity to report to school personnel any unusual side effects.

Diagnosis/Reason for Administration: ______________________

Prescriber's Name: ______________________ Phone: ____________
Address: ______________________ Fax: ____________
Prescriber's Signature: ______________________ Date: ____________

PARENT/GUARDIAN CONSENT FOR STUDENT TO SELF-ADMINISTER EMERGENCY MEDICATION

I authorize the School District and its employees and agents, to allow my child to self-carry and self-administer his/her asthma medication and/or epinephrine-injector: (1) while in school, (2) while at a school-sponsored activity, or (3) before or after normal school activities, such as while in before-school or after-school care on school-operated property. Illinois law requires the School District to inform parent(s)/guardian(s) that is, and its employees and agents, incur no liability, except for willful and wanton conduct, as a result of any injury arising from a student's self-carry and self-administration of asthma medication or epinephrine-injector. 105 ILCS 5/22-30, amended by P.A.s 100-726 and 100-799, eff. 1-1-19.

Please sign to indicate (a) receipt of this information, and (b) authorization for your child to carry and use his or her emergency medication.

Parent/Guardian Printed Name: ______________________ Emergency Phone: ____________

Signature: ______________________ Date: ____________

WWW.DIST156.ORG I FAX:(815)246-0089 INTERPRETER DE ESPANOL: ORTEGALORENA@DIST156.ORG (815)759-5519

PARTNERING WITH THE COMMUNITY TO ACHIEVE EXCELLENCE

Dist 156

Self-Administration

[Public Act 92 0402]

Use your "Mouse" or "Tab" key to move through the fields and check boxes. After completing last field, save document to hard drive to make future updates or click Print button.

Illinois State Board of Education
100 North First Street
Springfield, Illinois 62777-0001

UNDESIGNATED EPINEPHRINE REPORTING FORM

WELLNESS DEPARTMENT

Directions: This form must be completed within three (3) calendar days after the administration of any undesignated epinephrine auto-injector. All completed forms must be submitted via online collection portal webpage.

DISTRICT NAME AND NUMBER	RCDT CODE [Click Here to Find Code]	NAME OF SCHOOL

ADDRESS (Street, City, State, ZIP Code)	CONTACT PERSON COMPLETING FORM
TELEPHONE (Include Area Code)	CONTACT EMAIL
DATE OF INCIDENT	TIME OF INCIDENT ____________ a.m. ____________ p.m.

1. Age of individual receiving epinephrine: ___________
2. Description of person receiving epinephrine: ***(Check one only)***
   - ☐ a. Student
   - ☐ b. Staff member
   - ☐ c. Visitor
   - ☐ d. Other (please specify) ______________________
3. Was there any previously known diagnosis of a severe allergy?
   - ☐ a. Yes
   - ☐ b. No
4. Trigger that precipitated this allergic episode: ***(Check 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) ______________________
5. Location of where symptoms developed: ***(Check one only)***
   - ☐ a. Within school building
   - ☐ b. On school grounds
   - ☐ c. Other (e.g., school activity location, field trip location, etc.) ______________________
6. Number of doses administered: ___________
7. Type of person administering the epinephrine: ***(Check one only)***
   - ☐ a. Registered Nurse
   - ☐ b. Trained Personnel
   - ☐ c. Student
   - ☐ d. Other (please specify) ______________________

Comments ***(Please contain your response into the space provided)***:

ISBE 34-20 (9/23) Print Reset Form

ISBE

Undesignated Epinephrine

[410 ILCS 27/ Epinephrine Injector Act]

Objective 5: **Understand how stock asthma medications can improve school based asthma care**

Public Act 100-0726

Stock Inhaler Law, 2018

Illinois law allows schools to stock undesignated asthma medication (inhalers)

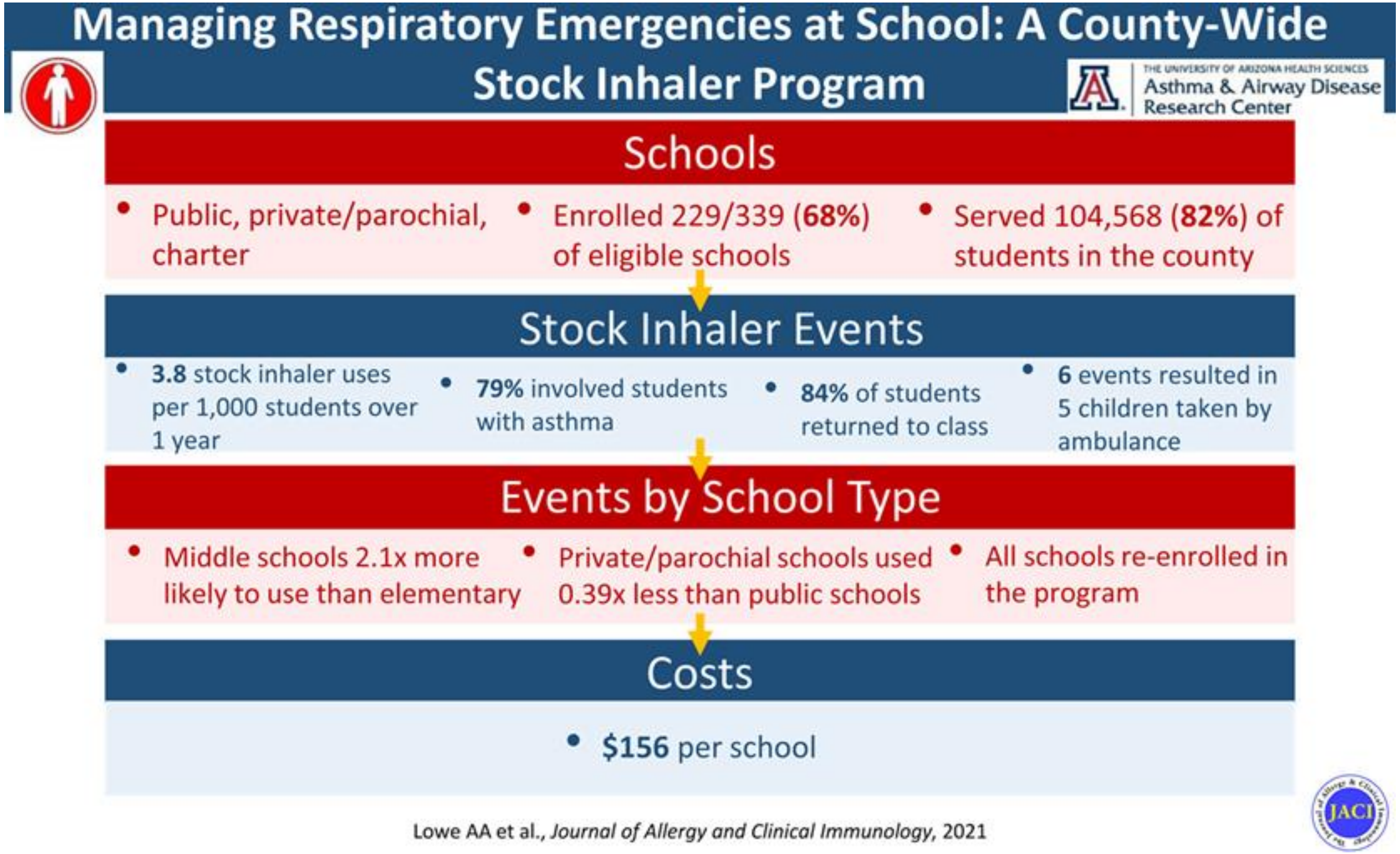
Nurses and/or other trained personnel may administer undesignated asthma medication to **any person** they reasonably believe to be in respiratory distress

Staff administering stock inhalers, the school district as a whole, and the prescriber are all **immune from liability**

Stock inhalers may be administered to any person in respiratory distress **at any time on school grounds** or while the person is under supervision of school personnel

Preliminary Evidence of Policy Short-term and Intermediate Outcomes

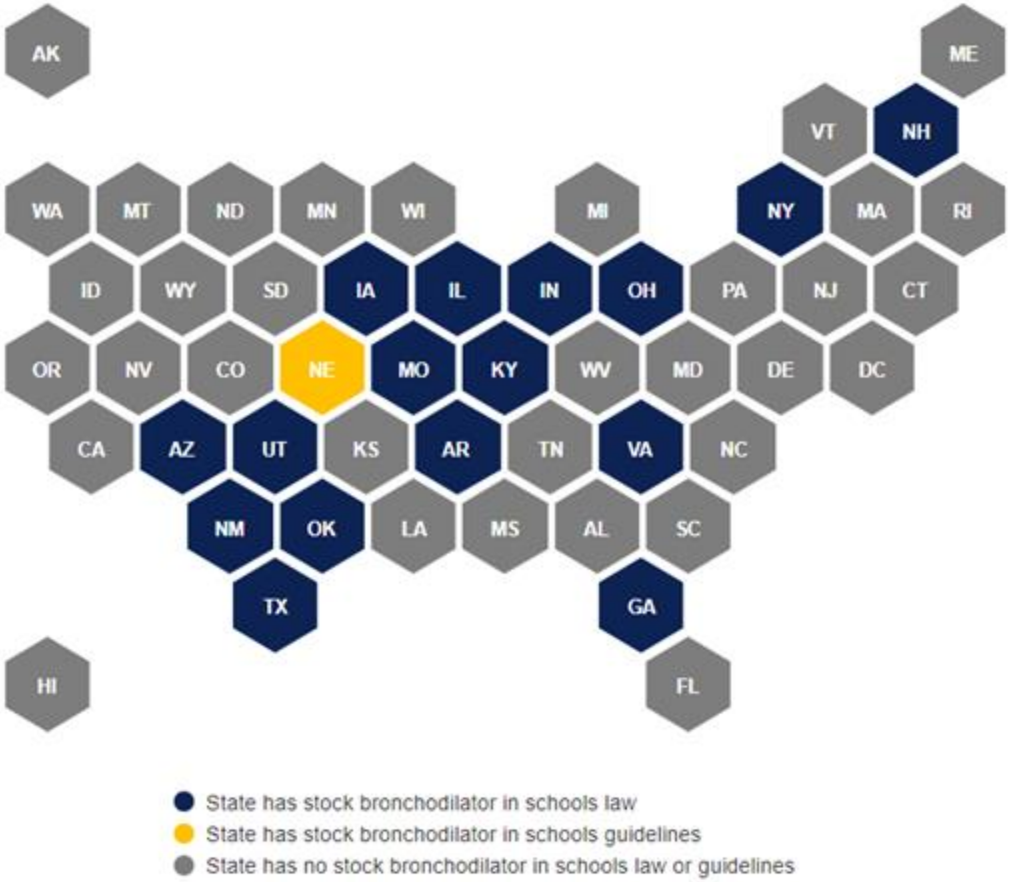
Note: This table details the sites and outcomes of a stock inhaler program conducted in an Arizona county. *From "Managing respiratory emergencies at school: A county-wide stock inhaler program" (https://linkinghub.elsevier.com/retrieve/pii/S0091674921001755). Copyright © 2021 by Lowe et al.*



Stock Albuterol/Inhaler Policy in the United States

- 16 states with stock albuterol laws
- 1 additional state with guidelines
- Goal is to spread to all 50 states and to provide guidance to implementation

State Map of Stock Inhaler Legislation



Note: This figure displays stock inhaler legislation status by state

From: "Asthma Medication in Schools" (https://www.lung.org/lung-health-diseases/lung-disease-lookup/asthma/health-professionals-educators/asthma-in-schools/asthma-medication-in-schools). Copyright © 2023 by ALA

School Nurses are Champions

IASN

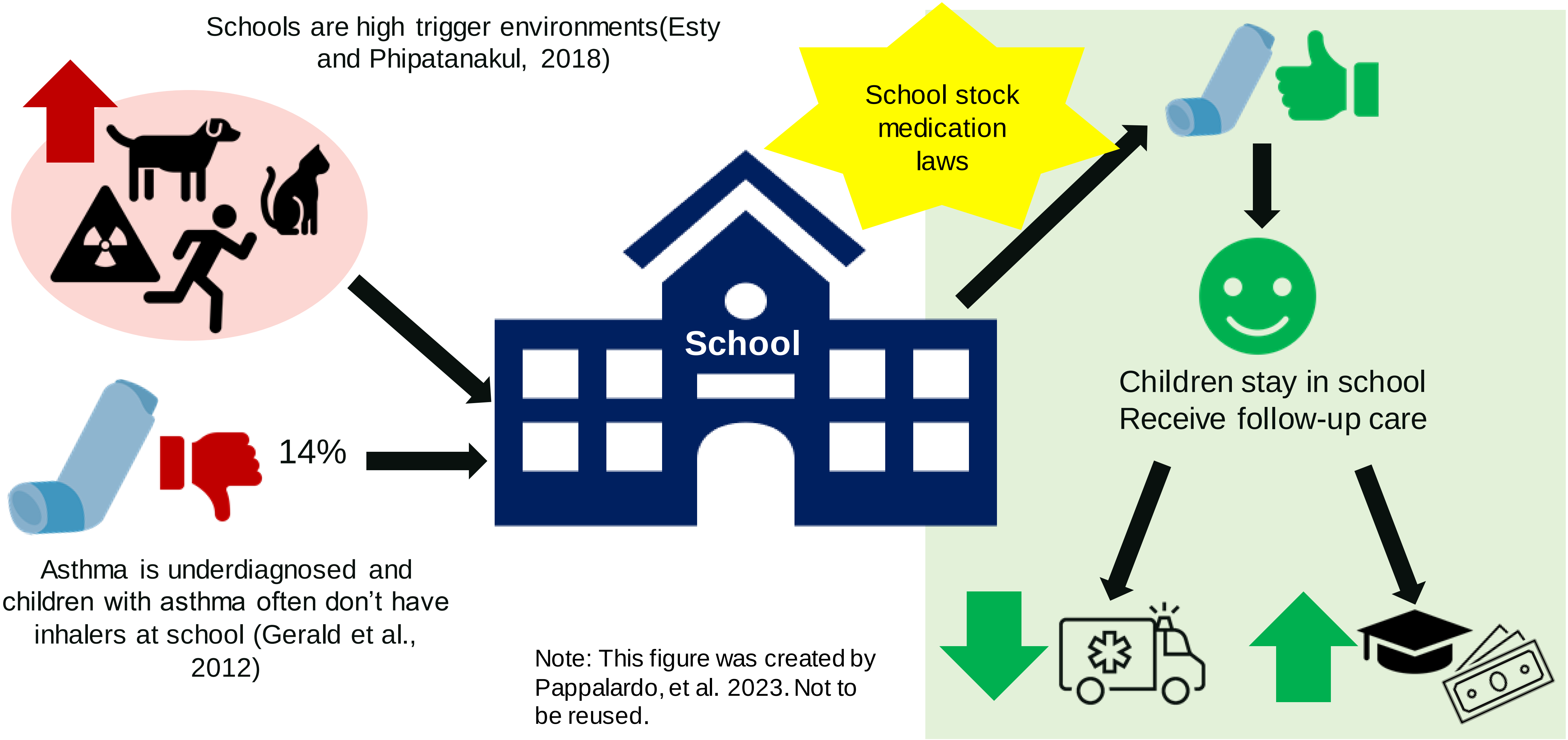
Over half of nurses (52%) surveyed they found out about an asthma diagnosis during event at school with 27% occurring during an emergency episode (RHA, 2020)

Nurses are the most knowledgeable about the success of implementation

Nurses are often working at multiple schools and cannot be present at all time

Nurses must be a crucial part of how legislation is structured

High-Level Overview of School-Based Asthma



Note: This figure was created by Pappalardo, et al. 2023. Not to be reused.

Stock Inhaler For Schools Programming

Schools can implement a stock inhaler program for respiratory distress

1. Rescue/Reliever inhaler (i.e., albuterol)

Note: Example Inhaler From “Asthma Inhaler Medicine Image” (https://pixabay.com/photos/asthma-inhaler-medicine-asthmatic-938695/). Copyright 2015 from Debbienews

2. Supply of disposable valved holding chambers (e.g., LiteAire®)

Note: Example Spacer/Valved Holding Chamber. From “LiteAire Holding Chamber - 1304” (https://www.blowoutmedical.com/media/catalog/product/cache/80b61aaac520791686f933f4a9244b10/t/h/tha1304.jpg. Copyright from Thayer

3. Standing medical order and protocol

STANDING MEDICAL ORDER FOR THE EMERGENCY ADMINISTRATION OF SHORT-ACTING BRONCHODILATOR (E.G., ALBUTEROL INHALER) BY A TRAINED INDIVIDUAL FOR A STUDENT EXHIBITING RESPIRATORY DISTRESS PURSUANT TO PUBLIC ACT H.B. 2208

STANDING ORDER ISSUED TO:

Name of School District (If applicable)

Name of School

School Street Address

City | AZ State | Zip Code

STANDING ORDER:

ASSESSMENT:

IMPLEMENTATION AND STANDING MEDICAL ORDER:

Note: Example Standing Order. From “”STANDING MEDICAL ORDER.” (https://www.azasthma.org/resources/Documents/Standing%20Medical%20Order%20Template.pdf). Copyright from Arizona Asthma Coalition.

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Using The Medication

How to Administer Undesignated Asthma Medication With Spacer

These are general guidelines.

Personnel assisting with respiratory distress should consult the manufacturer's instructions for specific medication and devices to ensure medication is administered and absorbed as intended. (American Lung Association, 2022)

1. Wash Hands.

2. Gather supplies and make sure the inhaler is clean, free from foreign objects, & within the expiration date.

3. Remove the cap from the inhaler and shake well, for 5 seconds. See below for more about "priming."

4. Connect the mouthpiece of inhaler to the base of spacer.

5. Instruct individual to hold their head in a neutral position or to tilt their head back slightly.

6. Instruct individual to breathe all the way out.

7. Instruct individual to put the mouthpiece of the spacer in their mouth, over their tongue, & close their lips around it.

8. Press down on the inhaler or activate the device once.

★ 9. Instruct individual to breathe in slowly & deeply for 3-5 seconds, then to hold their breath for 10 seconds.

10. Wait one minute & repeat, if needed.

★ It is important to breathe in slowly and hold the breath so the medication has time to go to the lungs.

What is "Priming"?

"Priming" an inhaler means activating the inhaler (usually twice) before using it to give a dose. Priming ensures that the correct dose of medication is given when the inhaler is being used as intended. Prime the inhaler if*:

- It has not been used before.
- It has not been used for more than 7 days.
- It has been dropped.

*Refer to manufacturer guidelines for specific information about priming.

AAAAI, 2023

ANY Trained Employee

Allows for large increase in the assistance nurses receive to improve asthma care

TRAIN Illinois

HOME COURSE CATALOG CALENDAR RESOURCES HELP

Stock Albuterol Training for Illinois School Personnel (IDPH)

Back

To access this content, you first need to create an account. If you already have an account, please login.

Web-based Training - Self-study | ID 1100900 | Skill level: Introductory | 0.3h

★★★★☆ (211)

Implementation Guidance for Quick-Relief Stock Asthma Medication

1. Describe Public Act 100-0726, which is the legislation that allows schools to carry undesignated stock asthma rescue medication in schools.
2. Recognize the state of asthma in Illinois, particularly among children, and discuss why this kind of legislation is important to help reduce asthma episodes or emergencies (sometimes referred to as asthma attacks).
3. Apply how stock asthma rescue medication in schools fits into the Illinois State Board of Education's model asthma emergency response protocol.
4. Recognize the signs of respiratory distress and describe guidelines for the administration of undesignated asthma medication.

This training is intended to be an overview for school nurses and school staff. The presentation references Illinois State Board of Education model policies and procedures for administration of stock asthma medication. Please check with local administration regarding any school-specific policies and procedures.

Show Less

Train.org, 2019

Objective 5

UIC

Spacers provide a great benefit when administering most types of Metered Dose Inhalers

Spacer being used by child during Metered dose inhaler administration

RESCUE, 2023

- Spacers can be easily attached to Metered Dose Inhalers
- The aerosolized medication remains aerosolized within the spacer chamber
- Allow for a non-coordinated method for actuation-inhalation administration of medication
- Coordinating breathing during these episodes can be difficult
- Younger children can also have difficulty following these instructions
- Not used for Dry Powder Inhalers

Stock Inhaler For Schools Programming

RETURNING TO CLASS AFTER AN EMERGENCY

One goal of the undesignated asthma medication policy is to swiftly address an asthma flare-up in the school with as little disruption to the student's day as possible. If an asthma flare-up is mild and effectively managed with quick-relief medication, the school should follow their standard protocol to determine if the student should return to class.

It should be noted that in some cases trained staff may administer stock albuterol to a student who, while not in an emergency situation, will nonetheless benefit from medication. In these instances, it is probable that the student with asthma can receive the medication and resume their normal school day activities and/or return to their classroom.

RESCUE, 2023

STANDARD PROCEDURES AND PROTOCOLS FOR EMERGENCY USE

CAUTION

If a student presents with symptoms in the caution zone:

1 ASSESS · 2 NOTIFY · 3 MOVE · 4 MEDICATION · 5 MONITOR

1. Assess the student for asthma episode symptoms;
2. Call the student's parent or guardian;
3. Notify the school nurse or appropriate administrator of student's condition;
4. Move the student the shortest distance possible away from their triggers;
5. Administer quick-relief medication;
6. Monitor the student—do not leave them alone for 30 minutes or until improved;
7. If not improved or worsening after 30 minutes, re-administer medication; and
8. If no improvement 30 minutes after re-administration of medication, call 911.

DANGER

If a student presents with one or more symptoms in the danger zone:

1 911 · 2 MEDICATION · 3 NOTIFY · 4 GUARDIANS

1. Call 911 immediately and administer quick-relief medication;
2. Call the student's parent or guardian;
3. Notify the school nurse or appropriate administrator; and
4. Monitor the student—never leave them alone while waiting for 911 response.

Qualitative Date Analysis 1: Stock Inhaler Programming: Qualitative Data Analysis of Illinois Public Policy Implementation Efforts

- A total of **19 interviews** were conducted with:

IL School Health Administrators & Nurses

IL Governing Bodies

State and National Advocacy Organizations

- October 2021 through May 2022
- Interviews conducted online via Zoom or email
- Compensated for their time and offered an opportunity for follow-up

Qualitative Data Analysis of Key Stock Inhaler Stakeholder Results

Most Common Facilitators:	
Theme	# of Interviews Mentioned
Found a provider	9
State/District has funding	9
Champions	8
Enough nurses/nurse in every school	7
Found a cheaper option for filling prescription	5
Pharmacy filled prescription	5
Sent law	5

Most Common Barriers:	
Theme	# of Interviews Mentioned
Pharmacy refusal to fill Prescription	6
Not enough nurses/not a nurse in every school	5
Cannot find a provider/No provider	4
Difficult to coordinate follow-up care	4
Confusion over law	3
Do not want children to be reliant on stock medicine	3
Too Overwhelmed	3

Note: This figure was created by Pappalardo, et al. 2023. Not to be reused.

Finding a Pharmacy to Obtain Supplies

Provided standing orders and medication/supplies

AAFA

- National patient advocacy organization
- Currently accessing Illinois inhaler funding
- Creates stock inhaler kits

Local Health Departments

- offer free stock inhaler prescriptions.

Only provided medication/supplies

BioRidge Pharma

- School medication distribution company
- Currently provides stock epinephrine for schools

Cook County Walgreens

- Working to create hubs that can fill stock prescriptions

Finding a Prescriber

- Reaching out to nurse champions in the area
  - Where have they gotten their inhalers?
- Local prescribers
- Local County Health Departments

- Provide stock inhalers through the study
  - Not preferred -> not sustainable

Funding: RESCUE Program

https://aafastl.org/rescue-illinois-schools

- The Illinois state legislature has provided funding for stock inhaler programs in schools
- The Respiratory Health Association and Allergy and Asthma Foundation of American will be providing the following to eligible schools
  - Training
  - Standing Orders
  - Medications/Supplies
- 80% of IL schools/districts are automatically enrolled
- 20% of schools that did not get funded are mostly in rural areas
- Private schools are not included in this funding

RESCUE

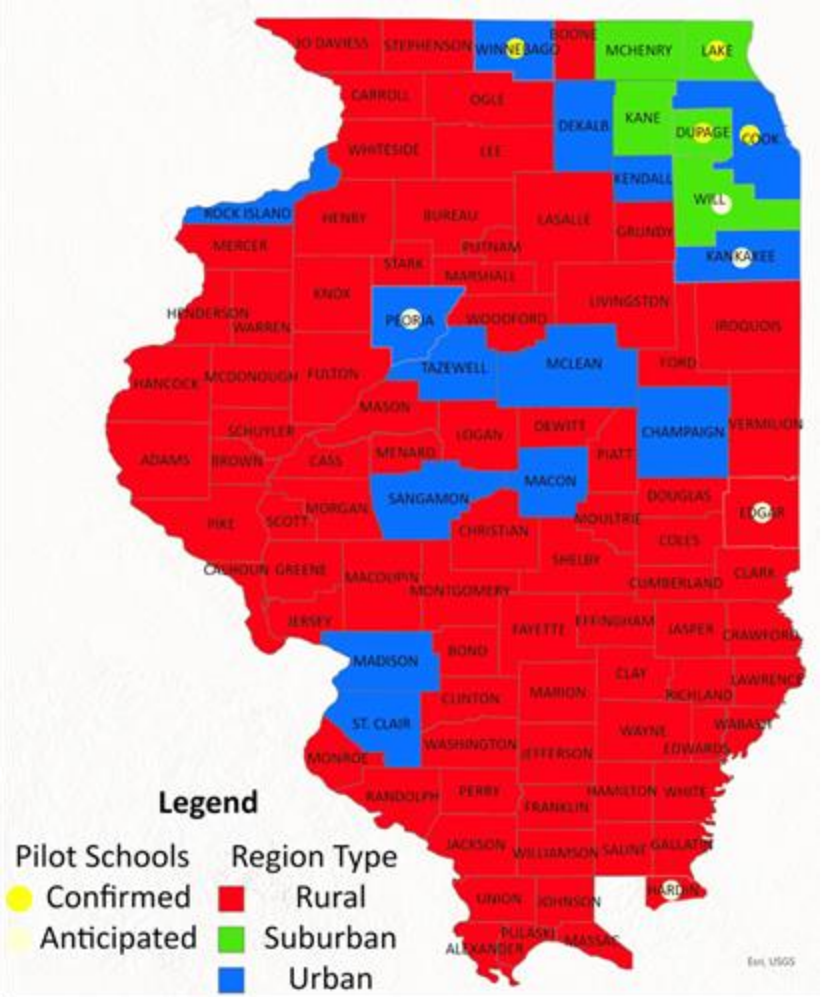
Resources for Every School Confronting Unexpected Emergencies

Asthma and Allergy Foundation of America

RESPIRATORY HEALTH ASSOCIATION®

UIC

Pilot Locations by County



Piloted programs in areas known to be of high asthma burden by healthcare utilization and prevalence data from the IL Department of Public Health

Note: This figure was created by Pappalardo, et al. 2023. Not to be reused.

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Questions?

QUESTIONS?

UNIVERSITY OF ILLINOIS CHICAGO

Thank You for allowing me to present today

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