

TEAMING UP FOR ASTHMA CONTROL: *A SCHOOL-BASED PROGRAM TO SUPPORT IMPROVED ASTHMA CONTROL AND COMMUNICATION ACROSS SETTINGS OF CARE*

TAMMY ROOD, DNP, CPNP-PC, AE-C & REBECCA BROWN, MPA, AE-C, RRT

ASTHMA READY COMMUNITIES, COLUMBIA, MO

THE GOAL OF ASTHMA MANAGEMENT

Children should live happy, healthy, physically active lives, without asthma symptoms slowing them down



ASTHMA CARE QUICK REFERENCE (EPR3)

[HTTP://WWW.NHLBI.NIH.GOV/GUIDELINES/ASTHMA/ASTHMA_QRG.PDF](http://www.nhlbi.nih.gov/guidelines/asthma/asthma_qrg.pdf)

Asthma Care Quick Reference

DIAGNOSING AND MANAGING ASTHMA

Guidelines from the National Asthma Education and Prevention Program

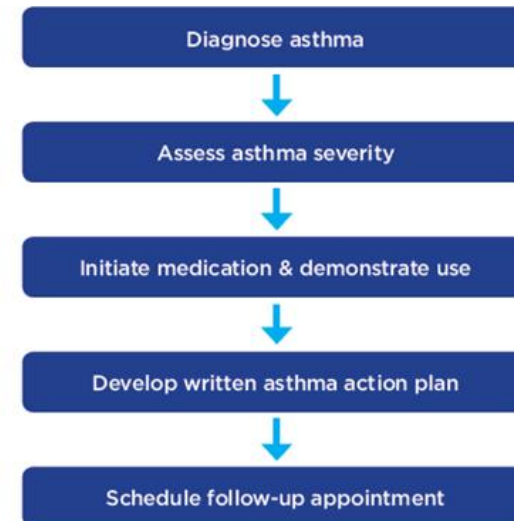
EXPERT PANEL REPORT 3

The goal of this asthma care quick reference guide is to help clinicians provide quality care to people who have asthma.

Quality asthma care involves not only initial diagnosis and treatment to achieve asthma control, but also long-term, regular follow-up care to maintain control.

Asthma control focuses on two domains: (1) **reducing impairment**—the frequency and intensity of symptoms and functional limitations currently or recently experienced by a

INITIAL VISIT



EPR3 guidelines: Key Educational Messages

Teach and Reinforce at Every Opportunity

- Basic facts about asthma
- Define well-controlled asthma and patient's current level of control
- Roles of medications – Differences between controller medications and quick relievers
- Asthma Skills: Inhaler/device techniques, triggers, monitoring using an asthma action plan, and seeking appropriate medical care



IMPROVE ASTHMA ASSESSMENT & EDUCATION FOR SELF CARE AT SCHOOL

- The 1st component of care “Assessment & Monitoring”
- Reality check – 0.5-1.6 outpatient visits per year for MO Medicaid children with asthma
- Challenge – obtain “Assessment & Monitoring” data at an affordable cost
- Objective – school-based services to support clinical decision-making, provide care and education to improve patient outcomes

OPPORTUNITY #1 FREE ASTHMA TRAINING & RESOURCES

Improve Asthma Control to Your Students and Improve Communication With Students and Their Families by Delivering Teaming Up for Asthma Control



Teaming Up for Asthma Control

- Aim: Improve asthma control in school age children in MO
- School Nurse Intervention:
 - Clinically relevant assessment of impairment
 - Monitoring and reporting asthma control status
 - Improving student self-care
 - Promote family education, healthy homes

Design / Methods



- Teaming Up for Asthma Control©
 - 54 Missouri school nurses
 - Standardized modules
 - 2.5 hours on-line training
 - Pre/post test
- Assessment equipment
 - Forced expiratory volume in 1 second, FEV1 (ASMA-I®)
 - Inhalation technique (In Check Dial®)
- Asthma literacy curriculum
 - Standardized, multimedia for school and home use
 - IMPACT Asthma Kids©, EPR3

Online training available through Moodle – University of MO School of Medicine

▼ TUAC ONLINE

- ▶ Participants
- ▶ General
- ▶ TUAC Pretest
- ▶ Overview and Introduction to
TUAC Curriculum (38 m...)
- ▶ Student Asthma Literacy
Program (35 minutes)
- ▶ Expert Asthma Guidelines (57
minutes)
- ▶ Asthma Tools (30 minutes)
- ▶ TUAC Post-Test

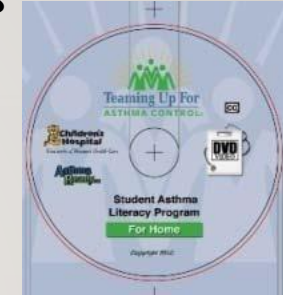
Design / Methods

- Students enrolled by school nurses (n = 176)
 - Checklist to identify children with persistent asthma
 - Three encounters at school
 - Forced expiratory volume in one second (FEV1)
 - Impairment -*Children's Health Survey for Asthma – Child Version*, American Academy of Pediatrics (CHSA-C)
 - Psychosocial wellbeing (CHSA-C)
 - Adequacy of ICS inhaler technique (IFR & IFT)
 - Identification of medication / inhaler (access & use)
 - ETS and other environmental factors (CARAT)
 - Self-care education by IMPACT Asthma Kids ©

TUAC Intervention – Self-Management Education

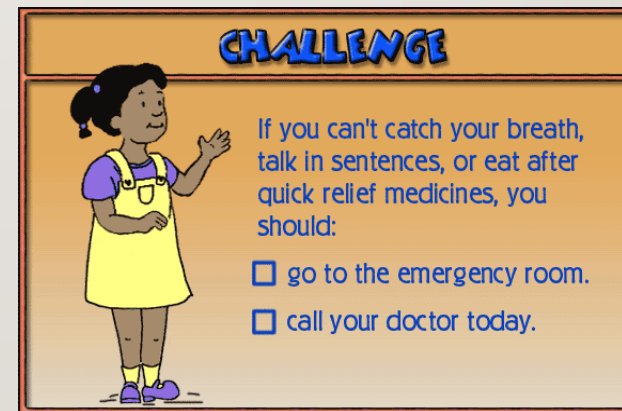
At school students watch a 15 minute CD/DVD based on IMPACT- Asthma Kids

Identification of ICS inhaler medication by color chart, VHC use, target time, trigger avoidance



IMPACT Asthma Kids©

“Control Medications” & “Chris’ World”



Krishna S, Francisco BD, Balas EA et al. *Pediatrics* 2003; 111(3): 503-510.

Teaming Up for Asthma Control

– School-Age Children

- Asthma literacy program coupled with school nurse competency training
- Focuses on 4 key messages:
 1. Airflow must be measured to know how much asthma is limiting breathing
 2. Inhaled corticosteroids must be taken every day to improve asthma control
 3. Breathing medicines into the lungs requires practice and coaching
 4. Triggers should be avoided to keep asthma from getting worse

WHY ARE THESE MESSAGES IMPORTANT?

- Optimal inhaler technique improves medication delivery to the lungs!
 - This skill can lead to improved efficacy of medications, improved asthma control, and the ability to decrease medicine over time.
- Inhaled corticosteroids are key to asthma control
- People struggle to understand control vs. quick relief medicines and need to hear key asthma messages as often as possible, and across settings of care
- Recognizing and avoiding asthma triggers can help decrease the number and severity of asthma episodes



1

AIRFLOW MUST BE MEASURED TO KNOW HOW MUCH ASTHMA IS LIMITING BREATHING

- Goal is normal or near normal spirometry – easy to move air in & out of lungs.
- Objective measures of airflow improve assessment of asthma control AND responsiveness to asthma therapy.
- Most people under-estimate the degree of airway obstruction!
 - Measuring airflow can often identify if student’s breathing is limited, even before symptoms occur.
- Useful to know personal best – some individuals have higher than normal numbers at baseline.
- An easy to use digital flow meter can be used at school to measure peak flow and forced expiratory volume in one second (FEV1)
- In addition, FEV1 is useful to determine individual “target time” to encourage optimal inhaler technique

2

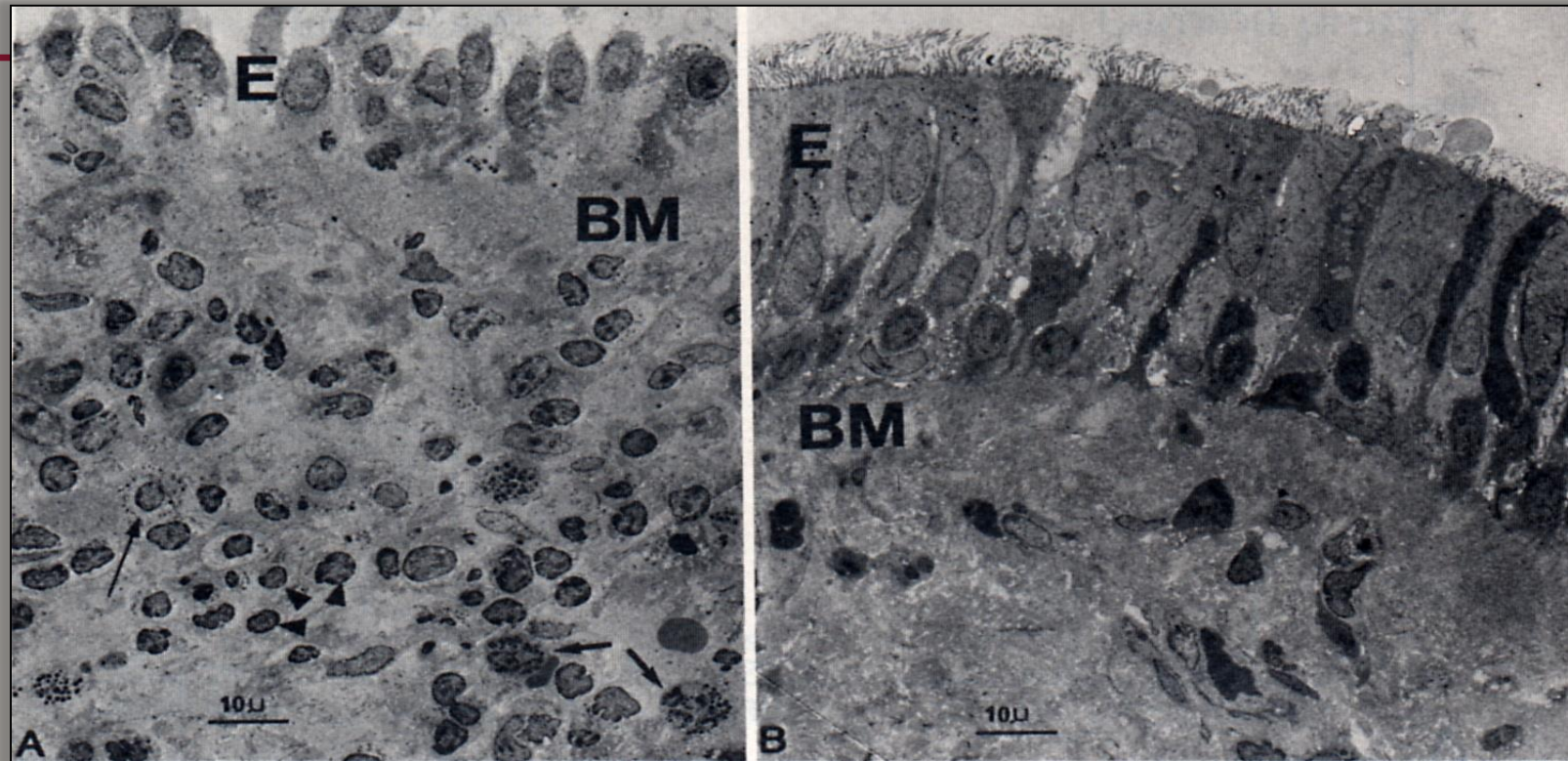
INHALED CORTICOSTEROIDS (ICS) MUST BE TAKEN EVERY DAY TO IMPROVE ASTHMA CONTROL

- Inhaled corticosteroids are the gold standard and foundation of asthma therapy!
- When inhaled deeply into the lungs ICS suppress inflammation and allow healing of the lungs.
- Cilia regrow, eosinophils that infiltrated the airways go away and the build up of histamine, leukotrienes and other substances of inflammation is reversed.
- It takes about 90 days of regular ICS use to realize the full benefit of this medicine.
- People often have difficulty distinguishing controller vs. quick relief medicines.
- Try to improve adherence by taking ICS with established behavior.
- Check dose counter on inhalers.

EFFECTS OF INHALED CORTICOSTEROIDS ON INFLAMMATION

Slide from AAE©

E = Epithelium
BM = Basement
Membrane



Pre- and post-3-month treatment with budesonide (BUD) 600 mcg b.i.d. n =14

Laitinen et al. *J Allergy Clin Immunol.* 1992;90:32-42.

Respiratory Inhalers

Side By Side

2015

Allergy & Asthma Network is a national nonprofit organization dedicated to ending needless death and suffering due to asthma, allergies and related conditions through outreach, education, advocacy and research.

Learn More at



AllergyAsthmaNetwork.org

800.878.4403



Brand Name	ProAir [®] HFA	ProAir [®] RespiClick	Proventil [®] HFA	Ventolin [®] HFA	Xopenex HFA [®]	Arcapta [®] Neohaler [®]	Foradil [®] Aerolizer [®]	SereVENT [®] Diskus [®]	Striverdi [®] Respimat [®]	Advair Diskus [®] 100/50, 250/50, 500/50	Advair [®] HFA 45/21, 115/21, 230/21	Breez [®] Ellipta [®] 100/25 mcg, 200/25 mcg	Dulera [®] 100/3, 200/5	Symbicort [®] 160/4.5, 160/4.5	Anoro [®] Ellipta [®]	Stiolto [®] Respimat [®]
Chemical Name	albuterol sulfate	albuterol sulfate	albuterol sulfate	albuterol sulfate	levosalbuterol tartrate	indacaterol	formoterol fumarate	salmeterol xinafoate	olodaterol hydrochloride	fluticasone propionate and salmeterol	fluticasone propionate and salmeterol xinafoate	fluticasone furoate and vilanterol	mometasone furoate and formoterol fumarate dihydrate	budesonide and formoterol fumarate dihydrate	formoterol and vilanterol	formoterol and olodaterol
Type of Inhaler	HFA MDI	dry powder inhaler	HFA MDI	HFA MDI	HFA MDI	dry powder inhaler	dry powder inhaler	dry powder inhaler	Soft Mist [®] inhaler	dry powder inhaler	HFA MDI	dry powder inhaler	HFA MDI	HFA MDI	dry powder inhaler	Soft Mist [®] inhaler
Date Approved	2004	2015	1996	2001	1997	2001	2001	2004	2006	2006	2006	2010	2006	2006	2014	2015
Inactive Ingredients	ethanol, HFA propellant	alpha-lactose monohydrate	ethanol oleic acid, HFA propellant	HFA propellant	dehydrated alcohol, oleic acid, HFA propellant	lactose monohydrate	lactose	lactose	benzalkonium chloride, edetate disodium, anhydrous citric acid	lactose	HFA propellant	lactose monohydrate, magnesium stearate	HFA 227 propellant, anhydrous alcohol, oleic acid	propylene glycol, potassium acetate, HFA propellant	magnesium stearate, lactose monohydrate, hydrochloric acid	benzalkonium chloride, edetate disodium, hydrochloric acid
Dose Counter	yes	yes	no	yes	no	n/a	n/a	yes	yes	yes	yes	yes	yes	yes	yes	yes
Discard After	200 sprays	200 inhalations or 13 months	200 sprays	60 or 200 sprays; or 12 months	80 or 200 sprays	30 capsules	60 capsules or 4 months	60 inhalations or 6 weeks	60 inhalations or 3 months	60 inhalations or 1 month	120 sprays	30 doses or 6 weeks	120 sprays	120 sprays or 3 months	30 doses or 6 weeks	60 activations or 3 months
Approved For	Asthma; age 4 and up	Asthma; age 12 and up	Asthma; age 4 and up	Asthma; age 4 and up	Asthma; age 4 and up	COPD	Asthma; age 5 and up; COPD	Asthma; age 4 and up; COPD	COPD	Asthma; age 4 and up; COPD	Asthma; age 12 and up; COPD	Asthma; age 18 and up; COPD	Asthma; age 12 and up; COPD	Asthma; age 12 and up; COPD	COPD	COPD
Dosing and Administration	1-2 inhalations every 4-6 hours or 15-30 minutes before exercise	1-2 inhalations every 4-6 hours or 15-30 minutes before exercise	1-2 inhalations every 4-6 hours or 15-30 minutes before exercise	1-2 inhalations every 4-6 hours or 15-30 minutes before exercise	1-2 inhalations every 4-6 hours	1 dose, once a day	1 dose twice a day or 15 minutes before exercise; do not use more frequently than every 12 hours	1 inhalation twice a day or 15 minutes before exercise; do not use more frequently than every 12 hours	2 inhalations, once a day	1 inhalation twice a day; do not use more frequently than every 12 hours	2 inhalations twice a day; do not use more frequently than every 12 hours	1 inhalation, once a day	2 inhalations twice a day; do not use more frequently than every 12 hours	2 inhalations twice a day; do not use more frequently than every 12 hours	1 inhalation once a day	2 inhalations once a day
Shaking and Priming Instructions	Shake and spray 3 times before first use or after 2 weeks non-use	n/a	Shake and spray 4 times before first use or after 2 weeks non-use	Shake and spray 4 times before first use or after 2 weeks non-use	Shake and spray 4 times before first use or after 3 days non-use	n/a	n/a	n/a	Spray until aerosol cloud is visible; then spray 2 more times before first use or after 21 days non-use; spray once after 3 days non-use	n/a	Shake (5 seconds) and spray 4 times before first use or after 3 days non-use	n/a	Shake and spray 4 times before first use or after 5 days non-use	Shake (5 seconds) and spray 4 times before first use or after 7 days non-use	n/a	Spray until aerosol cloud is visible; then spray 3 more times before first use or after 21 days non-use; spray once after 3 days non-use
Cleaning Instructions	Once a week remove canister and rinse plastic actuator with warm water; air dry	Wipe mouthpiece with dry tissue; do not use water	Once a week remove canister and rinse plastic actuator with warm water; air dry	Once a week remove canister and rinse plastic actuator with warm water; air dry	Once a week remove canister and rinse plastic actuator with warm water; air dry	Wipe mouthpiece with dry tissue	Do not wash or take apart; keep dry	Do not wash or take apart; keep dry	Wipe mouthpiece and metal exit port with damp cloth once a week	Do not wash or take apart; keep dry	Once a week clean exit port with dry cotton swab; wipe mouthpiece with damp tissue; air dry	Wipe mouthpiece with dry tissue	Once a week wipe mouthpiece with dry cloth; do not remove canister from actuator	Once a week wipe mouthpiece with dry cloth; do not use water	Wipe mouthpiece with dry tissue	Clean the mouthpiece and metal exit port inside with damp cloth at least once a week
Notes	Use at first sign of symptoms or before exercise	Use at first sign of symptoms or before exercise	Use at first sign of symptoms or before exercise	Use at first sign of symptoms or before exercise	Use at first sign of symptoms; store with mouthpiece down	Do not use to treat sudden episodes of coughing, wheezing or shortness of breath	Do not use to treat sudden episodes of coughing, wheezing or shortness of breath	Do not use to treat sudden episodes of coughing, wheezing or shortness of breath	Do not use to treat sudden episodes of coughing, wheezing or shortness of breath	Do not use to treat sudden episodes of coughing, wheezing or shortness of breath	Do not use to treat sudden episodes of coughing, wheezing or shortness of breath	Do not use to treat sudden episodes of coughing, wheezing or shortness of breath	Do not use to treat sudden episodes of coughing, wheezing or shortness of breath	Do not use to treat sudden episodes of coughing, wheezing or shortness of breath	Do not use to treat sudden episodes of coughing, wheezing or shortness of breath	Do not use to treat sudden episodes of coughing, wheezing or shortness of breath

Short-acting beta₂-agonist bronchodilators relax tight muscles in airways and offer quick relief of symptoms such as coughing, wheezing and shortness of breath for 3-6 hours

Long-acting beta₂-agonist bronchodilators relax tight muscles in airways and offer lasting relief of symptoms such as coughing, wheezing and shortness of breath for at least 12 hours

Combination medications contain both long-acting beta₂-agonist and inhaled corticosteroid



Brand Name	Atronep [®] 60 mcg	Alveoq [®] 30 mcg, 150 mcg	Armony [®] Ellipta [®] 160 mcg, 320 mcg	Asmanex [®] HFA 100 mcg, 200 mcg	Aasmex [®] Twisthaler [®] 110 mcg, 220 mcg	Flovent [®] Diskus [®] 50 mcg, 100 mcg, 250 mcg	Flovent [®] HFA 44 mcg, 110 mcg, 220 mcg	Pulmicort Flexhaler [®] 90 mcg, 180 mcg	QVAR [®] 48 mcg, 80 mcg	Atronep [®] HFA	Combivent [®] Respimat [®]	Incore [®] Ellipta [®]	Spiriva [®] Handihaler [®]	Spiriva [®] Respimat [®]	Tufera [®] Pressair [®]
Chemical Name	flunisolide	ciclesonide	fluticasone furoate	mometasone furoate	beclomethasone dipropionate	fluticasone propionate	fluticasone propionate	budesonide	albuterol	gratropium bromide	gratropium bromide and albuterol	umeclidium bromide	tiotropium bromide	tiotropium bromide	sodium bromide
Type of Inhaler	HFA MDI with built-in spacer	HFA MDI	dry powder inhaler	HFA MDI	dry powder inhaler	dry powder inhaler	HFA MDI	dry powder inhaler	HFA MDI	HFA MDI	Soft Mist [®] inhaler	dry powder inhaler	dry powder inhaler	Soft Mist [®] inhaler	dry powder inhaler
Date Approved	2012	2008	2014	2014	2005	2005	2006	2006	2004	2011	2011	2014	2014	2012	2012
Inactive Ingredients	ethanol, HFA propellant	ethanol, HFA propellant	lactose monohydrate	ethanol, oleic acid, HFA propellant	anhydrous lactose	lactose	HFA propellant	lactose monohydrate	ethanol, HFA propellant	sterile water, dehydrated alcohol, anhydrous citric acid, HFA propellant	water, benzalkonium chloride, edetate disodium, and hydrochloric acid	magnesium stearate, lactose monohydrate	lactose monohydrate	edetate disodium, benzalkonium chloride, hydrochloric acid	lactose monohydrate
Dose Counter	no	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Discard After	60 or 120 sprays	60 sprays	30 doses or 6 weeks	120 activations or 3 months	30, 60 or 120 inhalations or 45 days	60 inhalations or 6 weeks or 2 months	120 sprays	50, 100 or 120 inhalations	200 sprays	200 sprays	120 activations or 3 months	30 doses or 6 weeks	30 or 90 capsules	60 activations or 3 months	60 doses or 45 days
Approved For	Asthma; age 8 and up	Asthma; age 12 and up	Asthma; age 12 and up	Asthma; age 12 and up	Asthma; age 4 and up	Asthma; age 4 and up	Asthma; age 4 and up	Asthma; age 6 and up	Asthma; age 5 and up	COPD	COPD	COPD	COPD	COPD	COPD
Dosing and Administration	1-2 inhalations twice a day	1-2 inhalations twice a day	1 inhalation once a day	2 inhalations twice a day	1-2 inhalations once or twice a day	1-3 inhalations twice a day	2 inhalations twice a day	1-2 inhalations twice a day	1-2 inhalations twice a day	2 inhalations, 4 times a day	1 inhalation, 4 times a day; no more than 8 inhalations in 24 hours	1 inhalation once a day	1 dose once a day	2 inhalations once a day	1 inhalation, twice a day
Shaking and Priming Instructions	Shake and spray 2 times before first use or after 2 weeks non-use	Shaking not necessary; spray 3 times before first use or after 10 days non-use	n/a	Shake and spray 4 times before first use or after 5 days non-use	n/a	n/a	Shake (5 seconds) and spray 4 times before first use; shake and spray once after dropping or after 7 days non-use	Do not shake; twist and click 2 times before first use	Shaking not necessary; spray 2 times before first use or after 10 days non-use	Shaking not necessary; spray 2 times before first use or after 3 days non-use	Spray until aerosol cloud is visible; then repeat 3 times before first use or after 21 days non-use; spray once after 3 days non-use	n/a	n/a	Spray until aerosol cloud is visible plus 3 more times before first use or after 21 days non-use; spray once after 3 days non-use	n/a
Cleaning Instructions	No cleaning necessary	Once a week wipe mouthpiece with dry cloth; do not use water	Wipe mouthpiece with dry tissue	Wipe inside and outside of mouthpiece with dry cloth once a week	After each use wipe mouthpiece with dry cloth	Do not wash or take apart; keep dry	Once a week clean exit port with damp cotton swab; wipe mouthpiece with damp tissue; air dry overnight	Once a week wipe mouthpiece with dry cloth; do not use water	Once a week wipe mouthpiece with dry cloth; do not use water	Once a week remove canister and rinse plastic actuator with warm water; air dry	Wipe mouthpiece and metal exit port with damp cloth once a week	Wipe mouthpiece with dry tissue	Clean mouthpiece with moist tissue; once a month open device fully and rinse with warm water; air dry for 24 hours	Wipe mouthpiece and metal exit port with damp cloth once a week	Wipe mouthpiece with dry tissue; do not use water
Notes	MDI has built-in spacer; do not use with any external spacer or holding chamber device							Store on end with canister top down		Short-acting medication treats symptoms for 2-4 hours; do not use to treat sudden breathing problems	Combination medication contains short-acting beta ₂ -agonist bronchodilator and anticholinergic; treats symptoms for 4-5 hours	Long-acting medication treats symptoms for up to 24 hours; do not use to treat sudden breathing problems	Long-acting medication treats symptoms for up to 24 hours; do not use to treat sudden breathing problems	Long-acting medication treats symptoms for up to 24 hours; do not use to treat sudden breathing problems	Long-acting medication treats symptoms for up to 12 hours; do not use to treat sudden breathing problems

Inhaled corticosteroids reduce and prevent swelling of airway tissue; do not use to relieve sudden symptoms of coughing, wheezing or shortness of breath

Anticholinergics relax airway muscles and prevent sudden breathing problems

③ BREATHING MEDICINES INTO THE LUNGS REQUIRES PRACTICE AND COACHING

- Most people have poor technique
- Encourage caregivers to observe and coach every dose for children < 12 years, and weekly for older children/adults
 - “Bring your inhaler & spacer here and let’s take your ICS”
 - “Old air out.” (gently and completely exhale your air)
 - “Aim up.” (create a downhill path for the medicine)
 - “Fill up in your target time.”



IN-CHECK DIAL™ DEVICE

Inhalation Technique

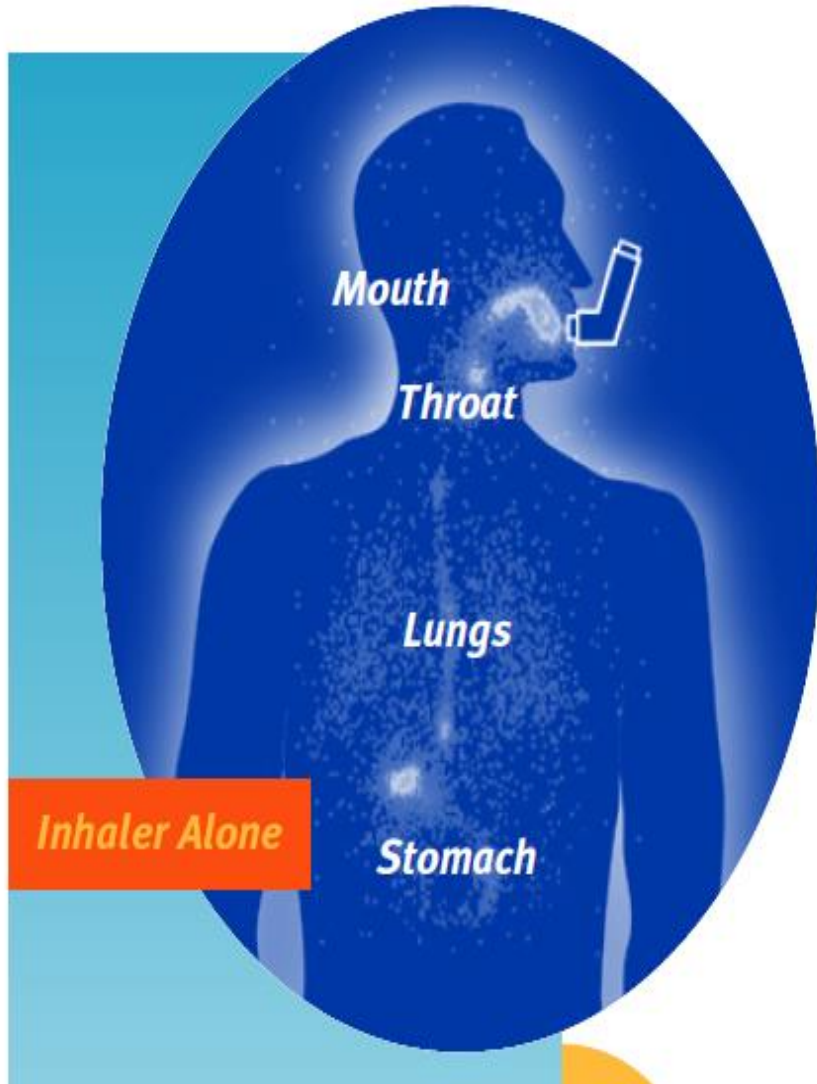


- Set resistance for inhaler type
- Use disposable one-way filter
- Train for optimal IFR and IFT
- MDI IFT=2xFEV1
- \$80, multi-use; \$0.60/patient

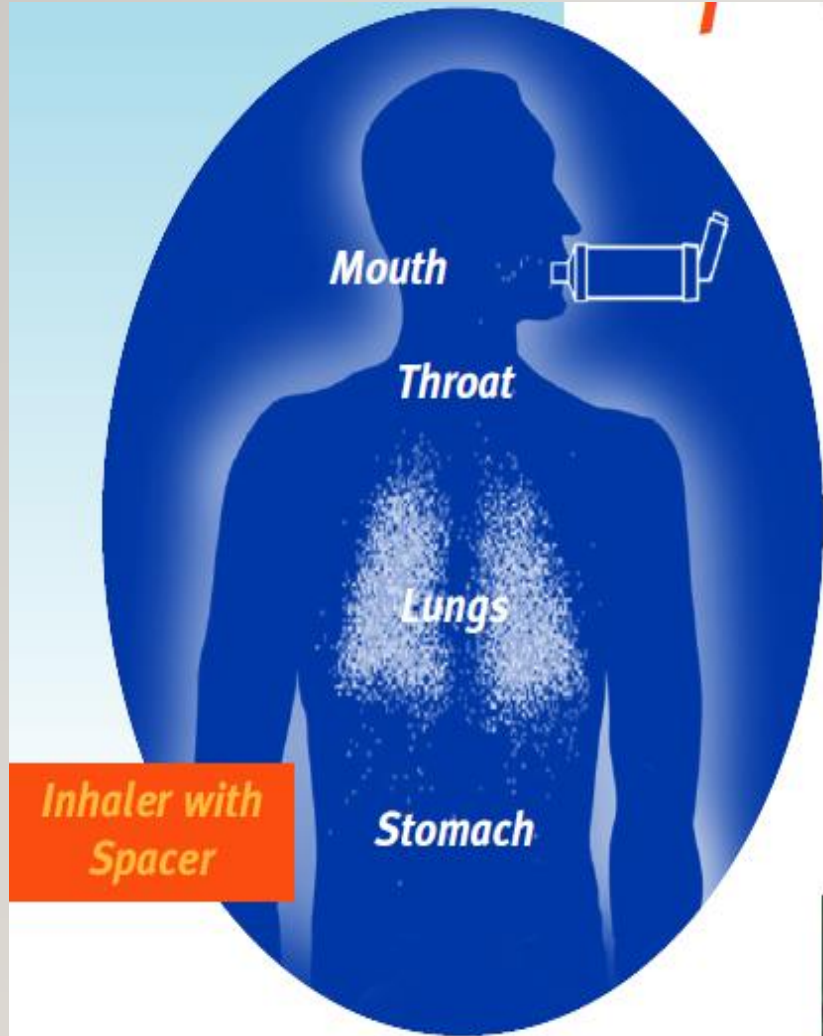
WITHOUT A VALVED HOLDING CHAMBER (SPACER) MOST MDI MEDICATION IS SWALLOWED

- Neither adults nor children are capable of avoiding swallowing most of their MDI medication unless a VHC is used.
- Most valved-holding spacers have flow signal- whistle triggers when breathing in TOO FAST.
- Goal - should NOT hear whistle if using optimal inhalation technique.

“NAKED INHALER”



- ◀ When an inhaler is used alone, medicine ends up in the mouth, throat, stomach and lungs.
- ◀ Medicine left in the mouth, throat and stomach may cause unpleasant taste and side effects.



- ◀ When an inhaler is used with a spacer, more medicine is delivered to the lungs, where it works.



4

TRIGGERS SHOULD BE AVOIDED TO KEEP ASTHMA FROM GETTING WORSE

- Nasal congestion and drainage often cause cough and shortness of breath
- Allergy to airborne triggers such as dust mites can cause breathing problems
- GERD is a common cause of nasal congestion, cough and chest tightness
- Avoidance of tobacco smoke, commercial air fresheners, incense, and chemical fumes including paint, chlorine, ammonia and solvents is part of trigger avoidance plan that can lower student's need for medication.

TEACH NASAL HYGIENE



University of Missouri Health System

LEARNING...The Pathway to Understanding

How to Rinse the Nose with Salt Water

This sheet explains how to rinse your nose or your child's nose with a special salt water and baking soda mixture. It includes the recipe for making this mixture.

The benefits of rinsing the nose with salt water

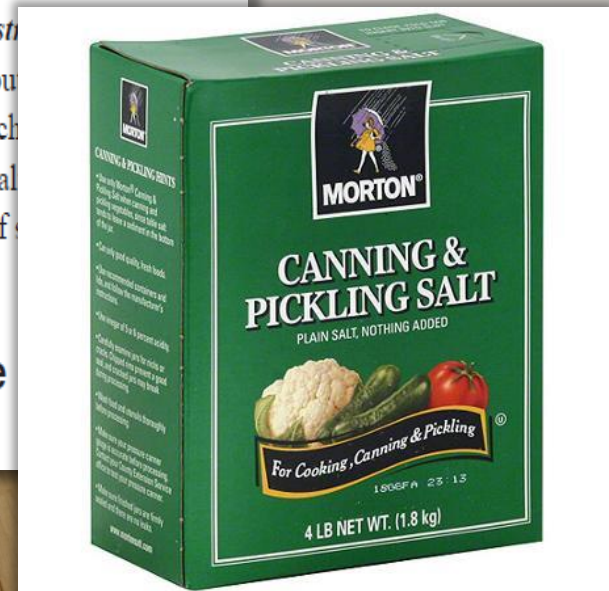
- When you rinse the nose with this salt water and baking soda mixture, you wash crusts, thick mucus, and other debris from the nose and sinus openings.
- Salty water pulls fluids out of swollen tissue, which decongests the nose and improves air flow. This makes breathing easier and helps open the sinus passages.

ditions you don't want in your nose rinse.

4. Add 1 rounded teaspoon of baking soda (pure bicarbonate).
5. Stir or shake before each use.
6. Store at room temperature.
7. After a week, pour out any mixture that is left and make a new batch.

NOTE: If the mixture seems *too strong* try the same amount of baking soda but try 1½ to 2 teaspoons of salt. For children *start* with the smaller amount of salt and gradually increase to 2 to 3 teaspoons of salt, whatever your child will accept.

How to rinse the nose



Efficacy of daily hypertonic saline nasal irrigation among patients with sinusitis: A randomized controlled trial

DAVID RABAGO, MD; ALESSANDRA ZICHENKA, MD, PhD; MARLON MUNDT, MA, MS; BRUCE BARRETT, MD, PhD; JAMES BOBULA, PhD; AND ROB MARRETT, BA
Madison, Wisconsin

SIMPLY SALINE® And AYR STERILE HYPERTONIC SALINE NASAL MIST

ALLERGY & SINUS RELIEF



DISCOVER CLEAR BREATHING

NASAL AND SINUS RELIEF

- Contains no preservatives which can damage delicate nasal tissue
- Naturally pure — contains purified water and purified salt
- Hypertonic dries runny noses

CLEANSING MIST® TECHNOLOGY

- Soothing mist, adaptable nozzle
- Quick spray or continuous mist
- Solution is sterile, use after use
- Environmentally friendly, contains no CFC's

INSTRUCTIONS & USAGE

ACTIVE INGREDIENTS

Simply Saline: Purified water, **3% Sodium Chloride**

Ayr: Deionized water, **2.65% Sodium Chloride**

USES

Comforting mist helps dry congestion as gentle misting flushes dust, dirt pollen and congestion from nasal and sinus passages.

**NASAL
MIST
MIGHT BE
BETTER
TOLERATED**

PERKS TO PARTICIPATION

- Asthma Tools
- Access to asthma training and resources
- Structured format to complete asthma assessment
 - *Let's give this a try!*

Teaming Up for Asthma Control

– Documentation

FUNCTIONAL IMPAIRMENT ASSESSMENT

To be completed at the beginning of VISIT ONE.

In the past two weeks, did asthma keep you from doing these things . . .?

	Not at all	A little bit	Some	A lot	Totally
Playing at friends', neighbors', or relatives' houses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Running fast or playing hard (things that use a lot of energy or action)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shooting hoops, bike riding, walking up stairs, jumping rope, dancing, or playing an instrument (things that use <i>less</i> energy or action)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Walking (things that use a little energy or action)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sleeping all night (not awakened by coughing or difficulty breathing)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How often do people SMOKE around you?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

TUAC CHECK-UP FORM

VISIT ONE (Week 1)

NOTE: Please use "Respiratory Inhaler" poster and "Poster Update" to assist student with identifying ICS medication.

Date of Visit 1						
Month	Day		Year			
0	0	0	0	0	0	0
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
5	5	5	5	5	5	5
6	6	6	6	6	6	6
7	7	7	7	7	7	7
8	8	8	8	8	8	8
9	9	9	9	9	9	9

Does student take ICS medication?
 Yes No

If **YES**, name of ICS:

Flovent
 QVar
 Alvesco
 Pulmicort
 Asmanex
 Advair
 Symbicort
 Dulera

Weekly ICS Doses*	
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

Device

ICS by MDI
 ICS by DPI

If no ICS by MDI or DPI, then:

Quick Relief/MDI

Student knows TARGET TIME?

Yes
 No

NOTE: Please use POKET GUIDE for step by step instructions for both Asma-1 and In-Check Dial.

Asma-1			
Best FEV1		Target Time (seconds)	
1	0	0	0
2	1	1	1
3	2	2	2
4	3	3	3
5	4	4	4
	5	5	5
	6	6	6
	7	7	7
	8	8	8
	9	9	9

In-Check Dial			
Before Coaching		After Coaching	
IFR	IFT	IFR	IFT
<input type="radio"/> 10	<input type="radio"/> 1	<input type="radio"/> 10	<input type="radio"/> 1
<input type="radio"/> 20	<input type="radio"/> 2	<input type="radio"/> 20	<input type="radio"/> 2
<input type="radio"/> 30	<input type="radio"/> 3	<input type="radio"/> 30	<input type="radio"/> 3
<input type="radio"/> 40	<input type="radio"/> 4	<input type="radio"/> 40	<input type="radio"/> 4
<input type="radio"/> 50	<input type="radio"/> 5	<input type="radio"/> 50	<input type="radio"/> 5
<input type="radio"/> 60	<input type="radio"/> 6	<input type="radio"/> 60	<input type="radio"/> 6
<input type="radio"/> 70	<input type="radio"/> 7	<input type="radio"/> 70	<input type="radio"/> 7
<input type="radio"/> 80	<input type="radio"/> 8	<input type="radio"/> 80	<input type="radio"/> 8
<input type="radio"/> ≥90	<input type="radio"/> ≥9	<input type="radio"/> ≥90	<input type="radio"/> ≥9

*For Example: Taking Flovent 110, 2 puffs twice a day for one week equals 14 doses (A.M. dose + P.M. dose x 7 days = 14 doses)

OPPORTUNITY #2: PRIMARY CARE HEALTH HOMES (PCCH)

Improve Communication and Asthma Control to Your Students by Working with
Local Primary Care Health Home





Favorable policy changes in Missouri impacting asthma care and education

- House Bill 1188 Life-threatening Asthma (2012)
- Missouri Revised Statute Funds ECHO® (2015)
- **Medicaid SPA* –Childhood Asthma HH* (2016)**
- MC SPA – Preventive Asthma Services (2016)
- Senate Bill 579 –Telemedicine in Schools (2016)

- MC Reimbursement 99605 (Medication Therapy Management)

*SPA= state plan amendment approved by Centers for Medicare and Medicaid Services

*HH= sole qualifying condition for patient center health home

2016 MO HEALTH HOME SPA

- **Uncontrolled pediatric asthma (stand-alone)**
- Behavioral Health Conditions: Including Anxiety, Depression, and Substance use disorder
- Obesity (BMI >30 or 95th percentile on growth chart) (stand-alone)**

Primary Care Health Home (PCHH)

<https://dss.mo.gov/mhd/cs/health-homes/>

The screenshot shows the Missouri Department of Social Services website. The header includes the logo and navigation links for MO.gov, Governor Parson, and Find an Agency. The main navigation bar has links for Home, Children, Families, and Health Care. The page title is "MO HealthNet Primary Care Health Home Initiative". The breadcrumb trail is "home » mo healthnet division » clinical services » health homes". The main content area starts with a paragraph about the PCHH initiative's goals, followed by a bulleted list of objectives. It then provides information about the current number of providers and sites, and details the types of health conditions covered by the initiative. Finally, it directs users to the "Health Home Resources" page for more information.

Missouri Department of
SOCIAL SERVICES

MO.gov Governor Parson Find an Agency

Home Children Families Health Care

MO HealthNet Primary Care Health Home Initiative

home » mo healthnet division » clinical services » health homes

MO HealthNet's Primary Care Health Home (PCHH) initiative strives to provide intensive care coordination and care management as well as address social determinants of health for a medically complex population. One aspect of the program includes the implementation and evaluation of the Patient Centered Medical Home (PCMH) model as a means to:

- achieve accessible, high quality primary care;
- demonstrate cost-effectiveness in order to validate and support the sustainability and spread of the model, and
- support primary care practices by increasing available resources and improving care coordination thus improving the quality of clinician work life and patient outcomes.

The MO HealthNet PCHH initiative currently has 36 providers with over 130 sites. A complete list of Primary Care Health Home providers and sites can be found in the Featured Links section.

The PCHH initiative offers comprehensive care management services for Medicaid participants who have two or more chronic health conditions including asthma/COPD, behavioral health conditions (anxiety, depression, substance use disorder), developmental disabilities, heart disease, overweight, and tobacco use. Participants can also be enrolled with just one of these conditions: pediatric asthma, diabetes or obesity.

The **Health Home Resources** page has more information and documents used in implementing the PCHH initiative.

This website provides information regarding the development and current status of Missouri's Primary Care Health Homes. For more information, see **Missouri's CMHC (behavioral) Healthcare Homes**, contact **Natalie Cook**, or call

PRIMARY CARE HEALTH HOME (HH)

- ❑ The Affordable Care Act created a new state Medicaid option to permit individuals with one or more chronic conditions – specifically including asthma – to seek care through a “health home.”
- ❑ ...a health home is responsible for providing or coordinating all patient care, as well as a specific set of “health home” services (touches):



SIX TYPES OF MONTHLY HH TOUCHES

- I. comprehensive care management
- II. care coordination and health promotion
- III. comprehensive transitional care-appropriate follow-up, from inpatient to other settings
- IV. patient and family support
- V. referral to community and social support services and
- VI. use of health information technology to link services, as feasible and appropriate

ASTHMA MONTHLY TOUCHES

- Review administrative claims reports to identify high risk (OSB, ED, hosp, SABA, etc)
- Schedule a school asthma assessment***
- Make referral for asthma education at home
- Make referral for home environmental assessment for trigger reduction
- Complete special assessments to better understand barriers to asthma control
- Refer for other community support

HOW WOULD THIS BENEFIT YOUR STUDENTS?

- PCHH nurses can use TUAC training and materials during clinic appointment
- PCHH nurses could do asthma assessments at school for a health home touch

Benefits:

- SNs would have community resource!!
 - Someone to check on students/follow up
 - Address medication barriers
 - Help with asthma assessment
 - Encourage adherence to asthma action plan



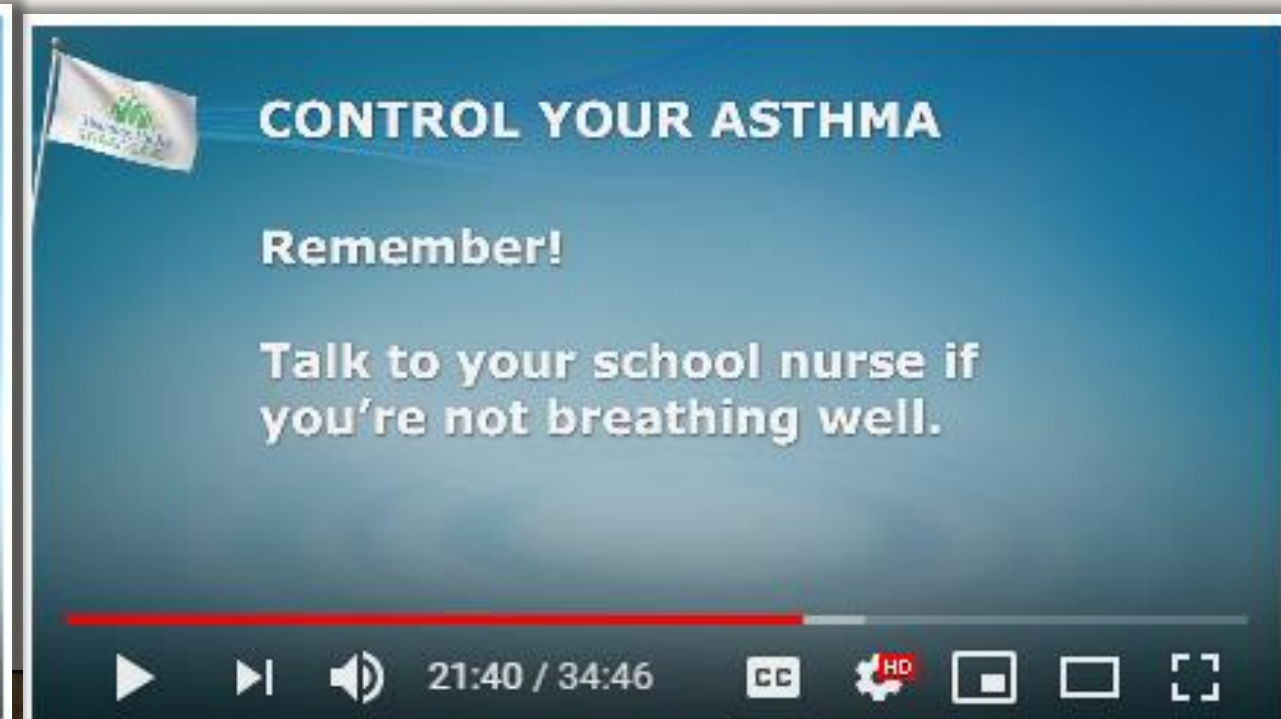
OPPORTUNITY #3 PARTNERSHIP FOR ASTHMA CARE

Asthma Control is Improved When Education is Provided at All Points of Care

“Whole School, Whole Community, Whole Child”

TEAM APPROACH

- Videos & materials encourage communication between asthma team - student, family, school nurse, and health care provider (*Video: Student Asthma Literacy for Home*)



1. Many asthma patients seek no preventive care, only seen if sick when they want antibiotics
2. Even well-controlled asthma requires 2 visits/year, more if uncontrolled (3, 4, 5 ...)
3. Community partners can improve asthma outcomes and redirect patients back to clinic for outpatient & preventive services

Teaming Up for Asthma Control

– Asthma Literacy Booklet: Student Activities

Inhaled Corticosteroids (ICS) Taken Every Day Improve Asthma Control

Hint: Your parents have information sheets they can use when helping you with your activity sheets.

**ON YOUR
MARK!**

Start at the beginning and find out what you know about the *basics of asthma*.
Mark the correct answer to each of these questions.



1) How long does it take a delayed reaction to occur after breathing air stuff?

- A. As long as twelve hours
- B. As long as one hour

2. What kind of medicine helps prevent delayed reactions?

- A. Quick relief medicines
- B. Control medicines

3. Why is it important to take control medicines?

- A. To prevent airway swelling
- B. To quickly stop wheezing and coughing

Teaming Up for Asthma Control

– Asthma Literacy Booklet: Parent Guide

Inhaled Corticosteroids (ICS) Taken Every Day Improve Asthma Control

Encourage your child to take their ICS control medicine every day (even when feeling well).

ASTHMA BASICS

CONTROL MEDICINE

If your child has asthma symptoms more than 2 days a week or 2 nights a month, or flare-ups of coughing, wheezing, or hard breathing that required sick visits to the clinic or hospital – your child should be taking a daily asthma control medicine. Control medicines protect your child from having asthma problems in the future. **The most effective kind of asthma medicine is called inhaled corticosteroids (ICS)**. ICS medicines reduce airway swelling and gradually over a few weeks of daily use help the airways return to normal. Daily use of ICS helps the airways become less “twitchy” or sensitive to developing airway muscle tightening when your child is exposed to asthma triggers. **However, it must be taken every day, whether your child is sick or well**, otherwise it won't work. When your child starts taking ICS, it is important to know that it

IS ASTHMA UNCONTROLLED?

YES

1. Coughs or wheezes more than twice per week

2. Sleep interrupted more than a couple times per month

3. Cough, wheeze or breathing difficulty during or after exercise

4. Missing school because of coughing, wheezing or respiratory infections

5. Asthma attacks requiring urgent treatments

Airflow Assessment

[] FEV1
[] PF

Today

Personal Best

% Predicted

Airflow (lung function) is measured using an electronic handheld device.

6. FEV1 or PF less than 80% of personal best (or percent predicted)

Medication Usage

Pre-Education

Inhaled Corticosteroid Daily Controller Medication

Rx Name _____

once daily twice daily Not prescribed

Expired *Spacer*: Consistently Sometimes Never/
rarely used

Quick Reliever Inhaler

Rx Name _____

Not prescribed Expired

Spacer: Consistently Sometimes Never/rarely used

Quick reliever doses taken to treat cough or trouble breathing?



< 3 per week



3-6 per week



Daily



Several daily

VIDEO

KANSAS CITY SCHOOL NURSE – LIZZIE COCKRELL

TED TALK, WASHINGTON, DC, 2014

RWJ ALIGNING FORCES FOR QUALITY

<https://www.youtube.com/watch?v=eatVsdAdj3o>

Local + Statewide = Sustainable Interventions

systems thinking

LOCAL STRATEGY EXAMPLE

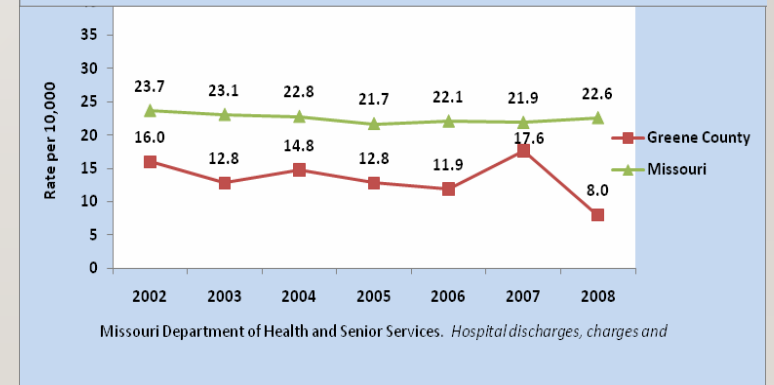
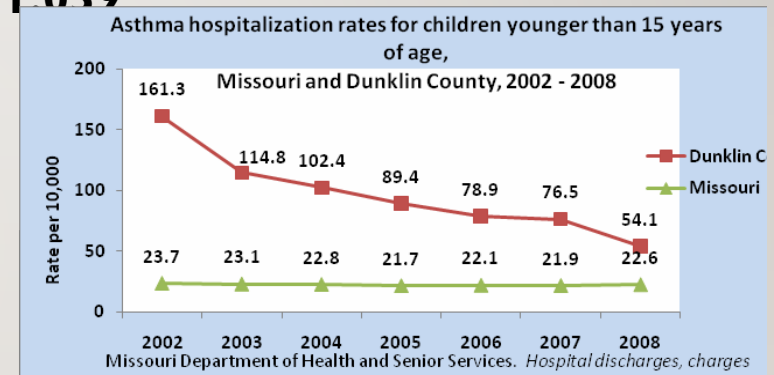
Framework for Community-based Approaches to Improving Asthma Care for Children

- Simple, to-the-point, one-page summary
- Sets goals and interventions for integrating efforts in five areas: schools, home environment assessments, primary care providers, hospitals/emergency rooms, and child care

KEY CONCEPTS

1. Demonstrate success at local level
 - Kennett Public Schools (Dunklin County) & Springfield (Greene County)
2. Experience, testimonials and data drive expansion of successful ideas
3. Identify statewide policy change opportunities through community-based work (e.g., spacers)
4. Statewide workforce development produces system-level change (e.g., LPHA staff, school nurses)
5. Cultivate local leadership

Dunklin Co. (Kennett) pop.= 31,039



Primary Care Providers
Equipped with the information regarding diagnosis and medication dosing such as Expert Panel Report 3 EPR3, 2007 Asthma Guide-
ments.
For more information, contact Peggy Gaddy at peggy.gaddy@dhs.mg.gov or (573) 522-2876

SCHOOL NURSES CAN:

- Improve asthma control
- Improve inhalation technique
- Increase ICS (controller) use (use star chart!)
- Improve airflow (FEV1)
- Reduce impairment due to asthma
- Improve student psychosocial wellbeing

https://www.cdc.gov/pcd/issues/2017/pdf/17_0003.pdf

PREVENTING CHRONIC DISEASE

PUBLIC HEALTH RESEARCH, PRACTICE, AND POLICY

Volume 14, E40

MAY 2017

ORIGINAL RESEARCH

Teaming Up for Asthma Control: EPR-3
Compliant School Program in Missouri Is
Effective and Cost-Efficient

HOW CAN I GET INVOLVED?

- **Email**
 - Julie Patterson pattersonjw@health.missouri.edu
 - Tammy Rood roodtl@health.missouri.edu
- **Call – 573-884-8629**
- **Visit** http://asthmaready.org/training-programs/#_tuac



ADDITIONAL TRAINING OPPORTUNITIES



HB 188: STOCK ASTHMA RESCUE MEDICINE FOR SCHOOLS

<https://house.mo.gov/billtracking/bills121/billpdf/truly/HB188T.PDF>

**Five
HB 1188
modules +
Attestation**


- ▼ **HB 1188**
 - ▶ Participants
 - ▶ Welcome to HB 1188 ARC Online Continuing Education...
 - ▶ Module 1: Protecting Missouri Students from Life T...
 - ▶ Module 2: School Nurse Tammy Adkins
 - ▶ Module 3: Tonya Winder - Allergy & Asthma Network
 - ▶ Module 4: Nebulizer Training
 - ▶ Module 5: Steve Calloway - Pharmacist
 - ▶ Attestation acknowledgement of module/video engage...

IMPACT ASTHMA ECHO

<https://showmeecho.org/clinics/asthma/>

SHOW-ME ECHO

IMPACT ASTHMA ECHO



HELP KIDS BREATHE EASIER WITH EXPERT ASTHMA COLLABORATION

Get expert support for your asthma patients in a virtual learning network with asthma specialists from across the state.

Learn about best practices for:

- Diagnosing and managing asthma
- Identifying environmental risks
- Step-wise pharmacotherapy
- Asthma self-management


INTERDISCIPLINARY PANEL INCLUDES PEDIATRICS, ALLERGY, ENVIRONMENTAL ASSESSMENT, PULMONARY, NURSING AND ASTHMA EDUCATION SPECIALISTS

WHY IMPACT ASTHMA ECHO?

Asthma is a major cause of morbidity and disability among children, with 29,616 emergency room (ER) visits and 6,525 hospitalizations across Missouri in 2013 (asthma as principal diagnosis), resulting in \$103.2 million in hospital charges. More than 30 percent of preschoolers and nearly 49 percent of school-age children with asthma missed one or more days of day care or school because of asthma. Connecting with the Impact Asthma ECHO team supports better quality care, lower asthma risk and reduced health care costs.

WHAT DOES IMPACT ASTHMA ECHO OFFER?

- Free CME for health care professionals*
- Collaboration, support and ongoing learning with experts and peers
- Patients get better care in home community

 **Missouri Telehealth Network**
University of Missouri Health

Provider Training

- 4 weeks, Tuesdays, noon until 1:30 pm, 6 hours Category One CME.
- Series is offered 6 times annually, January, February, May, June, September, October

Aim - use de-identified case studies and didactics to review the essentials of guidelines-based care for health care providers and other members of the clinical team

Questions?



Tammy Rood

roodtl@health.missouri.edu
(573) 884-0534

Pediatric Nurse Practitioner, Certified Asthma Educator

University of Missouri Children's Hospital

Pediatric Pulmonary & Allergy Division, Department of Child Health

Columbia, MO 65201

Adjunct Professor, Coordinator PNP Program of Study

Sinclair School of Nursing, University of Missouri -Columbia

Asthma Ready® Communities

www.asthmaready.org



Rebecca Brown

rebeccabrown177@gmail.com
(913) 219-2867

Registered Respiratory Therapist, Certified Asthma Educator

University of Missouri Children's Hospital

Community Asthma Coordinator

Kansas City, MO

Asthma Ready® Communities

www.asthmaready.org

