Children's Hospital
University of Missouri Health Care

School Nurses Impacting Cost and Outcomes

Benjamin Francisco, PhD, PNP-BC, AE-C
Tammy Rood, MSN, CPNP-PC, AE-C
Sherri Homan RN, FNP, PhD
Rebekah Nevel, MD
Bin Ge, MD

University of Missouri
Missouri Department of Health and Senior Services

Disclosures

Ben Francisco has no financial relationships to disclose or conflicts of interest to resolve. He will not discuss off label use of medications or devices.

The evaluation of "Teaming Up for Asthma Control" was funded by the Centers for Disease Control and Prevention (CDC), Cooperative Agreement #5U59EH000510-05.

Children's Hospital
University of Missouri Health Care

Describe background, research design and instruments

Objective 1

Review findings and implications

Objective 2

Discuss strategies for deploying and sustaining the intervention

Objective 3

Assign a grade to the US Health System for Asthma Care Quality and Value

- **A** - excellent
- **B** - good
- **C** - average
- **D** - poor
- **F** - failing

Need Assessments

- 2003 survey by MO DHSS to determine the training/resource needs of MO school nurses
- 2005 web survey of the needs of practicing Missouri school nurses
- 2005 survey of school nurses assessing asthma disability among Missouri students

Bachman, J. A., Brennan, P. F., Patrick, T. B., & Cole, M. (2005). A world wide web-based health resource. Survey of Missouri school nurses to determine priority health information resources for Schoolhealthlink. *Journal of School Nursing., 16*(1), 28-33.

Children's Hospital
University of Missouri Health Care

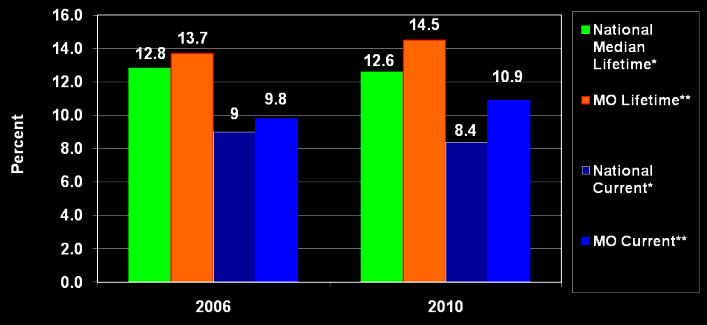
Gaps in Asthma Care at School

- No uniform asthma training for school nurses
- Lack of peak flow meters and spacers
- Lack of quick relief medications for students
- No asthma educational materials
- Lack of educational materials for families
- Lack of uniform school asthma care policies

Missouri Asthma Prevalence

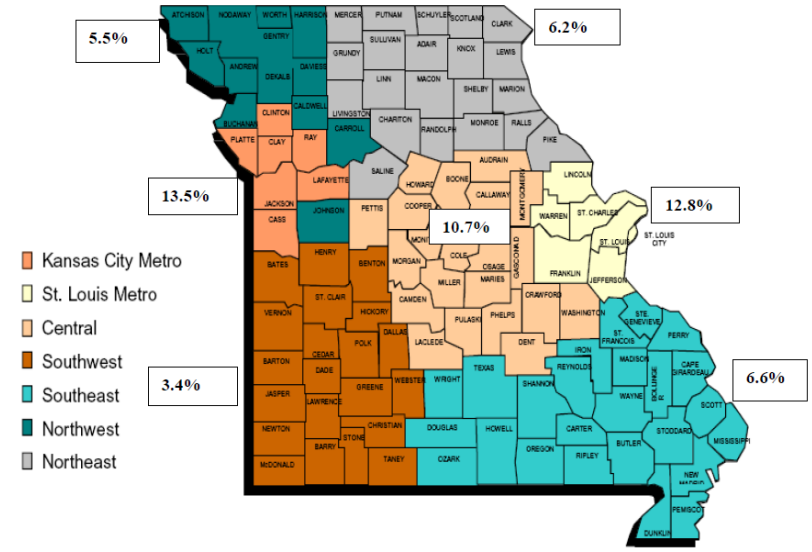
Children, less than age 18 by Year

Approximately 152,888 children with current asthma (2010)



Training for Asthma Ready® Clinics

Weighted Prevalence of Current Asthma Among Children, age 17 and younger, by Missouri BRFSS Region, 2012



DHSS Missouri 2012 BRFSS Data Report
State Prevalence 10.1%.

Disability Defined

- Newacheck & Halfon (2000) defined disabling asthma "long-term reduction in the ability to participate in children's usual activities, such as attending school and engaging in play". Used National Health Interview Survey data to examine disability among 62,171 children under age 18.

U.S. Asthma Disability Trend

- Newacheck & Halfon (2000) reported a 232% increase in disabling asthma from 1960-1998 among school age children. This is far in excess of increases in asthma prevalence (70%) and increases in disability due to other chronic illness in childhood (113%). Why the increase?

Newacheck, P. W., & Halfon, N. (2000). Prevalence, impact, and trends in childhood disability due to asthma. *Archives of Pediatrics & Adolescent Medicine., 154*(3), 287-293.

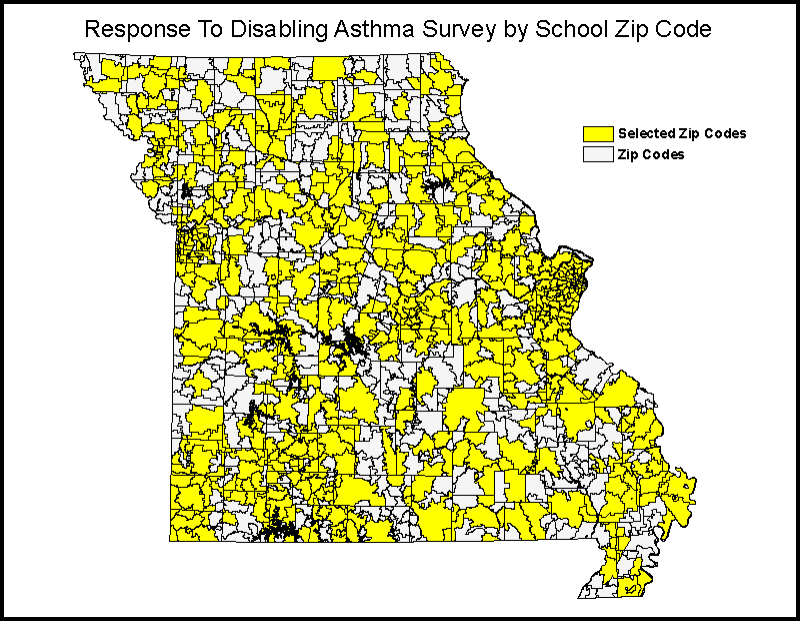
Disabling Asthma Survey Criteria

Children with asthma:

- Absent from school more than a day a month or 10 days a year, or
- Reduced capacity for physical activity resulting in restrictions in curricular or extracurricular activities, or
- Serious asthma symptoms that interfere w/ school participation several times a year

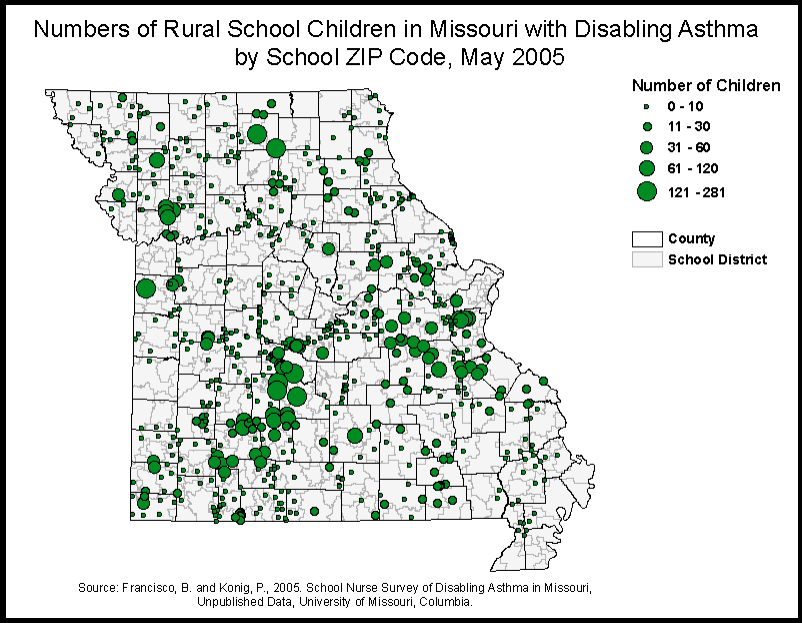
Survey Distribution

- Disabling Asthma Survey mailed to 1200 school nurses in April of 2005
- Response rate of >80%
- Data were analyzed for >520,000 Missouri school children, 487/669 zip code tabulation areas (Francisco and Konig, 2005)



Missouri Disabling Asthma Rates

- Missouri mean among rural children 2.1%
- Skewed distribution across zip codes
- Missouri median was 1.4% (=national rate)
- Geographic disparity for disabling asthma
- 50 zip codes at 4-15 national rate



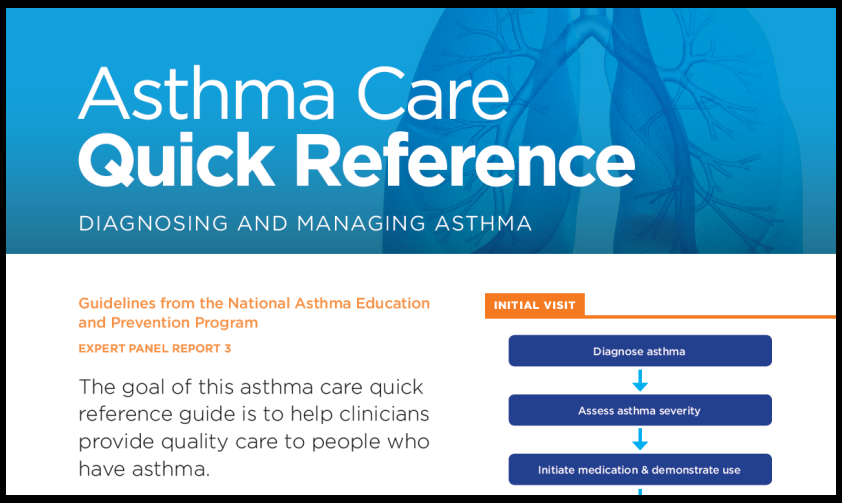
Burden of Childhood Asthma

- 152,888 with current asthma (MO DHSS, 2010) ~6.6%- 12% (BRFSS region)
- >55,000 taking asthma Rx at school (MO DESE, 2006), >75,000 (2011)
- ~25,000 with disabling asthma (Francisco & Konig, 2005)
- Disparity – race, age, gender, geography

Focus on reducing the level of impairment!

Asthma Care Quick Reference (EPR3)

http://www.nhlbi.nih.gov/guidelines/asthma/asthma_qrg.pdf

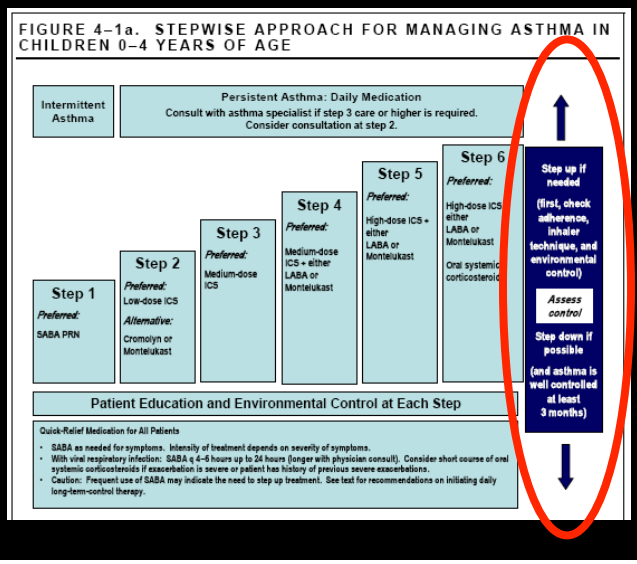


"A four component approach is effective for controlling asthma", EPR3

1) **Measures of Assessment & Monitoring**
2) **Education for a Partnership in Care**
3) **Control of Environmental Factors and Comorbid Conditions that Affect Asthma**
4) **Medications**

(EPR3, p. 35)

Clinicians Adjust Rx Therapy Based on…



EPR3 Guide to Stepping Therapy Up or Down

- **Step up IF** needed
- FIRST, check adherence
- THEN, check inhaler technique
- AND, check environmental control
- **Step Down**, IF asthma is well controlled for 3 months or longer

Must base therapy step changes on assessment of adherence, inhalation technique and triggers

Clinicians Assess Impairment & Risk – Can School Nurses Contribute Actionable Data?

FIGURE 4–3b. ASSESSING ASTHMA CONTROL AND ADJUSTING THERAPY IN CHILDREN 5–11 YEARS OF AGE

Components of Control		Classification of Asthma Control (5–11 years of age)		
		Well Controlled	Not Well Controlled	Very Poorly Controlled
Impairment	Symptoms	≤2 days/week but not more than once on each day	>2 days/week or multiple times on ≤2 days/week	Throughout the day
	Nighttime awakenings	≤1x/month	>2x/month	≥2x/week
	Interference with normal activity	None	Some limitation	Extremely limited
	Short-acting $beta_2$-agonist use for symptom control (not prevention of EIB)	≤2 days/week	>2 days/week	Several times per day
	Lung function • FEV_1 or peak flow	>80% predicted/ personal best	60–80% predicted/ personal best	<60% predicted/ personal best
	• FEV_1/FVC	>80%	75–80%	<75%
Risk	Exacerbations requiring oral systemic corticosteroids	0–1/year	≥2/year (see note)	
		Consider severity and interval since last exacerbation		
	Reduction in lung growth	Evaluation requires long-term followup.		
	Treatment-related adverse effects	Medication side effects can vary in intensity from none to very troublesome and worrisome. The level of intensity does not correlate to specific levels of control but should be considered in the overall assessment of risk.		
Recommended Action for Treatment (See figure 4–1b for treatment steps.)		• Maintain current step. • Regular followup every 1–6 months. • Consider step down if well controlled for at least 3 months.	• Step up at least 1 step and • Reevaluate in 2–6 weeks. • For side effects: consider alternative treatment options.	• Consider short course of oral systemic corticosteroids, • Step up 1–2 steps, and • Reevaluate in 2 weeks. • For side effects, consider alternative treatment options.

Teaming Up for Asthma Control

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

Children's Hospital
University of Missouri Health Care

Align Sustainable Intervention w/EPR3

- Educational messages & self-care coaching

Expert Panel Report 3 (EPR3)	Key messages
Assessment / monitoring	Measure airflow (FEV1)
Education for self-management	Inhaler identification / training
Control environment /co-morbidities	Avoid triggers, manage co-morbidities
Appropriate pharmacologic therapy	Inhaled corticosteroid improves control

- Expanded reimbursement for providers
  - Opportunity to involve school nurses

Children's Hospital
University of Missouri Health Care

Asthma Control Assessment

Components of Control		Classification of Asthma Control (≥12 years of age)		
		Well Controlled	Not Well Controlled	Very Poorly Controlled
Impairment	Symptoms	≤2 days/week	>2 days/week	Throughout the day
	Nighttime awakenings	≤2x/month	1–3x/week	≥4x/week
	Interference with normal activity	None	Some limitation	Extremely limited
	Short-acting beta$_2$-agonist use for symptom control (not prevention of EIB)	≤2 days/week	>2 days/week	Several times per day
	FEV$_1$ or peak flow	>80% predicted/ personal best	60–80% predicted/ personal best	<60% predicted/ personal best
	Validated questionnaires			
	ATAQ	0	1–2	3–4
	ACQ	≤0.75*	≥1.5	N/A
	ACT	≥20	16–19	≤15

26

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

National Asthma Control Initiative
Keeping Airways Open

American School Health Association (ASHA)

Creating Asthma-Friendly Schools
EPR-3 Recommendations and Priority Messages

Inhaled Corticosteroids

EPR-3 Recommendation: Inhaled corticosteroids (ICSs) are the most potent and consistently effective long-term control medication for asthma. ICSs should be taken on a long-term basis to achieve and maintain control of persistent asthma. www.nhlbi.nih.gov/guidelines/asthma/gip_rpt.pdf

Message for Schools

Parents of school children who have asthma should be aware and educate their children that ICSs are: 1) the preferred medication for persistent asthma, 2) safe for long-term use, 3) shown to reduce the risk of fatal asthma, 4) only effective if carefully inhaled, usually twice daily, into the lungs for several weeks, and 5) should only be discontinued under the advice of a qualified health care provider who can carefully monitor lung function in the following months.

Creating Asthma-Friendly Schools

EPR-3 Recommendations and Priority Messages

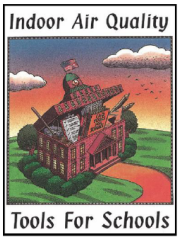
Asthma Control

EPR-3 Recommendation: Every patient with asthma should be taught to recognize symptom patterns and monitor airflow to identify poor asthma control and the need for additional therapy. Control should be routinely monitored to assess whether impairment and risk are reduced.
www.nhlbi.nih.gov/guidelines/asthma/gip_rpt.pdf

Message for Schools

School nurses should routinely assess control. Monitor and report:
1) frequency of need for quick relief medications, 2) impairment related to breathing problems, 3) missed school days, and 4) diminished airflow measures (FEV_1 or PEF). Communicate regularly with parents and asthma care clinicians, especially when asthma is not well controlled.

Allergen and Irritant Exposure Control



www.epa.gov/iaq/schools/

EPR-3 Recommendation: Review patients' exposure to allergens and irritants, particularly perennial allergens (dust mites, cock roach and pet dander) and tobacco smoke. Provide a multifaceted, comprehensive strategy to reduce exposure to those allergens and irritants to which students may be sensitive.
www.nhlbi.nih.gov/guidelines/asthma/gip_rpt.pdf

Message for Schools

Develop and implement an Indoor Air Quality Management Plan to reduce triggers at school. Provide asthma self-management education to help students with asthma reduce their exposure to allergens and irritants while at school.

Design / Methods

Pre Intervention Assessment
Evaluation Team

School nurse trained, then 3 care / education sessions with each child

Post Intervention Assessment
Evaluation Team

Children with asthma and families consented to enroll
N = 176; Mean age 9.4 yrs
~50% Medicaid

Children's Hospital
University of Missouri Health Care

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-1®)
      - Inhalation technique (In Check Dial®)
    - Asthma literacy curriculum
      - Standardized, multimedia for school and home use
      - IMPACT Asthma Kids©, EPR3

Children's Hospital
University of Missouri Health Care

http://esgn.tv/clients/aae/equipment_demo/

Video 5

Teaming Up for Asthma Control
on-line training for school nurses

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 ©

Children's Hospital
University of Missouri Health Care

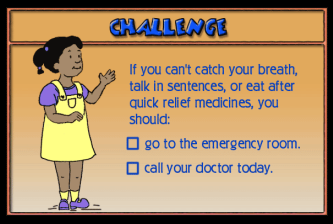
TUAC Intervention – Self-Management Education

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.

35

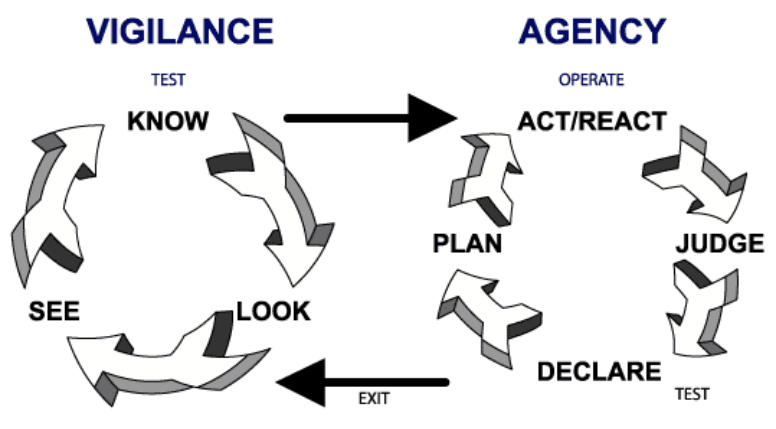
http://video.esgn.tv/player.php?p=z80240ko

Video 4

Teaming Up for Asthma Control

Self-care Module for Students

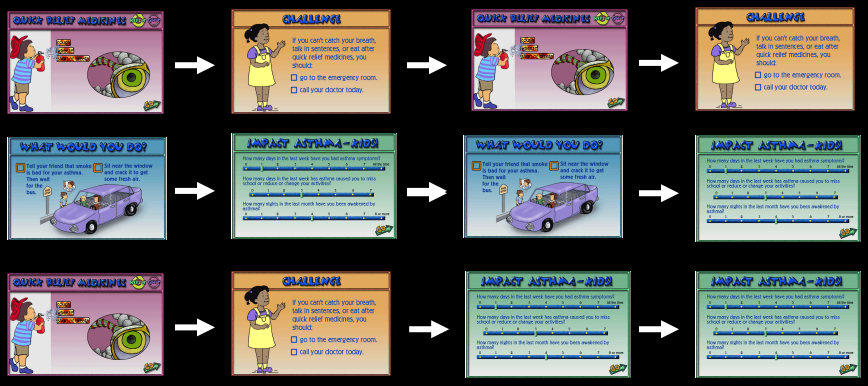
Self Regulation Theory



IMPACT Asthma Kids ©

- Interactive
- Multimedia
- Program for
- Asthma
- Control &
- Tracking

44 Lessons & a Triggers Game



PEDIATRICS
PAEDIATRIC ASTHMA A VIRTUAL JOURNAL for Specialists in Paediatric Asthma CLICK HERE
HOME HELP FEEDBACK SUBSCRIPTIONS BROWSE / SEARCH

PEDIATRICS Vol. 111 No. 3 March 2003, pp. 503-510

Internet-Enabled Interactive Multimedia Asthma Education Program: A Randomized Trial

Santosh Krishna, PhD*,
Benjamin D. Francisco, RN, MSN‡,
E. Andrew Balas, MD,PhD*, Peter König, MD, PhD§,
Gavin R. Graff, MD¶ and Richard W. Madsen, PhD‖

RCCT Design

-228 children, 6-18

-A parent present

-Specialty care for all

-Caring for Kids info

-3 visits, one year

-Knowledge gain

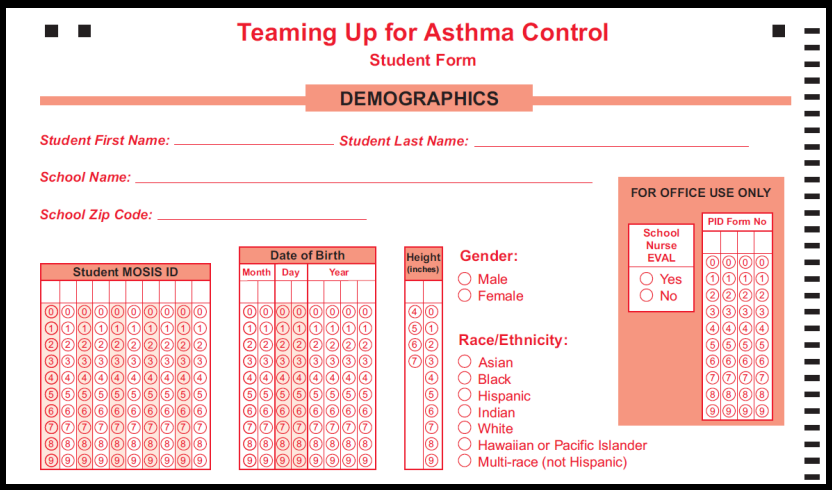
-Self report, Sx, Rx, days missed, ER, impairment

http://www.pediatrics.org/cgi/content/abstract/111/3/503

IMPACT RCCT Results

- Significant between group differences
  - Greater knowledge gain, children and caregivers
  - Greater decrease days of asthma symptoms
  - Greater reduction in ER visits (savings of $907 vs $291)
  - Markedly lower ICS dose (434 vs 754 mcg beclo equiv.)

Data Collection by Scantron Form



Teaming Up for Asthma Control

Student Form

DEMOGRAPHICS

Student First Name: _____ *Student Last Name:* _____

School Name: _____

School Zip Code: _____

Student MOSIS ID

Date of Birth: Month, Day, Year

Height (inches)

Gender:
- ○ Male
- ○ Female

Race/Ethnicity:
- ○ Asian
- ○ Black
- ○ Hispanic
- ○ Indian
- ○ White
- ○ Hawaiian or Pacific Islander
- ○ Multi-race (not Hispanic)

FOR OFFICE USE ONLY

School Nurse EVAL
- ○ Yes
- ○ No

PID Form No

ACT Requires Parent Input for <12

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	◯	◯	◯	◯	◯
Running fast or playing hard (things that use a lot of energy or action)	◯	◯	◯	◯	◯
Shooting hoops, bike riding, walking up stairs, jumping rope, dancing, or playing an instrument (things that use *less* energy or action)	◯	◯	◯	◯	◯
Walking (things that use a little energy or action)	◯	◯	◯	◯	◯
Sleeping all night (not awakened by coughing or difficulty breathing)	◯	◯	◯	◯	◯
How often do people SMOKE around you?	◯	◯	◯	◯	◯

With permissiion American Academy of Pediatrics, Children's Health Survey for Asthma – Child Version
http://www.aap.org/en-us/professional-resources/Research/pediatrician-surveys/Pages/Childrens-Health-Survey-for-Asthma-Child-Version-CHSA-C.aspx

43

ICS Access, Type, Use, FEV1, IFR/IFT

VISIT ONE (Week 1)

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

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

Date of Visit 1

Month | Day | Year

Does student take ICS medication? ◯ Yes ◯ No

If YES, name of ICS:
- ◯ Flovent
- ◯ QVar
- ◯ Alvesco
- ◯ Pulmicort
- ◯ Asmanex
- ◯ Advair
- ◯ Symbicort
- ◯ Dulera

Weekly ICS Doses*

Device
- ◯ ICS by MDI
- ◯ ICS by DPI

If no ICS by MDI or DPI, then:
- ◯ Quick Relief/ MDI

Student knows TARGET TIME? ◯ Yes ◯ No

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)

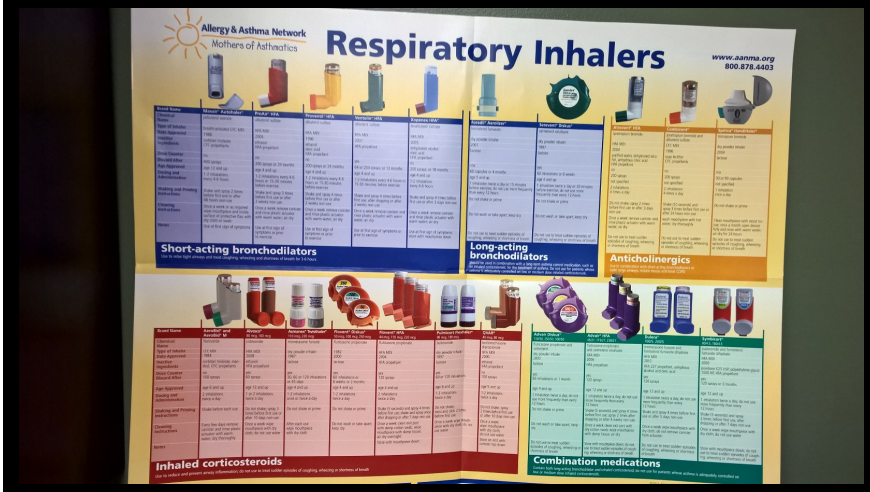
Asma-1

Best FEV1 | Target Time (seconds)

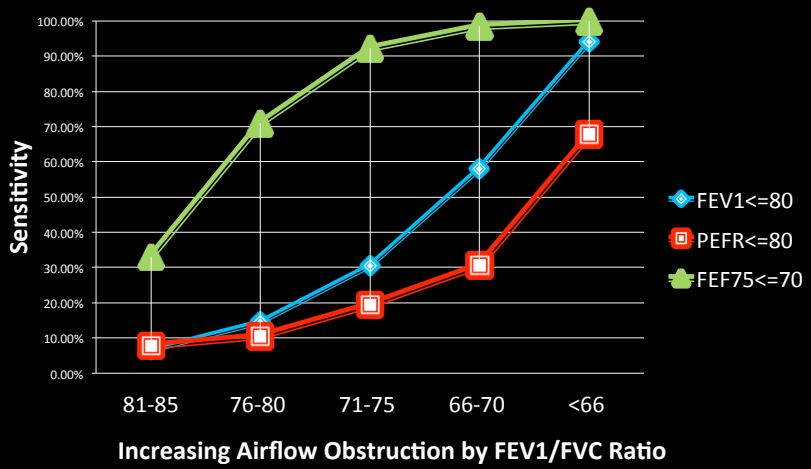
In-Check Dial

Before Coaching		After Coaching	
IFR	IFT	IFR	IFT
◯ 10	◯ 1	◯ 10	◯ 1
◯ 20	◯ 2	◯ 20	◯ 2
◯ 30	◯ 3	◯ 30	◯ 3
◯ 40	◯ 4	◯ 40	◯ 4
◯ 50	◯ 5	◯ 50	◯ 5
◯ 60	◯ 6	◯ 60	◯ 6
◯ 70	◯ 7	◯ 70	◯ 7
◯ 80	◯ 8	◯ 80	◯ 8
◯ ≥90	◯ ≥9	◯ ≥90	◯ ≥9

Respiratory Inhaler Chart



Sensitivity of FEF75, FEV1, PEF with Increasing Airflow Obstruction by Ratio



Francisco, B., et al. (2014). "Sensitivity of different spirometric tests for detecting airway obstruction in childhood asthma." J Asthma: 1-7.

EPR3 Specifies IFR and IFT

- IFR= inspiratory flow rate
- IFT= inspiratory flow time

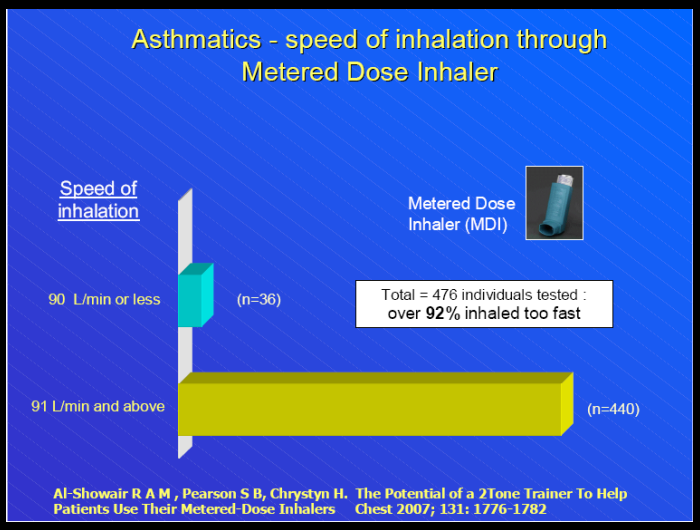
- MDI – 30 LPM or 3-5 seconds (p. 250)
- DPI – 60 LPM or 1-2 seconds (p. 249)

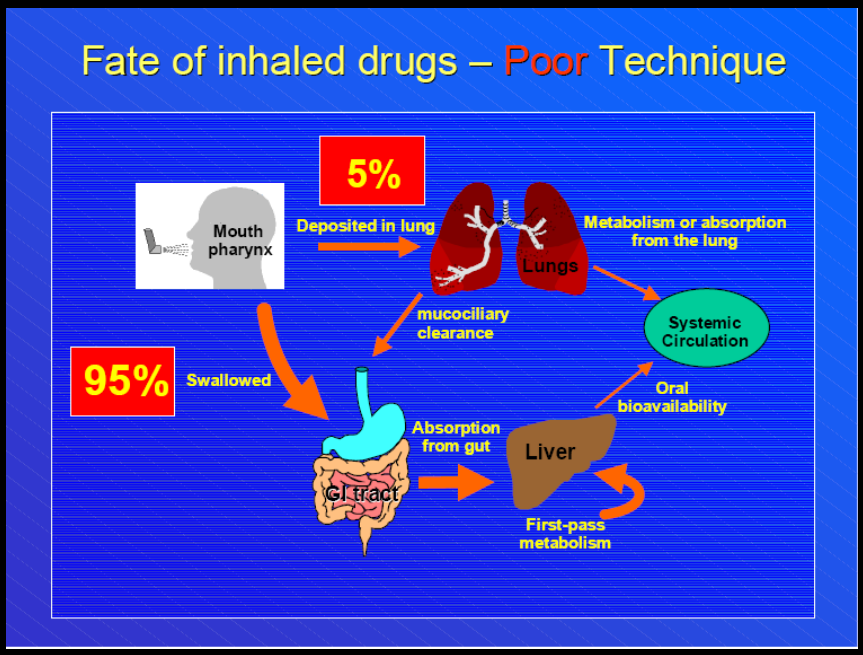
How do you measure IFR & IFT?

Improve Inhalation Technique

- **94664**
  - use objective measures
  - document inspiratory time and flow
  - coach to EPR3 benchmarks
  - use assistive devices - VHC
  - reinforce across settings

Do people with asthma know how to effectively inhale medications?





In-Check Dial™ Device

- Only device currently marketed in the US
- Set resistance for common inhaler types
- Use disposable, one-way mouth piece, surface wipe
- Train for optimal IFR and IFT
- Coach to a "target" IFT
- Formula for **MDI** IFT= 2 seconds/L x (FEV1 in L)= target inhalation time (Example: 2 seconds/L X 3.5 L = 7 seconds)

Community Healthcare for Asthma Management and Prevention of Symptoms (CHAMPS), Highly Tailored NIH Asthma Interventions

NCICAS: The National Cooperative Inner-City Asthma Study
Asthma Counselor Intervention

ICAS: Inner-City Asthma Study
Environmental Intervention

HEAL: Head-off Environmental Asthma in New Orleans
Combined asthma counselor (NCICAS) and environmental (ICAS) intervention in post disaster New Orleans

52

Educator Assessment (ACE©) Using CARAT Environment Questions

		Yes	No
29.	Does your child's **pillow** have a special cover for allergies?	○	○
30.	Does your child's **mattress** have a special cover for allergies?	○	○
31.	Do you use a humidifier/ vaporizer in your child's bedroom?	○	○
32.	Do you have carpeting (or rugs) in your child's bedroom?	○	○
33.	Do you have carpeting (or rugs) in your TV/family room?	○	○
34.	Does your kitchen have a gas stove?	○	○
35.	Do you sometimes use the gas stove to help heat your house?	○	○

36. Is there any moisture or mildew anywhere in the house on the. . .

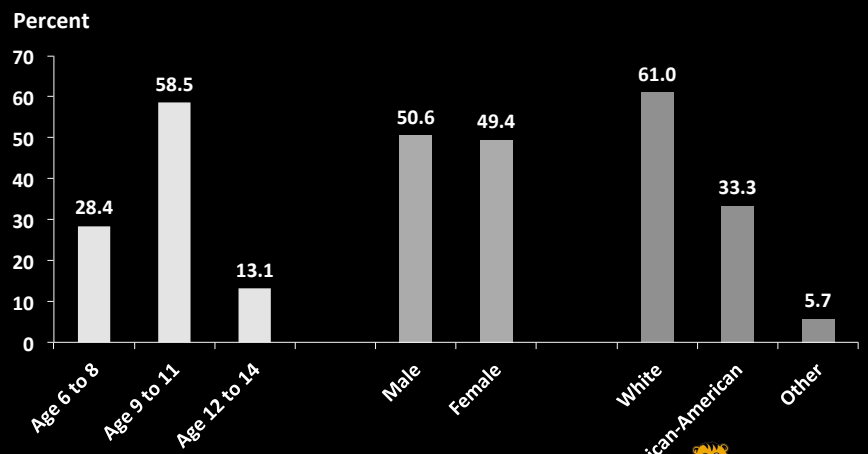
	Yes	No
Ceiling?	○	○
Walls?	○	○
Windows?	○	○

37. Have you had any problems with. . .

	Yes	No
Cockroaches?	○	○
Mice?	○	○
Rats?	○	○

March 26, 2012

Characteristics of children participating in TUAC Evaluation (n =176)



Children's Hospital
University of Missouri Health Care

Were SNs Able to Identify Students with Uncontrolled Asthma Likely to Benefit from the Intervention?

- Answer: Yes, the total number of students with "not well" or "very poorly controlled" asthma at first assessment 124 69.7% (76% at some point in time)
  - Based on 4 indicators
    - Difficulty with moderate physical activity
    - Difficulty walking
    - Sleep disruption
    - Lung function

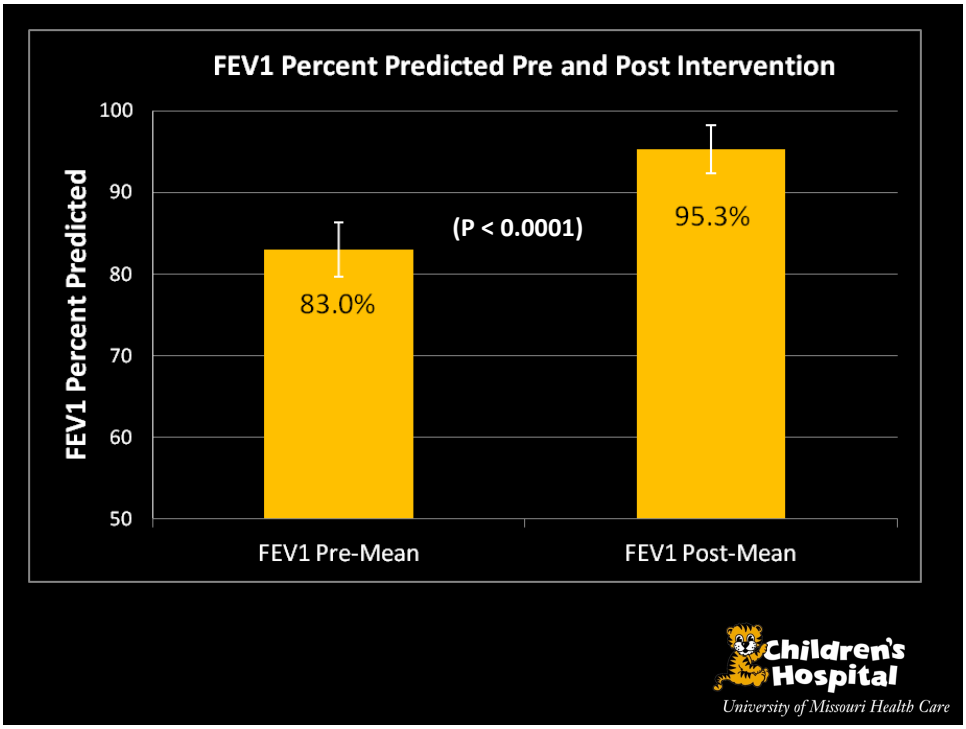
55

Asthma Control Status

Not well or Poorly Controlled

Pre = 124 (69.7%)
Post = 95 (53.4%)
Anytime= (76.2%)

56

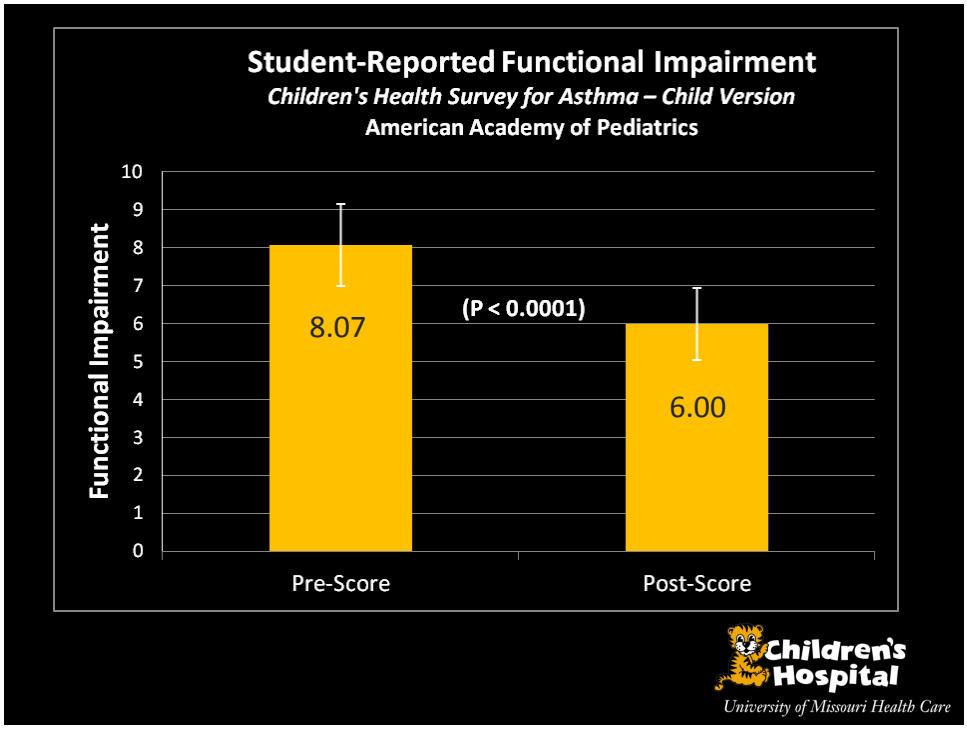


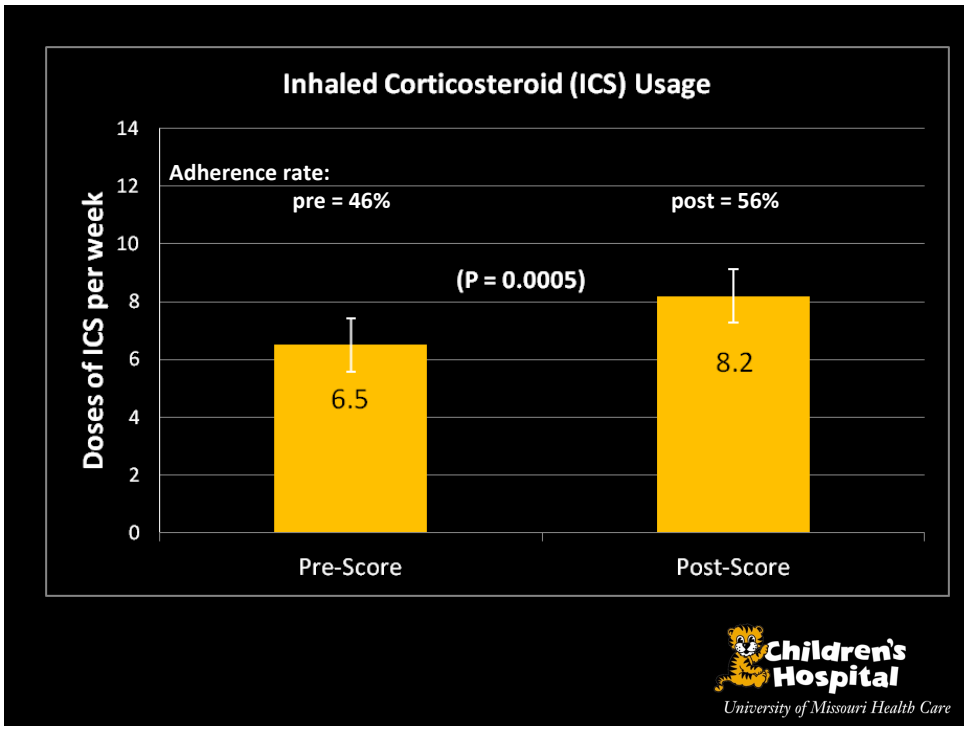
Student FEV1 – Rural vs Urban

Rural versus Urban cohort:

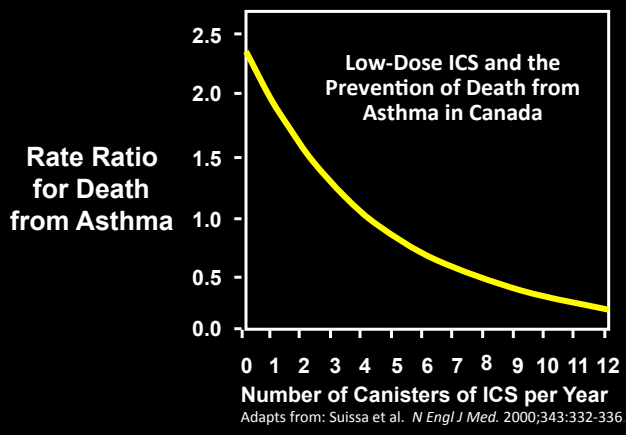
- Were there rural / urban differences?
- Yes, rural school nurses selected students who had significantly greater lung function impairment
  - 71.7% rural (n=22) v 84.6% urban (n=156)
- Rural students had a significant increase in FEV1% predicted pre v post (p = 0.0226) 71.7% to 82.7%

58


Student-Reported Functional Impairment
Children's Health Survey for Asthma – Child Version
American Academy of Pediatrics
Functional Impairment
10
9
8
7
6
5
4
3
2
1
0
8.07
(P < 0.0001)
6.00
Pre-Score
Post-Score
Children's Hospital
University of Missouri Health Care

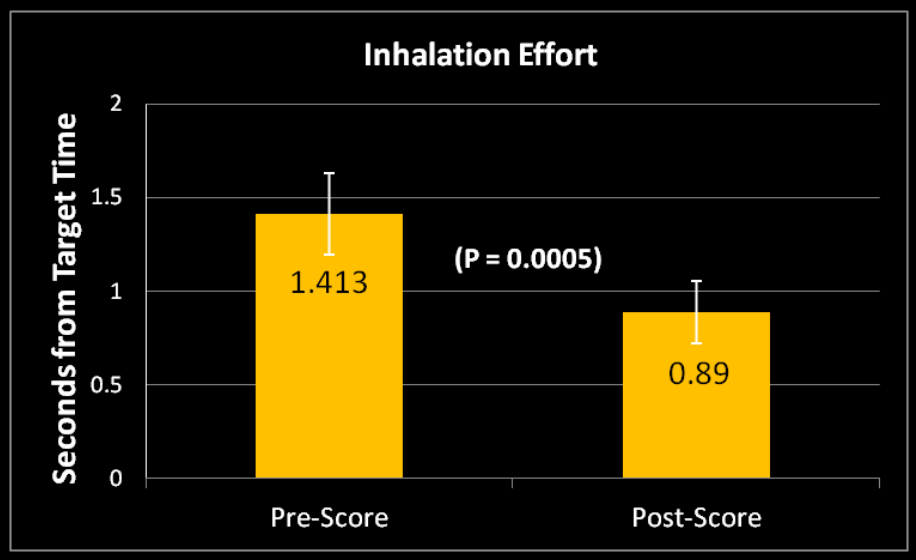

Inhaled Corticosteroid (ICS) Usage
Doses of ICS per week
14
12
10
8
6
4
2
0
Adherence rate:
pre = 46%
post = 56%
(P = 0.0005)
6.5
8.2
Pre-Score
Post-Score
Children's Hospital
University of Missouri Health Care

ICS Use and Risk of Death

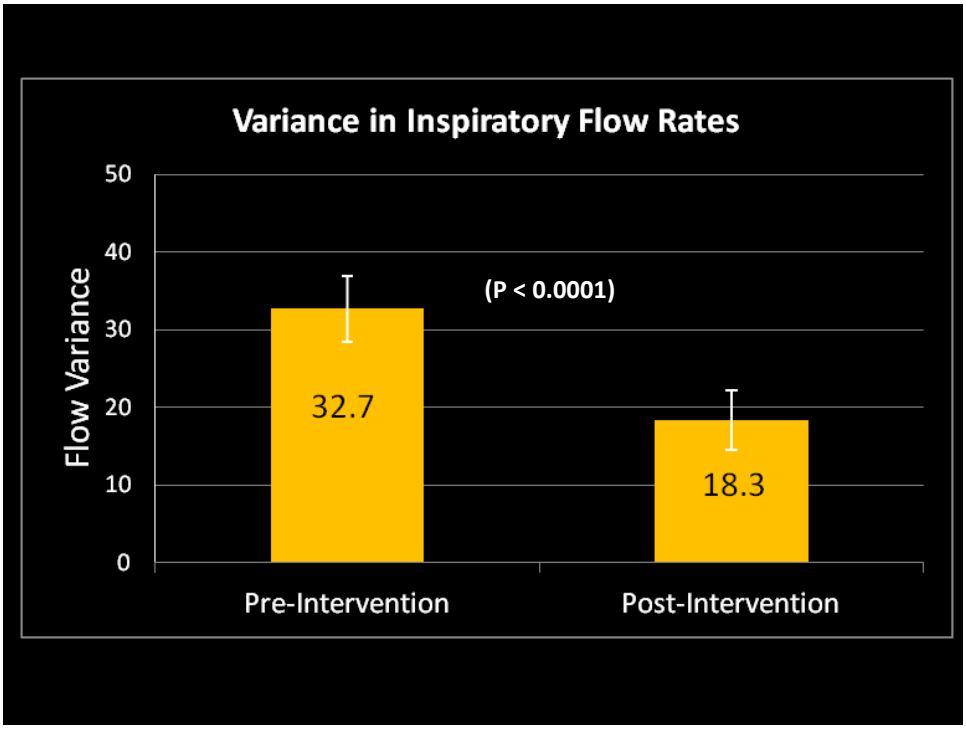


Adapts from: Suissa et al. *N Engl J Med.* 2000;343:332-336

AAE 2012



Children's Hospital
University of Missouri Health Care



Student Psychosocial Wellbeing

- CHSA-C:
  Child's feelings and beliefs:
  - Frustration
  - Isolation
  - Sadness
  - Anger
  - Embarrassment

Attitude / Belief Score significantly improved. (p<.0001)

64

Results

- Additional findings:
  - Student–reported smoke exposure scores decreased ($p<0.0001$).
  - Participants liked the program:
    - 93% of parents would recommend to other families who have children with asthma.
    - 87% of participating nurses would recommend to other school nurses.

Children's Hospital
University of Missouri Health Care

https://www.youtube.com/user/AligningForces

Video 3

Kansas City School Nurse – Lizzie Cockrell

TED Talk, Washington, DC, 2014

RWJ Aligning Forces for Quality

Results - Cost Analysis

Year	tot_pop_18yr	tot_medicaid cost	Average cost per kid
2009	54562	$ 140,363,798.41	$2,572.49
2010	58429	$ 170,879,902.17	$2,924.58
2011	57147	$ 174,162,423.75	$3,047.58
2012	58581	$ 186,100,902.97	$3,176.80
2013	52144	$ 185,800,402.22	$3,563.21
2014	52667	$ 215,840,979.73	$4,098.20

Table : Average Annual Medicaid Costs Children with asthma (less than 19 years old)

Children's Hospital
University of Missouri Health Care

Results

- Cost Analysis
  - Mean MC costs rose by 11% annually between 2009 and 2014
  - Average increase of $350.20/year
  - Sustaining TUAC cost ~$150 per student
    - Delivery by school nurse, RRT, AE-C, other

Children's Hospital
University of Missouri Health Care

Results

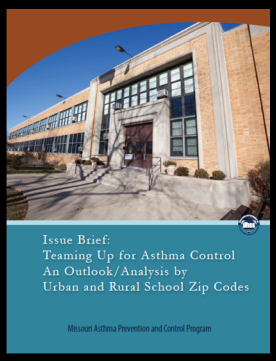
- Cost Analysis
  - 10,876 matched controls for children on continuous Medicaid (n=62)
    - Match criteria: age, gender, race, cost-strata
  - Assessed total MC cost 1 year prior vs. 1 year post intervention
  - Results – TUAC students MC cost fell $1348.48, while controls cost rose $82.69 with a net saving of $1431.17
  - ROI > $8 per $1 spent, potential saving $15 M

Children's Hospital
University of Missouri Health Care

Conclusions

- School nurse asthma training
  1) Effective
     - Improving inhalation technique
     - Increasing ICS use
     - Improving airflow (FEV1)
     - Reducing impairment
     - Improving student psychosocial wellbeing
  2) Cost efficient intervention

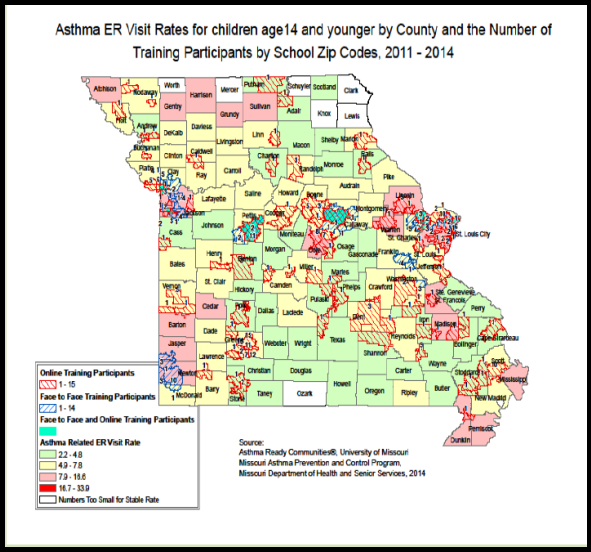
Children's Hospital
University of Missouri Health Care



269
on-line trainings

232
Face-to-Face
completed

Deployment



Next Steps

- Opportunity for coordination of care between schools and clinics
- Developing an asthma control application
  - *Asthma Control Monitor / My Asthma Control*
  - HTML secure → HIPPA compliant server
    - In environment with claims data (Medicaid)
    - Provides reports to clinic providers
- Implications for other chronic illnesses in childhood
- Roll-out across the state of MO, now working with 4 other states (NM, KS, IL, TN)

Children's Hospital
University of Missouri Health Care

1) CMS overturns "Free care rule"
2) CMS enacts 42 CFR & 440.130

Medicaid & Community-Based Asthma Interventions: Recent Changes & Future Steps

Childhood Asthma Leadership Coalition

Effective January 1, 2014 – CMS expanded the types of providers who can provide preventive services to Medicaid and CHIP beneficiaries. State MC programs may implement reimbursement plans to support delivery of these new services.

"Treating, managing and reducing the burden of asthma requires coordinated interventions that integrate community-based approaches into patient care and take the management of asthma beyond the doctor's office. While patients receive initial instruction in clinical settings, evidence-based guidelines call for repeated education in homes and community settings to reinforce treatment recommendations

Array of Clinical & Preventive Services*

Service Type	Eligible Group	Service Cost
1) Asthma Literacy	Uncontrolled asthma	Low, S9441*
2) Key Messages	Everyone w/asthma	Bundled w/OP visit
3) Inhalation instruction	Everyone w/asthma	Low, 94664
4) PMC, risk reduction	Uncontrolled asthma	Medium, 99402,1
5) Medication Therapy Management	Claims alerts at point of dispensing Rx	Medium, 99605,6,7
6) Self-management	Very poor control-VPC	Moderate, 98960,1,2*
7) Home Trigger Reduction	VPC, good ICS adherence/technique	Moderate, T1028*
8) Coach/counselor	VPC, failed 1-7	High, CPT-?????

Asthma Ready® Communities 2014

Missouri Budget Bill 2011.528

- Representative Allen sponsored $500 K appropriation for asthma preventive services
- Passed house and senate reconciliation
- Governor signed the budget 5/18/15
- MC is writing a state plan amendment
- MC is setting standards for PAS providers
- MU (ARC) will maintain records for active, eligible educators (national or state certicate)

http://www.asthmaready.org

77

Questions?


Thank you to our partners!
AsthmaReady.org
a catalyst for change
Missouri Foundation for Health™
Health Care Foundation
OF GREATER KANSAS CITY
KCQIC
Kansas City Quality Improvement Consortium
CDC
Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™
MoHealthNet
MISSOURI DEPARTMENT OF
dhss
HEALTH AND SENIOR SERVICES