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Standardizing Asthma Management in Primary Care

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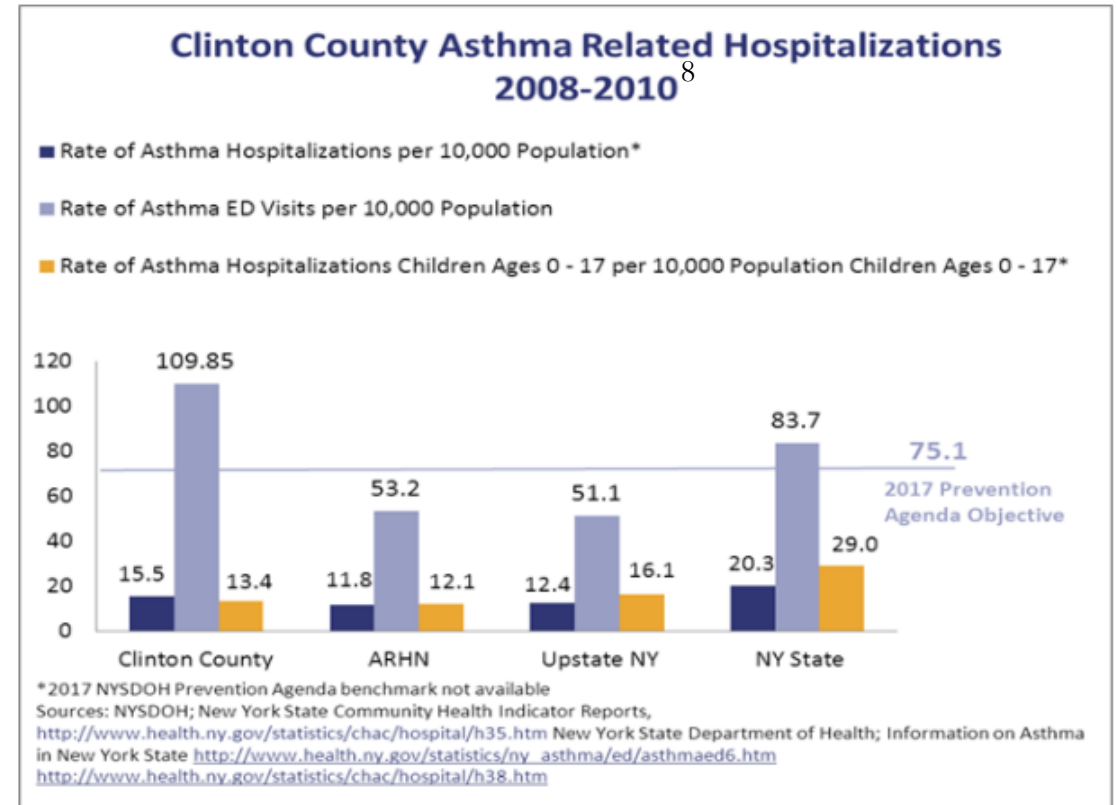
STANDARDIZING ASTHMA MANAGEMENT IN PRIMARY CARE

Michael Chmielewski, MS3
October-November, 2019
CVPH Family Medicine

Project mentors: Dr. Cabrera, Dr. Wilhelm, Dr. Worczak, Dr. Heintz

The Problem

- Estimated 25 million persons with asthma in US; 6.0 million are children¹
- Prevalence increasing: 7.3% in 2001 to 7.9% in 2017¹
- Asthma is a relapsing-remitting, chronic disease
- There is clear morbidity and mortality associated with uncontrolled asthma^{2,3}
- Rural, ethnic, impoverished populations are affected disproportionately^{1,4-6}
- New York state: 1.4 million adults, 315,000 children with diagnosis of asthma⁷
 - Estimated 9.2% current prevalence in 2017⁷
 - Estimated 129.9 per 1000 in Clinton County (tied for third highest prevalence in state)⁷



Public Health Cost

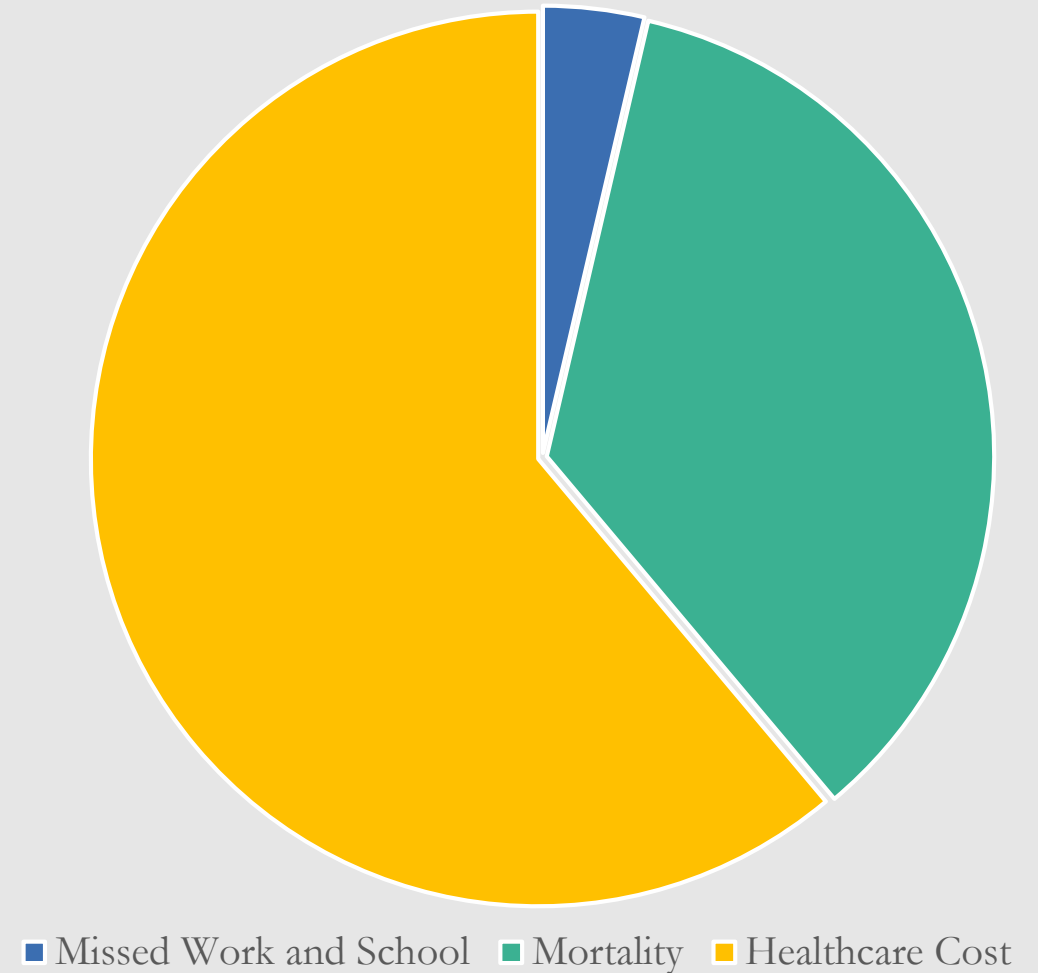
United States

- Average annual cost per individual: \$3266⁹
- Estimated \$81.9 billion total in US in 2013⁹
 - \$3 billion in missed work and school days
 - \$29 billion in mortality secondary to asthma
 - \$50.3 billion in healthcare costs

New York State

- \$1.3 billion in 2014⁸

Public Health Cost (United States)



“Community Perspective

- “There is currently no standardization or protocol for managing asthma at [CVPH Family Medicine]”
- “Asthma is a perfect model for having a system of care and standardization”
- “Providers think they’re delivering the best asthma care, but this is not necessarily true without protocols or standardization to help guide us.”

–**Steven Heintz, MD, CVPH Family Medicine Attending**

- “There is a need for standardization [of asthma management at CVPH family medicine], especially in our pediatric patients, since this practice recently started accepting pediatric patients in 2017.”
- “Each provider has their own way of managing asthma”

–**Marianna Worczak, MD, CVPH Family Medicine Residency Director**

”

Intervention and Methodology

National Heart, Lung, and Blood Institute (NHLBI) Expert Panel Report 3 (2007)¹⁰

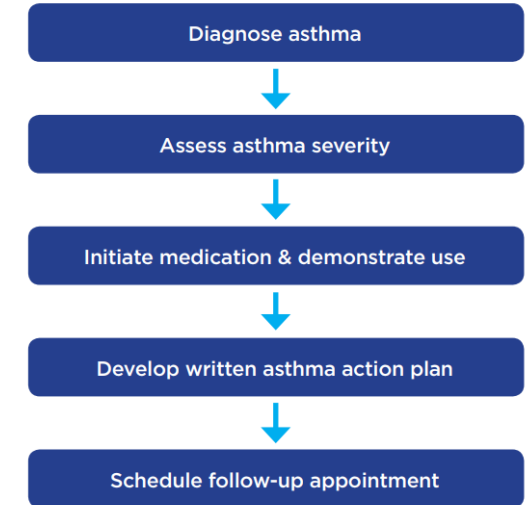
- Systematic review recommending guidelines for diagnosis and management of asthma
- Guidelines associated with improved patient outcomes

University of Vermont Child Health Advances Measured in Practice (CHAMP) quality improvement project in 2015¹¹

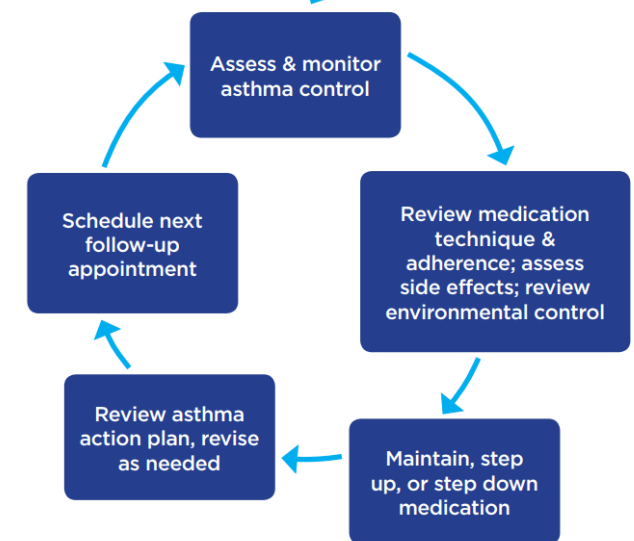
- Nine recommendations for primary care practices to standardize and improve asthma care in Vermont using evidence-based guidelines

Need identified at CVPH Family Medicine: **standardization of asthma management protocol**

INITIAL VISIT



FOLLOW-UP VISITS



Response

- Developed and distributed checklist and reference guide for faculty and residents to use for each asthma visit
- Presented PowerPoint, checklist and reference guide to residents and faculty
- Reference guide contents:
 - Classifying asthma severity
 - Assessing asthma control and adjusting therapy
 - Stepwise approach to managing asthma
 - Asthma Control Test (ACT)
 - Asthma Action Plan Template
 - Inhaled Steroid Dosing Chart Link

Asthma Quality Improvement Quick Reference Checklist and Guidelines¹¹

Developed by Michael Chmielewski, MS3

- Asthma documented as intermittent or persistent
- Controller medication prescribed if asthma is persistent (page 4)
- Asthma control assessed with a validated tool (page 5)
- Asthma action plan reviewed/updated within past 12 months (page 6)
- Planned asthma visit within next six months
- Tobacco use/exposure assessed
- Education about asthma
- Instruction on device use
- Spirometry or pulmonary function tests on file

INITIAL VISIT: CLASSIFYING ASTHMA SEVERITY AND INITIATING THERAPY 10

Level of severity (Columns 2-5) is determined by events listed in Column 1 for both impairment, frequency and intensity of symptoms and functional limitations and risk of exacerbations. Assess impairment by patient's or caregiver's recall of events during the previous 2-4 weeks; assess risk over the last year. Recommendations for initiating therapy based on level of severity are presented in the last row.

Component of Severity	Intermittent				Mild				Moderate				Severe			
	Step 1 0-4 years	Step 2 5-7 years	Step 3 8-12 years	Step 4 13-17 years	Step 1 0-4 years	Step 2 5-7 years	Step 3 8-12 years	Step 4 13-17 years	Step 1 0-4 years	Step 2 5-7 years	Step 3 8-12 years	Step 4 13-17 years	Step 1 0-4 years	Step 2 5-7 years	Step 3 8-12 years	Step 4 13-17 years
Symptoms	≤2 days/week	≤2 days/week	≤2 days/week	≤2 days/week	≤2 days/week	≤2 days/week	≤2 days/week	≤2 days/week	≤2 days/week	≤2 days/week	≤2 days/week	≤2 days/week	≤2 days/week	≤2 days/week	≤2 days/week	≤2 days/week
Impairment	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
Risk	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None

STEPWISE APPROACH FOR MANAGING ASTHMA LONG TERM 10

ASSESS CONTROL: STEP UP IF NEEDED. STEP DOWN IF POSSIBLE. Assess and adjust controller and reliever.

Step	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6
Controller	Low-dose ICS	Low-dose ICS/LABA	Low-dose ICS/LABA	Low-dose ICS/LABA	Low-dose ICS/LABA	Low-dose ICS/LABA
Reliever	SABA	SABA	SABA	SABA	SABA	SABA

Asthma Action Plan 10

For: _____ Date: _____

Doing Well: [Green Zone]

Asthma is Getting Worse: [Yellow Zone]

Medical Alert: [Red Zone]

DANGER SIGNS: [Red Box]

Effectiveness and Limitations

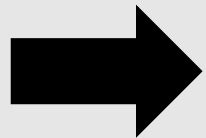
Proposed Evaluation of Effectiveness

Collect data regarding proportion of patients that have:

- Asthma correctly documented in EMR
- Appropriate medications prescribed based on severity of disease
- Asthma control assessed with a validated tool
- Updated asthma action plan and regular office visits
- Tobacco use/exposure assessment
- Education about asthma and medications

Limitations

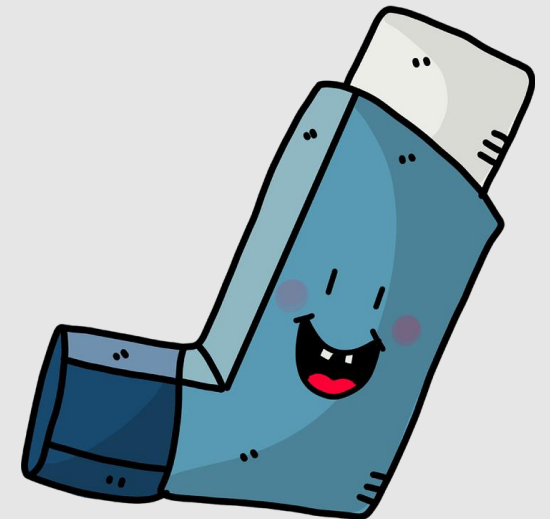
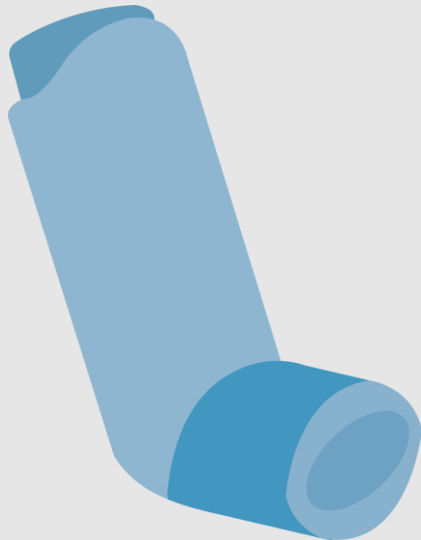
- No outcomes measured
- Short duration of project
- Potentially creates more work for providers



[Link to outcomes \(hospitalizations, ED visits\)](#)

Recommendations for Future Interventions

- Build checklist into EPIC EMR (dot phrase?)
- Track outcomes (ED visits and hospitalizations) for patients with asthma using chart review
- Clinic-wide training session (spirometry, device education, EMR training)



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