Asthma Ready® Communities

Patient-centered Medical Home & Asthma

Identify high impact EPR3 assessments that both clinicians & “educators” can perform

Objective 1

Describe a push-pull strategy for keeping the person with asthma connected to the medical home

Objective 2
Could merging clinical and community assessments with claims data strengthen the medical home by improving asthma care, prompting delivery of special care and education with lower costs and better patient outcomes?

<table>
<thead>
<tr>
<th>Message Type</th>
<th>Audience</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Asthma Literacy</td>
<td>Everyone w/asthma</td>
<td>Low ($5-$25)</td>
</tr>
<tr>
<td>2) Key Messages</td>
<td>Patient and family</td>
<td>Low (bundled)</td>
</tr>
<tr>
<td>3) Risk Reduction</td>
<td>Patient and family</td>
<td>Medium ($20-$80)</td>
</tr>
<tr>
<td>4) Self-management</td>
<td>Patient and family</td>
<td>Medium ($60-$120)</td>
</tr>
</tbody>
</table>

**Stratified**: intensity (cost) of care is appropriate for burden of disease (not just the dollars spent on health care)
Three Critical Data Sources
1) Clinical care
2) Claims data
3) Community interventions
   a) pharmacists
   b) school/occupational nurses
   c) educators/asthma “coaches”
   d) in-home trigger reduction
http://asthma.esgn.tv/school_nurse_visit

Claims Data Explained
Insurers receive bills from health care providers, pharmacies, hospitals, durable medical equipment companies and others who deliver covered products or services to beneficiaries. These charges are collectively called “administrative claims.”

“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
(p. 35)
Assessment Components

- Impairment
- Risk
- Responsiveness
  - “The ease with which asthma control is achieved by therapy.”
  - Exacerbations – reversibility of airflow obstruction and symptoms to treatments at home (p. 382) & clinic/ED (p. 380)

Control Classifications

- Well Controlled
- Not Well Controlled
- Very Poorly Controlled

“Children’s school absences and their parents’ absences from work represented the greatest economic burden of impairment in children with severe asthma (observational study, 600 children).

*Chest Physician, vol. 512, p. 29, December 2010*

Improve Asthma Assessment & Education for Self Care

- 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 – support clinical decision-making, provide care and education to improve patient outcomes
Clinicians Assess Impairment & Risk

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
Increase ICS Consumption!
Preferred Rx for all age groups

Effects of Inhaled Corticosteroids on Inflammation

ICS Use & Hospitalization

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


Donahue et al. JAMA. 1997;277:887-891.
ICS Use and Risk of Death

![Graph showing the relationship between the number of canisters of ICS per year and the rate ratio for death from asthma.](image)

Under-utilization of ICS - WHY???
- Inadequately prescribed by providers
- Inaccurate determination of persistent disease
- Safety concerns
- Inadequately taken by patients
- Reluctance to use daily therapy
- Fear of “steroids” and confusion with anabolic steroids
- Lack of perception of effect
- Clinical histories are discordant with claims

Assess Airflow – Identify Obstruction

![Diagram showing components of severity and classification of asthma severity.](image)
Airflow Assessment

- Spirometry by forced **expiratory** maneuver
  - forced vital capacity (FVC)
  - forced expiratory volume in 1 second (FEV₁)
  - ratio of FEV₁ to FVC (FEV₁/FVC)
  - percent predicted FEV₁ (%FEV₁)
  - peak expiratory flow rate (PEF)
- Inhalation effort by simulation of inhaler technique
  - inspiratory flow rate (IFR)
  - Inspiratory flow time (IFT)

“Spirometry Light”

- After standardized training school nurses and clinic staff received an electronic flow meter capable of selecting best FEV₁ and PEF after a series of 3 or more efforts.
- Prescribers also received a more costly meter capable of measuring FEV₁/FVC ratio and calculating % predicted FVC and FEV₁.

EPR3 Airflow Assessment Criteria

- **Severity**: FEV₁/FVC*, FEV₁
- **Control**: FEV₁/FVC*, FEV₁
- **Exacerbations**: FEV₁*, PEF
- **Home assessment**: PEF (or FEV₁*)

*preferred (more sensitive)
Airflow Assessment

- Spirometry by forced expiratory maneuver
  - forced vital capacity (FVC)
  - forced expiratory volume in 1 second (FEV1)
  - ratio of FEV1 to FVC (FEV1/FVC)
  - percent predicted FEV1 (%FEV1)
  - peak expiratory flow rate (PEF)

  Inhalation effort by simulation of inhaler technique
  - inspiratory flow rate (IFR)
  - Inspiratory flow time (IFT)

Improve Inhalation Technique

- 94664
  - use objective measures
  - document inspiratory time and flow
  - coach to EPR3 benchmarks
  - use assistive devices, VHC, VHC with mask, 2-Tone MDI trainers
  - reinforce across settings
**Do health professionals know how to effectively inhale medications?**

Health Professionals speed of inhalation when asked to inhale as if using an MDI - 
“Slowly and Deeply”

- Inspiratory flow rate (IFR)
- Inspiratory flow time (IFT)

Total = 1271 tests conducted: over 80% inhaled too fast

**Do people with asthma know how to effectively inhale medications?**

Asthmatics - speed of inhalation through Metered Dose Inhaler

- Inspiratory flow rate (IFR)
- Inspiratory flow time (IFT)

Total = 1058 tests conducted: over 80% inhaled too fast

**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?**
**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)

**Fate of inhaled drugs – Good Technique**

**Fate of inhaled drugs – Poor Technique**
Medical Home
Person with Asthma
Community Partners

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

Child Asthma Risk Assessment Tool
“Community” Asthma Assessments

1) Custom assessment scan form/web form
2) Before and after playing the ACE© DVD
3) Incorporates CARAT (Childhood Asthma Risk Assessment Tool)
4) For “very poorly controlled asthma”

March 26, 2012

Educator Assessment (ACE©)

March 26, 2012
All interventions are coupled with EPR3-compliant assessments (impairment and risk)
All paid encounters (clinic or community) generate EPR3-compliant data
Claims and assessment data are merged to stratify risk, assess impairment and prompt a cost-effective intervention

Who Could Help With These Assessments & Intervene to Improve Outcomes?

1) Pharmacists?
2) School nurses
3) Community educators
Medication Related Problems
Pharmacists assess impairment & risk

Analysis of claims data is being used to identify 17 asthma management and medication-related problems by Missouri Medicaid. These problems are automatically detected by a logic engine and the pharmacist is notified at the time of dispensing a medication that a problem exists.

March 26, 2012

Medication Related Problems (2)
The pharmacist is given the option of accepting an encounter to address the problem. An assessment and counseling guide is provided to structure the encounter and pharmacist’s documentation. If completed within 30 days the pharmacist is reimbursed (99605,6,7) in 15 minute increments up to one hour a month for medication therapy management.

March 26, 2012
Medication Related Problems (3)
Examples of MRPs include:
1) Low rate of ICS refills
2) > 3 albuterol dispensed in 6 months
3) No spirometry in 3 years
4) Recent ER visit for asthma
5) > one oral steroid burst in 12 months

http://mediasuite.multicastmedia.com/player.php?v=allboy6yg
School nurses assess impairment & risk

Assessments are analyzed by EPR3 algorithms to suggest additional assessments and interventions by the school nurse.

Children are categorized into three zone classifications of EPR3.

Parents and PCPs are alerted by school nurse regarding findings in a timely manner.

All clinical interventions are collaborative with a goal of moving children into the GREEN zone over time. An expert support system is needed to provide resources, analysis and messaging.
School Nurse Assessments

- Objective measures of airflow by digital flow meter: FEV1 (% predicted, personal best, and % change with quick relief medicine)
- Objective measurement of inhalation technique: inspiratory flow rate and inspiratory flow time
- Impairment by Student Report: Activity limitation or sleep disruption due to breathing problems?
- Tobacco Smoke Exposure by Student Report (Likert scale)
- Faxed report requests updated asthma action plan for school

Excel app to calculate percent predicted FEV1 and peak flow

School Nurse TUAC Follow-Up Form - further actions
School Nurse Actions & Communication
- Sent home a Student Asthma Status Report Form: Inform family of asthma events at school – includes subjective and objective measures, encourage communication/follow up with provider
- Called and talked to the family about their child’s asthma assessment findings
- Met face-to-face with this family to discuss their child’s asthma care at home and school
- Completed and sent a “School Nurse Report of Student Asthma Assessments” to (name of health care provider)
- Provided an ICS Star Chart to promote inhaled corticosteroid (ICS) adherence

Star Chart
- Place Star on Chart for morning and evening ICS dose, $10 gift card if 100 doses in 60 days

ICS Star Chart

Asthma Control Data Monitor©
### Asthma Control Monitor©
#### (Patient 1)

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<td>High</td>
<td>Sub-Therapeutic</td>
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<td>Inhalation Technique</td>
<td>Good</td>
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<td>Poor</td>
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<td>SABA</td>
<td>&lt; 3 / week</td>
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<td>FEV₁</td>
<td>&gt; 60% of personal best</td>
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Summary: This child demonstrates very poorly controlled asthma with evidence of good inhalation technique, adequate possession of ICS, moderate amount of use of SABA, more than 3 oral steroid bursts, more than 6 days of acute care for asthma and very high cost of care. **Recommendation:** Consider ACE, a toe MRI tracker, spacer, teach target time, and school nurse contact for more coaching.

### Asthma Control Monitor©
#### (Patient 2)

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Summary: This child demonstrates very poorly controlled asthma with evidence of poor inhalation technique, adequate possession of ICS, more than 3 oral steroid bursts, more than 6 days of acute care for asthma and very high cost of care. **Recommendation:** Consider ACE, a toe MRI tracker, spacer, teach target time, and school nurse contact for more coaching.

### Asthma Control Monitor©
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Summary: This child demonstrates very poorly controlled asthma with evidence of good inhalation technique, high FEV₁, moderate amount of use of SABA, more than 3 oral steroid bursts, more than 6 days of acute care for asthma and very high cost of care. **Recommendation:** Consider ACE, star chart to encourage compliance with ICS and school nurse alert for monitoring.