AnMed Health’s Asthmania Academy
A Community-Focused Asthma Education Program Model

*Developing a Generation of “Control Freaks”*
Association of Asthma Educators Conference 2018, Phoenix Arizona
Assembling the Puzzle of Asthma Education and Treatment

Conflict of Interest

I have no real or perceived conflict of interest that relates to this presentation. Any use of brand names is not in any way meant to be an endorsement of a specific product, but to merely illustrate a point of emphasis.
Objectives

Learning objectives for this presentation:

- Identify issues contributing to poor asthma control (Case scenario)
- Identify core beliefs that are important as we approach issues of asthma control (evidence-based).
- Discuss a successful asthma self-management education program model (Asthmania Academy)
  - Program model
  - Outcomes
  - Fiscal sustainability

Asthma – under the radar

- Deaths are rare compared to other diseases:
  - CDC reports 3,615 people died in 2015 from asthma (Data released 11/27/17).

- Other causes:
  - Heart disease: 633,842
  - Cancer: 595,930
  - Chronic lower respiratory diseases: 155,041
  - Stroke (cerebrovascular diseases): 140,323
  - Accidents (unintentional injuries): 146,571
  - Alzheimer's disease: 110,561
  - Diabetes: 79,535
  - Asthma: 3,615

Data source: National Center for Health Statistics 2015 data
Problem?

- 1980 – 2016: U.S. asthma cases quadrupled (from an estimated 6.7 million to 26.5 million).
  - 36 year time span

- 1990 – 2013: Costs for asthma have increased 8-fold or more (from an estimated $6.2 billion to an estimated $50 billion).
  - 23 years
  - That’s medical costs only – prescriptions, office visits, IP/OP hosp., ED, etc.
  - Does NOT include cost of missed work/school days

- Missed work and school days, combined, cost $3 billion per year, representing 8.7 million workdays and 5.2 million school days (annual average 2008-2013)

Data sources:
- CDC May 2018

Problem?

South Carolina

- Asthma is the leading cause of hospitalization for children
- Over 137,000 ER visits were due to asthma during 2009-2011
- >36,000 of these visits were children <18 yrs.

Arizona

- 10.9% of children reported having asthma (compared to national rate 9.2%)
- Overall prevalence 9.6%
- Annually:
  - > 27,000 ED and hospital discharges (2014).
  - Estimated cost: $115 million with the single largest payer source the State Medicaid program - Arizona Health Care Cost Containment System (AHCCCS).

SC Dept. of Health and Environmental Control (DHEC)
California Breathing, Environmental Health Investigations Branch of the California Department of Public Health
Key Point

- Yes - Asthma is a problem

- Not getting better despite:
  - A better understanding of the disease
  - Updated guidelines
  - New medications...

Exploring asthma through a case scenario
Cody is an 8 yr old boy with asthma. One night he developed a bit of a cough so his mom gave him some cough medicine. He was not in any acute distress.

The next morning Cody seemed a little tired, but otherwise normal so his mom went ahead and took him to school. During class, he began to cough and couldn’t catch his breath so his teacher excused him to get some water. The principal saw Cody in the hall and thought that Cody should go see the school nurse. By this time, Cody was wheezing and in a good bit of distress so the nurse called his parents and 911.

Cody was taken via ambulance to the ER where he received steroids and several albuterol treatments with little improvement. A chest x-ray revealed hyperinflated lung fields. The decision was made to admit Cody to the hospital.

In the hospital, he received scheduled albuterol treatments for another day and half, along with additional steroids, and some antibiotics “just to be on the safe side”. While Cody was hospitalized, he and his family received extensive asthma education. He was discharged home after a 2 day hospital stay with prescriptions for Flovent, Albuterol, Singular, and a steroid taper over several days. Appointments were made for follow-up with his primary care doctor and with an asthma specialist. His family stopped by the pharmacy to fill his prescriptions on the way home, and Cody was back to school in another day or so.
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Key points...

1. Asthma is a problem...

2. Furthermore, it is a multi-faceted problem and there a LOT of people who have the potential to affect outcomes ...
Is it true? Do you believe it...?

From the National Heart, Lung, and Blood Institute’s 2007 publication So You Have Asthma

Your asthma can be controlled!

By managing your asthma effectively—taking your medicines as prescribed, avoiding your asthma triggers, and monitoring your asthma—you should be able to get—and keep—your asthma under control.

You should expect nothing less!

Guideline-based care works....


- Achieving asthma control in the inner city: do the National Institutes of Health Asthma Guidelines really work? Szefler SJ; Gergen PJ; Mitchell H; Morgan W. - J Allergy Clin Immunol. 2010; 125(3):521-6

Key points...

1. Asthma is a problem...
2. It is a multi-faceted problem...
3. But – asthma can be controlled using guideline-based education/management strategies.

Are we missing something – and if so – what???

A few words about “The Asthma Guidelines”

- National Heart, Lung, and Blood Institute’s “Guidelines for the Diagnosis and Management of Asthma”
  - Historically - revised or updated “every 5 years
  - Most recent is the Expert Panel Report 3 (2007)
  - 440 pages including references etc.

- Sometimes referred to as:
  - “The Guidelines”
  - “EPR – 3”
  - NIH Guidelines
  - NHLBI Guidelines

- Foundation for good asthma care – NOT federal law
Guidelines work – but do we use them?

- Physician prescribing of asthma pharmacotherapy does not adequately comply with EPR-2 treatment guidelines. Prakash Navaratnam MPH, PhD; Sujata S. Jayawant MS; Craig A. Pedersen PhD; Rajesh Balkrishnan PhD. Annals of Allergy, Asthma and Immunology 2008, vol. 100, no. 3, pp. 216 - 221


Key points...

1. Asthma is a problem...
2. It is a multi-faceted problem...
3. It’s a problem that can be addressed using guideline-based education/management strategies...
4. However – use of guidelines is not consistent among physicians or non-physician healthcare professionals...

Are we missing something?
The Asthmania Academy Model

Designed to address specific issues:

1. Guideline knowledge/mgmt/education is not optimal across the continuum of care; consistent use of guidelines is an important first step.

2. PCPs don’t have the time or staff to provide in-depth, individualized asthma education.

3. The inpatient setting and the ED likely have teachable moments, but they are not ideal settings for learning – need clear and consistent messages, action plans, etc.

4. Children with asthma (and their families) are getting very mixed messages about their disease (remember all those people Cody came across...?)

5. Many parents don’t know what well-controlled asthma is supposed to look like (“he was only in the hospital once this year”, “she’s fine as long as she takes her albuterol”...)

Focus is on gaining asthma control...
Asthmania Academy

- Opened in January 2009
- One of 3 programs in the United States with Asthma Self-Management Education (ASME) Certification
- Staffed by certified asthma educators, respiratory therapists, and pediatric hospitalists on demand
- Operates 2 days a week
- Made possible through a re-allocation of internal resources

Asthmania Academy Process

- Referrals - IP, PCP, Kids’ Care/ER, School Nurse, Self-referral
- We perform lung function testing, provide individualized asthma education, and co-develop a family centric written asthma plan reviewed by an Asthmania Academy physician
- The patient gains a better understanding of how to self manage their condition, a written action plan with copies for the school nurse and extended family, and phone/email info for a certified asthma educator
Asthmania Academy Process

- The Patient’s Primary Care Physician receives: a report with EPR-3 Guideline-based recommendations, a copy of the asthma action plan, and a copy of diagnostic study results.

- Connect patient with resources:
  - Family Connection’s Project Breathe Easy (Community Health Worker home visits)
  - Work to find a PCP if they don’t have one

- IMPORTANT CONCEPT – We are not, and cannot be, the patients health care provider. We provide education and services that PCPs (and even pulmonology) offices can not do with time-limited office visits.
Our 3R’s Definition

- **Asthma is...**
  - **Reactive:** flare ups usually happen in response to a trigger such as a cold, allergies or cigarette smoke
  - **Repetitive:** patients will have flare ups again and again, especially if they are not on the right medications
  - **Reversible:** symptoms improve with Albuterol, which opens up the airways quickly, and with steroids that calm the swelling down over time

Common Asthma Action Plans
Common Asthma Action Plans

Well
- Green Zone (Clear Helth)
  - Asthma symptoms: coughing or wheezing
  - No trouble breathing
  - No school absences
  - No rescue medicines

Getting Sick
- Yellow Zone (Caution)
  - Asthma symptoms: coughing or wheezing
  - Trouble breathing
  - School absences
  - Rescue medicines

Emergency
- Red Zone (Emergency)
  - Asthma symptoms: severe coughing or wheezing
  - Trouble breathing
  - School absences
  - Rescue medicines

Control Freaks!
(Goal is always Well-Controlled Asthma)

- Full participation in physical activities (PE, team sports, etc.)
- Rare school absences
- “Colds” are short (3-4 days)
- Uninterrupted sleep
- Rare rescue medicines (1 – 2 X / mo)
- Infrequent oral steroids (1 – 2 X / yr)
- No hospitalizations
- Normal pulmonary function
- Few medication side - effects
Asthmania Academy / AnMed Health Outcomes

Pre-Asthmania vs Post-Asthmania

- AnMed Health has achieved:
  - 164% reduction in the number of IP pediatric asthma hospitalizations
  - 52% reduction in any pediatric asthma hospitalization (IP or OBS)
  - 12.0% reduction in average length of stay for IP pediatric asthma (2.079 vs. 1.852)
Comparison of asthma-related charges 1 year Pre/Post Asthmania Academy enrollment (n=58)

<table>
<thead>
<tr>
<th>Charges 12 months prior to Asthmania visit</th>
<th>Charges 12 months after Asthmania visit (includes Asthmania visit)</th>
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<tbody>
<tr>
<td>Average: $5,472.55</td>
<td>Total: $284,572.65</td>
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Cost Analysis – January 2009 through July 2012

Asthma Dx (493.**), age 0-17 years

<table>
<thead>
<tr>
<th>Category</th>
<th>Number of encounters</th>
<th>Charges</th>
<th>Costs</th>
<th>Reimbursement Actual Amount</th>
<th>Net Gain or Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>KC/MC (Outpatient Urgent Care setting)</td>
<td>875</td>
<td>$1,251,715.00</td>
<td>$507,871.00</td>
<td>$368,809.00</td>
<td>($139,062.00)</td>
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<tr>
<td>Emergency Department (ED)</td>
<td>764</td>
<td>$1,668,588.00</td>
<td>$600,043.00</td>
<td>$427,629.00</td>
<td>($172,414.00)</td>
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<tr>
<td>Inpatient Hospitalizations</td>
<td>283</td>
<td>$2,171,903.00</td>
<td>$866,800.00</td>
<td>$717,737.00</td>
<td>($149,063.00)</td>
</tr>
<tr>
<td>Asthmania Academy Visits</td>
<td>333</td>
<td>$132,662.00</td>
<td>$73,181.66</td>
<td>$89,127.33</td>
<td>$15,945.67</td>
</tr>
</tbody>
</table>
Things we have added over time...

- Partnering with local schools and school nurses
  - School RNs can refer directly to us
  - In school parent or child education sessions
  - “Trade” 4 sessions during the year for 4 days use of a school facility during the summer for Camp Asthmania

- Technology –
  - Impulse Oscillometry (IOS) for children unable to perform spirometry – have tested as young as 2.5 years. Measures airway resistance and can prove/disprove reversibility.

- Project Breathe Easy – community health worker home visits for continued education and environmental assessment.

- Blood allergen testing (region specific) with total IgE – results are shared with CHW prior to home visit so specific environmental allergens can be addressed in the home.

- Contract with BCBS to reimburse for asthma education (CPT 98960).

The future

- Further partnership with local schools and school nurses

- Technology –
  - Using telemedicine to provide asthma education

- Providing asthma educators to local physician practices

- Petitioning other Payers to recognize the value of high quality asthma education and to provide reimbursement.

- Expand services to include adults with asthma (especially young adults, college students/athletes)
This is why we do it....

Gregory

“That boy is 100% better...I used to worry about him. Now, I just let him go [play]. He’s not rasping and wheezing anymore.”

Jody, grandmother of Asthmania Academy patient, Gregory

Questions or comments?

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