Asthma Diagnosis & Documentation

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## Characteristics of Asthma: Indicators

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Indicators</th>
<th>Patterns</th>
</tr>
</thead>
</table>
| Symptoms        | • Wheeze  
• SOB  
• Difficulty breathing  
• Chest Tightness   | • >1 symptom  
• Episodic symptoms   |
| Temporal        | Symptoms worse:  
• at night  
or  
• upon awakening   |                                               |
| Variation       | • Time  
• Intensity   | • Airflow obstruction  
• Airway hyper-responsiveness   |
| Triggers        | Resulting in  
• manifestation of symptoms  
or  
• worsening symptoms   |                                               |
Triggers

- Exercise
- Viral infection
- Animals with fur/hair
- House-dust mite
- Pests (cockroaches)
- Mold
- Smoke (tobacco, wood)

- Pollen
- Changes in weather
- Strong emotional expression, stress
- Airborne chemicals
- Menstrual cycles
# Medical History

<table>
<thead>
<tr>
<th>Category</th>
<th>Indicators</th>
</tr>
</thead>
</table>
| Symptoms                                    | • Presence of symptoms  
                                           • Pattern of symptoms                                                         |
| Precipitating or Aggravating factors        | • Triggers                                                                 |
| Development of Disease                      | • Onset of symptoms  
                                           • Early life airway injury  
                                           • RSV  
                                           • Medications (microbiome alterations)                                         |
| FH                                          | • Asthma  
                                           • Allergy  
                                           • Sinusitis, Rhinitis  
                                           • Eczema  
                                           • Nasal polyps                                                               |
| SH                                          | • School & home characteristics  
                                           • Socioeconomic (low income)  
                                           • Environmental exposures  
                                           • Social support                                                             |

For Sharing

Frequent and early antibiotic use, frequent acetaminophen, low vitamin D associated with poor lung fx, NSAIDs (EPR-3, 2007). Conflicting evidence for and against acetaminophen and ibuprofen associated/not associated with development of asthma.
## Physical Exam

### General
- Hyper-expansion of thorax
- Accessory muscles
- Hunched shoulders
- Chest deformity

### HEENT
- Increased nasal secretion
- Mucosal swelling
- Nasal polyps

### Lungs
- Wheezing during normal breathing
- Prolonged forced exhalation phase

### Skin
- Allergic dermatitis
- Eczema

For Sharing
Diagnosis

- Symptoms + Medical History + Physical Exam
- Spirometry: Airflow obstruction & Reversibility
1. Episodic symptoms of airflow obstruction are present
2. Airflow obstruction is at least partially reversible
3. Alternative diagnoses are excluded
Differential Diagnosis

- Upper Airway: Allergic rhinitis & sinusitis
- Obstructions of large airways: Foreign body, vocal cord dysfunction, LAD laryngotracheomalacia, etc.
- Obstructions of small airways: Cystic fibrosis, bronchopulmonary dysplasia, heart disease
- Other: Recurrent cough not due to asthma, aspiration or GERD, OSA

- Asthma likelihood decreased
  1. Isolated cough without other symptoms
  2. Exercise induced dyspnea with noisy inspiration (VCD)
Peak Flow

- Spirometry is **gold standard** for diagnosis
- If spirometry not available: Evaluate for reversibility of airflow limitation
  - Sx & lung function before/after SABA 2 puffs - prompt relief
    - Therapeutic trial prn SABA ± regular ICS ±1 week course of OCS depending on severity
  - PEF self-monitoring BID suggest dx of asthma:
    - Improvement in PEF after inhalation of bronchodilator by 60L/min or >=20% from pre-bronchodilator value
    - Diurnal variation in PEF of >10% from BID readings
Considerations

- PEF can underestimate degrees of airflow limitation
- PEF not validated: Use same PEF
- Degree of airway reversibility correlates with airway inflammation
  - Greatest reversibility in response to SABA - greatest risk of developing fixed airflow obstruction & greatest loss of lung function
  - May not demonstrate complete reversibility until after a 2-3 week trial of OCS therapy
# Documentation Requirements

<table>
<thead>
<tr>
<th>Category</th>
<th>Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPI</td>
<td>Presenting symptoms, OLD CARTS</td>
</tr>
<tr>
<td>ROS</td>
<td>Allergies, seasonal allergies, allergic rhinitis, eczema - atopy</td>
</tr>
<tr>
<td>FH</td>
<td>Asthma, allergies</td>
</tr>
<tr>
<td>SH</td>
<td>Exposures, social support</td>
</tr>
<tr>
<td>PE</td>
<td>Vitals (tachycardia) &amp; O2 sat, General, HEENT, Heart, Lungs</td>
</tr>
<tr>
<td>Diagnostics</td>
<td>Spirometry if possible</td>
</tr>
<tr>
<td></td>
<td>Document reversibility (SABA, PEF)</td>
</tr>
<tr>
<td>Assessment</td>
<td>Asthma diagnosis:</td>
</tr>
<tr>
<td></td>
<td>Mild, moderate, severe</td>
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<tr>
<td></td>
<td>Persistent, intermittent</td>
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<tr>
<td></td>
<td>Exercised induced yes _ no _</td>
</tr>
<tr>
<td>Plan</td>
<td>Treatment, RTC 1-2 weeks</td>
</tr>
</tbody>
</table>

For Sharing
Documentation Requirements

- Mild, moderate, severe
- Intermittent, persistent
- Controlled/uncontrolled
- Exacerbation (yes/no)
- Exercise induced (Exercise induced bronchospasm)

- MUSIC (Bowman et al., 2008)
  - Manifestation
  - Underlying pathology
  - Severity (specificity)
  - Instigating (precipitating) cause
  - Complications (consequences)

- Meaningful Use Stage 2
  - Allergies, Medications (reconciliation, order, electronic Rx), patient education
ICD 10 codes

- Asthma J45
- Unspecified asthma J45.99
- Mild intermittent asthma J45
  - with exacerbation J45.21
  - with status asthmaticus J45.22
- Mild persistent asthma J45
  - with exacerbation J45.31
  - with status asthmaticus J45.32
- Moderate persistent asthma J45
  - with exacerbation J45.41
  - with status asthmaticus J45.42
- Severe persistent asthma J45
  - with exacerbation J45.51
  - with status asthmaticus J45.52
- Exercise induced bronchospasm J45.990
CPT Codes

- Patient education CPT codes
  - S9441 Asthma education, non-physician provider, per session (Asthma education)
    - Reimbursement Mean $56.15, Range 0-$65 (DOH, 2016)
  - Asthma Control Test 96160 Administration of a patient-focused health risk assessment instrument ($4.29)
  - Oximetry for oxygen saturation 94760 single ($2), repeated 94761 ($4)
  - E/M codes 99212 $36.59, 99213 $50.52, 99214 $79.45, 99215 $116.27
Asthma: _mild_ _moderate_ _severe; _intermittent_ _persistent; _controlled_ _uncontrolled_ _exercise induced. Exacerbation _yes, _no

**a.** Manifestation involves inflammation & bronchospasm resulting in airway constriction
Symptoms: cough, wheeze, shortness of breath, chest tightness. Triggers: inhaled allergens, respiratory irritants, exercise, comorbid conditions (GERD, OSA, allergic rhinitis, depression, chronic stress), medications including aspirin and NSAID use, influenza, pneumonia, dietary sulfites (processed potatoes, dried fruit sauerkraut, and shrimp).

**b.** Goals of treatment: reduce impairment & risk by controlling triggers & contributing factors.
Impairment is _ (Asthma Control Test and/or symptom assessment); Risk is _ (see below).
Risk Assessment: _Yes/ _No: Previous hospital/ED visit, previous oral corticosteroids; cigarette smoker, increase in symptoms after taking NSAID. If yes specify: _
Refer to pulmonologist for life-threatening asthma exacerbations, hospitalization or > 2 bursts of oral corticosteroids in a year, or uncontrolled asthma despite active treatment for > 6 months.
Asthma medication: _, changes in asthma medication: _; Medication technique reviewed _;
Referral for spirometry _; Influenza vaccine _; Asthma Control Test date _, score _;
Asthma Action Plan _ (date)
Follow up visit: _1-2 weeks (for newly diagnosed)
Asthma Registry

What is the asthma registry?

- Compilation of data elements from EMR associated with asthma
- Clinical Practice Excellence emails SBHC providers the registry link compiled from previous month SBHC kids having appointments at SBHCs
  - Possibility to change methodology for continuous data compilation instead of just previous month (March 2018)
  - Priscilla will look into having it saved in the Tdrive each month

How do you access the asthma registry?

- Click link

How do you use the asthma registry?

- Refer to paper printed registry
Clinical Pearls

1. Asthma Diagnosis: Requires episodic symptoms of airflow obstruction that is reversible
2. Documentation: MUSIC
3. Asthma Registry: Use to help to determine existing asthma diagnosis