Clinical Practice Guideline for the Management of Asthma in Children and Adults

Assessment:
- A critical aspect of the diagnosis and management of asthma is the precise and periodic measurement of lung function – both before and after bronco-dilator therapy to determine both the severity and the effectiveness of therapeutic interventions (see severity and therapy initiation and adjustment charts below).
- When establishing the diagnosis of asthma, evaluate the:
  - complete medical history (including direct and secondary exposure to triggering agents and events; physical examination, and diagnostic lung function and imaging studies
  - within medical history, establish that the episodic symptoms of airflow obstruction are present, and objectively demonstrate that obstruction is at least partially reversible with therapeutic agents
  - exclude the presence of any alternative diagnoses such as COPD, vocal chord obstruction, foreign body aspiration, congestive heart failure, structural abnormality and/or cystic fibrosis
  - medication requirements: requiring short-acting / rescue bronchodilators more than twice per week, should prompt the consideration of prescribing inhaled corticosteroids on a daily basis for persistent asthma
- Measures of assessment and monitoring:
  - Spirometry: At least once a year before and after inhaled bronchodilator therapy
    - Significant reversibility is indicated by an increase of ≥ 12% and 200 ml in FEV1
  - Peak Flow: Symptomatic patients with normal spirometry:
    - daily assessment of peak flow monitoring upon rising and before bedtime
    - maintain an accurate log of daily measurements to help detect subtle changes in lung function that may otherwise go unnoticed by the patient or the provider

Components of Severity and Therapy Initiation in Children (0-11 years):

<table>
<thead>
<tr>
<th>Components of Severity</th>
<th>Classifying Asthma Severity and Initiating Therapy in Children</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intermittent</td>
</tr>
<tr>
<td>Ages 0–4</td>
<td>Ages 5–11</td>
</tr>
<tr>
<td>Symptoms</td>
<td>≤2 days/week</td>
</tr>
<tr>
<td>Night-time awakening</td>
<td>0</td>
</tr>
<tr>
<td>Short-acting beta-agonist use for symptom control</td>
<td>≤2 days/week</td>
</tr>
<tr>
<td>Interference with normal activity</td>
<td>None</td>
</tr>
<tr>
<td>Lung Function</td>
<td>N/A</td>
</tr>
<tr>
<td>FEV1/FVC</td>
<td>&gt;85%</td>
</tr>
<tr>
<td>Exacerbations requiring oral systemic corticosteroids (consider severity and interval since last exacerbation)</td>
<td>0–1/year (see notes)</td>
</tr>
</tbody>
</table>

Recommended Step for Initiating Therapy
(See “Stepwise Approach for Managing Asthma” for treatment steps.)

The stepwise approach is meant to assist, not replace, the clinical decisionmaking required to meet individual patient needs.

- In 2–6 weeks, depending on severity, evaluate level of asthma control that is achieved.
  - Children 0–4 years old: If no clear benefit is observed in 4–6 weeks, step treatment and consider alternative diagnoses or adjusting therapy.
  - Children 5–11 years old: Adjust therapy accordingly.
### Assessing Asthma Control and Adjusting Therapy in Children (0-11 years)

#### Components of Control

<table>
<thead>
<tr>
<th>Well Controlled</th>
<th>Not Well Controlled</th>
<th>Very Poorly Controlled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ages 0–4</td>
<td>Ages 5–11</td>
<td>Ages 0–4</td>
</tr>
<tr>
<td><strong>Symptoms</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤2 days/week but not more than once on each day</td>
<td>&gt;2 days/week or multiple times on ≤2 days/week</td>
<td>Throughout the day</td>
</tr>
<tr>
<td><strong>Nighttime awakenings</strong></td>
<td>≤1x/month</td>
<td>&gt;1x/month</td>
</tr>
<tr>
<td><strong>Interference with normal activity</strong></td>
<td>None</td>
<td>Some limitation</td>
</tr>
<tr>
<td><strong>Impairment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short-acting beta-agonist use for symptom control (not prevention of EIB)</td>
<td>≤2 days/week</td>
<td>&gt;2 days/week</td>
</tr>
<tr>
<td><strong>Lung function</strong></td>
<td>N/A</td>
<td>&gt;80%</td>
</tr>
<tr>
<td>• FEV₁ (predicted) or peak flow personal best</td>
<td>&gt;80%</td>
<td>75–80%</td>
</tr>
<tr>
<td>• FEV₁/FVC</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Exacerbations requiring oral systemic corticosteroids</strong></td>
<td>0–1x/year</td>
<td>2–3x/year</td>
</tr>
<tr>
<td><strong>Risk</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reduction in lung growth</td>
<td>N/A</td>
<td>Requires long-term followup</td>
</tr>
<tr>
<td><strong>Treatment-related adverse effects</strong></td>
<td>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.</td>
<td></td>
</tr>
</tbody>
</table>

#### Recommended Action for Treatment

(See "Stepwise Approach for Managing Asthma" for treatment steps.)

**The stepwise approach is meant to assist, not replace, clinical decisionmaking required to meet individual patient needs.**

- Maintain current step.
- Regular followup every 1–6 months.
- Consider step down if well controlled for at least 3 months.

**Step up 1 step**

- Before step up:
  - Review adherence to medication, inhaler technique, and environmental control.
  - If alternative treatment was used, discontinue it and use preferred treatment for that step.
  - Reevaluate the level of asthma control in 2–6 weeks to achieve control; every 1–6 months to maintain control.
  - Children 0–4 years old: If no clear benefit is observed in 4–6 weeks, consider alternative diagnoses or adjusting therapy. Children 5–11 years old: Adjust therapy accordingly.
- For side effects, consider alternative treatment options.
### Classification of Asthma Severity

<table>
<thead>
<tr>
<th>Persistent Severity</th>
<th>Mild</th>
<th>Intermittent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Seasonal</strong></td>
<td>&gt;2 days/week but not daily</td>
<td>&lt;2 days/week</td>
</tr>
<tr>
<td><strong>Moderate</strong></td>
<td>&gt;3 days/week but not daily</td>
<td>&lt;2 days/week</td>
</tr>
<tr>
<td><strong>Severe</strong></td>
<td>&gt;4 days/week</td>
<td>&lt;2 days/week</td>
</tr>
</tbody>
</table>

**Components of Severity**

- **Symptoms**
  - Nighttime awakenings
  - Short-acting beta-agonist use for symptom control (not prevention of EIB)

- **Impairment**
  - Normal FEV₁/FVC
  - 8-19 yr: 35%
  - 20-39 yr: 55%
  - 40-59 yr: 75%
  - 60-80 yr: 70%

**Lung Function**

- FEV₁ ≥ 60% predicted
- FEV₁/FVC normal
- FEV₁/FVC reduced >5%

**Exacerbations requiring oral systemic corticosteroids**

**Risk**

- Infrequent exacerbations (0-1/year)
- Severe exacerbations (≥2/year)

**Stepwise Approach for Managing Asthma**

1. **Step 1**: Evaluate level of asthma control that is achieved and adjust therapy accordingly.
2. **Step 2**: Consider short course of oral systemic corticosteroids for exacerbations.
3. **Step 3**: Increase level of asthma control with long-term corticosteroids or oral bronchodilators.
4. **Step 4 or 5**: Consider oral systemic corticosteroids or add inhaled corticosteroids.

Relative annual risk of exacerbations may be related to FEV₁.
Assessing Asthma Control and Adjusting Therapy in Youths ≥ 12 years of Age and Adults

### Contributing Factors:
Assess at the initial evaluation & additional visits based on seasonal variations:

- **Smoking and secondhand smoke.** If the member smokes, please address the value and available resources to aid in smoking cessation.
- Identify possible environmental inhalant allergens, indoor irritants, pet dander, air pollution
- Viral Respiratory Infection component to induction of Reactive Airways Disease
- Identify all the modifiable risk factors: sedentary lifestyle, obesity, stress, smoking, drug use
- Identify other factors: acute/chronic rhino-sinusitis, gastro-esophageal reflux, drugs (ASA/NSAIDS, sulfites, beta-adrenergic blockers in sensitive patients)

### Triggers:
- Smoking and secondhand smoke
- Air pollution
- Things the member is allergic to: pet dander, dust mites, cockroaches or pollen
- For exercise induced asthma: advise members on the proper use of inhaler use before they exercise
- Dry, cold air
- Infection
- Some medicines, such as aspirin
**Pharmacotherapy:** Maintain optimal outcomes:
- Control chronic and nocturnal symptoms
- Maintain normal activity levels, including exercise
- Maintain near normal pulmonary function
- Prevent acute episodes of asthma exacerbation
- Avoid adverse effects of asthma medications
- In addition to allergen avoidance, enhance pharmacotherapy for environmental allergy based seasonal asthma, e.g. daily antihistamines and nasal steroid sprays to avoid asthma induction, daily inhaled corticosteroids during season even if not needed outside of season, etc.
- Annual Influenza immunization; Pneumococcal vaccination as appropriate

**Pharmacotherapy based on individual’s needs:**
- **Rescue Medication:**
  - Short Acting Beta2 Adrenergic Agonist Bronchodilator
  - Primary medication only for infrequent symptoms or pre-exposure prophylaxis
- **First Line Controller Medication:**
  - Inhaled Corticosteroids
  - To be added for ALL persistent disease, no matter how mild
- **Second Line Controller Medication:**
  - Long Acting Beta2 Adrenergic Agonist Bronchodilators
  - To be added for asthmatics inadequately controlled on steroids
- **Third Line Medications:**
  - Other anti-inflammatory inhalers
  - Only added for asthmatics inadequately controlled on 1st & 2nd step therapy
- **Fourth Line Medications:**
  - Methylxanthines
  - Available, but rarely required

**Patient Education:** All patients with Asthma should have a written Asthma Action Plan which incorporates all aspects of their Asthma care. This care plan should be re-evaluated at least annually and more often if necessary to help control the patient’s changing condition. A team approach, which includes the patient, the PCP, a certified asthma educator, and a pulmonary specialist when appropriate, is the ideal delivery model for the effective and efficient treatment of Asthma. Toward this end, the patient must understand his/her Asthma Action Plan – which includes:
- Short and long term goals
- Written environmental control recommendations
- Lifestyle changes including sick day interventions
- Self-monitoring of peak flows with use of a recording system (monthly calendar charting seasonal variations in asthma symptoms)
- Basic facts about asthma (provide written material for patient reference)
- List of environmental controls (stress the importance of implementation)
- Appropriate role of Asthma medications:
  - Explain use of controller vs. reliever medications
  - Provide Asthma Action Plan for medication use
  - Provide use instructions for MDI (observe use and critique technique) and the use of Spacer devises
  - Refer to WellCare Asthma Disease Management Program

**Monitoring and Reporting:**
- Establish therapeutic goals: Normal Activity without restriction, rare symptoms
- Provide instructions for monitoring and reporting
  - Practice use of peak flow meter as a monitoring tool and instruct patient to record missed school/work days, altered activity, symptom changes

**Follow up:**
- Routine office exams seasonally or every 1 to 6 months if stable, with increased frequency in acute cases or if patient’s routine “stable” status changes
- Assess attainment of patient goals and concerns
- Adjust treatment plans as often as necessary for optimal control; add inhaled corticosteroids for all persistent (rescue meds > twice per week) asthma, no matter how mild the severity
- Update the Asthma Action Plan and self-management plan at least annually, and more often as indicated for changes in status
- Re-assess patient’s peak flow and inhaler technique
- Smoking cessation program referral for smokers

**Current HEDIS ® Physician Measurement and Assessment of Compliance with Guidelines**
- Percent of members aged 5-56 years of age during the measurement year who were identified as having persistent asthma during the year prior to the measurement year and who were appropriately prescribed inhaled corticosteroids, leukotriene modifiers, or Nedocromil during the measurement year.


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