Asthma Guideline Implementation

**GOALS OF THERAPY**

**Reduce Impairment**
- Prevent chronic and troublesome symptoms
- Minimize the need to use SABA for relief of asthma symptoms to ≤2 days/week
- Maintain (near) normal pulmonary function
- Maintain normal activity levels

**Reduce Risk**
- Prevent recurrent exacerbations
- Provide optimal pharmacotherapy with minimal or no adverse effects
- Minimize the need for ED visits or hospitalizations

**Optimize Health and Function**
- Provide initial and ongoing education to patient and family
- Educate patient and family to recognize and avoid triggers
- Partner with patient and family to identify treatment goals and achieve well-controlled asthma that allows patient to fully and safely participate in activities (e.g., physical education, recess, sports, etc)
- Maintain patient’s and family’s satisfaction with asthma care

**ASSESSMENT**
- Classify asthma severity and level of asthma control
- Identify precipitating and exacerbating factors (i.e., asthma triggers, including those in the home, school, and child care settings)
- Identify comorbid medical conditions that may adversely affect asthma management
- Periodically inspect medications, inhaler, and spacer to verify appropriate type
- Regularly assess the patient’s and family’s knowledge and skills for self-management, including medication administration and inhaler and spacer technique

**VISIT FREQUENCY**
- **If asthma is not well controlled:** Visits at 2- to 6-week intervals are recommended
- **If asthma is well controlled:** Visits at 3- to 6-month intervals are recommended to monitor how well asthma control is maintained and to adjust medications as necessary

**PATIENT AND FAMILY EDUCATION**
- Incorporate the following into every clinical encounter:
  - **Use a written asthma action plan to share when and how to:**
    - Take daily actions to control asthma
    - Adjust medication in response to signs of worsening asthma
  - **Knowledge**
    - Basic facts about asthma
    - Role of medications
  - **Skills**
    - Take medications correctly, use appropriate type of inhaler and spacer with proper technique
    - Identify and avoid asthma triggers
    - Self-monitor level of asthma control
    - Recognize early signs and symptoms of worsening asthma
    - Seek medical care as appropriate
    - Communicate asthma information to school, child care center, and other caregivers

**OBTAIN SUBSPECIALIST CONSULTATION IF:**
- 0-4 years and Step 3 care or higher is required (may consider consultation at Step 2)
- 5 years or older and Step 4 care or higher is required (may consider consultation at Step 3)
- Difficulty in achieving or maintaining asthma control

---

**Information adapted from Texas Children’s Health Plan’s “Key Points for Asthma Guideline Implementation”**

Acronyms:
- SABA = Short acting beta agonist
- LABA = Long acting beta agonist
- ICS = Inhaled corticosteroid
- OCS = Oral corticosteroid
- ED = Emergency department
### Table 1: Stepwise approach to managing asthma

<table>
<thead>
<tr>
<th>Steps</th>
<th>Preferred treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>SABA prn</td>
</tr>
<tr>
<td>Step 2</td>
<td>Low dose ICS</td>
</tr>
<tr>
<td>Step 3</td>
<td>0-4 years: Medium dose ICS + subspecialist referral ≥ 5 years: Low dose ICS + LABA or medium dose ICS</td>
</tr>
<tr>
<td>Step 4</td>
<td>Medium dose ICS + LABA or montelukast + subspecialist referral</td>
</tr>
<tr>
<td>Step 5</td>
<td>High dose ICS + LABA or montelukast + subspecialist referral</td>
</tr>
<tr>
<td>Step 6</td>
<td>High dose ICS + LABA or montelukast + OCS + subspecialist referral</td>
</tr>
</tbody>
</table>

**Notes**
- The stepwise approach is meant to assist—not replace—clinical decision making.
- Before step up, review adherence, inhaler technique, environmental control and comorbid conditions.
- If clear benefit is not observed within 4-6 weeks and/or technique and adherence is not satisfactory, consider adjusting therapy and/or alternative diagnoses.

### Table 2: Classifying asthma severity and initiating therapy

<table>
<thead>
<tr>
<th>Components of severity</th>
<th>Intermittent</th>
<th>Persistent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mild</td>
<td>Moderate</td>
</tr>
<tr>
<td>Symptom</td>
<td>≤2 days/week</td>
<td>&gt;2 days/week</td>
</tr>
<tr>
<td>Nighttime awakenings</td>
<td>0 (≤4 years)</td>
<td>1-2x/month (≤4 years)</td>
</tr>
<tr>
<td></td>
<td>≤2x/month (≥5 years)</td>
<td>3-4x/month (≥5 years)</td>
</tr>
<tr>
<td>SABA use for symptoms</td>
<td>≤2 days/week</td>
<td>&gt;2 days/week</td>
</tr>
<tr>
<td>Limitation of normal activity</td>
<td>None</td>
<td>Minor</td>
</tr>
<tr>
<td>Lung function *</td>
<td>FEV1 &gt; 80%</td>
<td>FEV1 &gt; 80%</td>
</tr>
<tr>
<td></td>
<td>FEV1/FVC &gt; 85% (5-11 years)</td>
<td>FEV1/FVC &gt; 85% (5-11 years)</td>
</tr>
<tr>
<td></td>
<td>FEV1/FVC normal (≥12 years)</td>
<td>FEV1/FVC normal (≥12 years)</td>
</tr>
</tbody>
</table>

**Risk**
- Exacerbations requiring OCS
  - 0-1/year
  - ≥2/6 months (0-4 years) **
  - ≥2/year (≥5 years)

**Recommended step for initiating therapy ***
- Step 1
- Step 2
- Step 3

### Table 3: Assessing asthma control and adjusting therapy

<table>
<thead>
<tr>
<th>Components of control</th>
<th>Well controlled</th>
<th>Not well controlled</th>
<th>Very poorly controlled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptom</td>
<td>≤2 days/week</td>
<td>&gt;2 days/week or (if ≤11 years) multiple times ≤2 days/week</td>
<td>Throughout the day</td>
</tr>
<tr>
<td>Nighttime awakenings</td>
<td>≤1x/month (if ≤12 years)</td>
<td>2-3x/month (if ≤11 years)</td>
<td>≥2x/week (if ≤12 years)</td>
</tr>
<tr>
<td></td>
<td>≤2x/month (if &gt;12 years)</td>
<td>1-3x/week (if &gt;12 years)</td>
<td>≥4x/week (if &gt;12 years)</td>
</tr>
<tr>
<td>Interference with normal activity</td>
<td>None</td>
<td>Some limitation</td>
<td>Extremely limited</td>
</tr>
<tr>
<td>SABA use for symptoms</td>
<td>≤2 days/week</td>
<td>&gt;2 days/week</td>
<td>Several times per day</td>
</tr>
<tr>
<td>Lung function *</td>
<td>FEV1 &gt; 80%</td>
<td>FEV1 60-80%</td>
<td>FEV1 &lt; 60%</td>
</tr>
<tr>
<td></td>
<td>FEV1/FVC &gt; 80%</td>
<td>FEV1/FVC 75-80%</td>
<td>FEV1/FVC &lt; 75%</td>
</tr>
</tbody>
</table>

**Risk**
- Exacerbations requiring OCS
  - 0-1/year
  - 2-3x/year (if 0-4 years)
  - ≥2x/year (if ≥5 years)

- Reduction in lung growth
  - Requires long-term follow-up

**Recommended action for treatment ****
- Consider step down if well controlled for ≥3 months.
- Step up 1 step, Re-evaluate in 2-6 weeks.
- Consider short course oral corticosteroid.
- Step up 1-2 steps, Re-evaluate in 2 weeks.

**Acronyms**
- SABA = Short acting beta agonist
- LABA = Long acting beta agonist
- ICS = Inhaled corticosteroid
- OCS = Oral corticosteroid
- ED = Emergency department

**Notes**
- Some individuals with smaller lungs in relation to their height (such as a thin individual with narrow A-P diameter to their chest) may normally have FEV1 < 80% and/or FEV1/FVC < 85%. Lung function measures should be correlated with clinical assessment of asthma severity.
- For 0-4 years, ≥4 wheezing episodes per year each lasting >1 day and risk factors for persistent asthma meet risk criteria for persistent asthma.
- For initial therapy of moderate or severe persistent asthma that is poorly controlled, consider a short course of OCS.

**Recommended guidelines**