I. PURPOSE:
To define the expected standards of care for management of Asthma in Adults and Children. The overarching goal of asthma care is to achieve asthma control, enabling a patient to live without functional limitations, impairment in quality of life, or risk of adverse events.

II. POPULATION:
All currently enrolled DHMP and DHMC members with a diagnosis of asthma. This guideline will focus primarily on the management of asthma for those members who have already been diagnosed. For further information regarding the diagnosis of asthma, please refer to national guidelines or the Denver Health CHS Adult Asthma Care Guideline PolicyStat ID 2033380

III. GUIDELINE:
DHMC supports the National Heart, Lung, and Blood Institute (NHLBI) Education and Prevention Program. Program guidelines stress the assessment of asthma severity and control as a means of selecting and titrating treatment. NHLBI: Summary of Recommendations can be accessed at: https://www.nhlbi.nih.gov/health-pro/guidelines/current/asthma-guidelines/full-report. Specifically this guideline provides a framework to incorporate the Expert Panel Report 3 (EPR-3) into standard work for members with asthma.

A. Asthma Diagnosis:
   1. Detailed medical history:
      a. History of the Present Illness (HPI) – Assess for:
         i. Episodic symptoms of airflow obstruction or airway responsiveness (e.g., episodic wheezing, cough, shortness of breath).
         ii. Duration of symptoms
         iii. Associated symptoms
         iv. Triggers or alleviating factors
         v. Medication trials and outcomes
      b. Past Medical History (PMH):
         i. Allergies (seasonal, food, perennial)
         ii. Eczema
         iii. Other diagnoses that can masquerade as asthma (see Section B, item 3b of this guideline).
      c. Social History (SH):
         i. Current or former tobacco use, marijuana use, etc.
         ii. Exposure to second hand smoke
         iii. Animals in home
         iv. Molds
         v. Pests
      d. Family History
         i. Asthma
         ii. Allergy
         iii. Atopy
   2. Physical Exam

NOTE:
This guideline is designed to assist providers by providing an analytical framework for the evaluation and treatment of patients, and is not intended either to replace a clinician’s judgment or to establish a protocol for all patients with a particular condition.
a. Presence of wheeze or decreased aeration  
   b. Improvement in wheeze and aeration in response to bronchodilators  

3. Spirometry  
   a. Spirometry should be performed when feasible in all patients 8 year of age or older when the diagnosis is not clear based on history and physical exam findings  
   b. Any pediatric patients who have difficulties performing spirometry in the medical home and there is a question about the diagnosis, should be referred to a Pediatric Pulmonologist  
      i. Reversibility in children is determined by an increase in FEV₁ increases from baseline by > 12 percent of the predicted value.  
   c. Spirometry should meet American Thoracic Society (ATS) standards.  
   d. Spirometry measures should include:  
      i. FEV₁  
      ii. FVC  
      iii. FEV₁/FVC  

4. Classification of asthma severity and disease risk:  
   a. All asthma patients should have their asthma severity assessed before any therapy is begun. Refer to Classifying Asthma Severity and Initiating Therapy table from EPR-3's Asthma Care Quick Reference (https://www.nhlbi.nih.gov/sites/default/files/media/docs/12-5075.pdf.)  

B. Management:  

1. There are four components to asthma management as outlined by EPR-3:  
       a. Measures of assessment and monitoring  
       b. Education for partnership in asthma care  
       c. Control of environmental factors and comorbid conditions that affect asthma  
       d. Medications  

2. Measures of assessment and monitoring to diagnose and assess characteristics of asthma and to monitor whether asthma control is achieved and maintained. Refer to Assessing Asthma Control and Adjusting Therapy from EPR-3's Asthma Care Quick Reference (https://www.nhlbi.nih.gov/sites/default/files/media/docs/12-5075.pdf).  
       a. All asthma patients should be monitored for symptom control at every visit and at least once a year  
       b. Symptoms  
          i. Nighttime awakenings  
          ii. Need for SABA for quick relief of symptoms  
          iii. Work or school days missed  
          iv. Ability to engage in normal activity  
          v. Quality of life assessments  
       c. Spirometry may be performed annually or more often as determined by the provider.  
       d. Delineate persistent from intermittent disease. Persistent baseline/untreated asthma is suggested by any of the following:  

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i. Symptoms > 2 days/week OR

ii. Night awakenings from asthma ≥ 2 times/month OR

iii. Limitation of activities, despite pre-treatment for exercise induced asthma OR

iv. Short-acting beta agonist use > 2 times/week (not for exercise induced bronchospasm).

v. More than two steroid bursts in one year OR

vi. FEV₁ < 80% predicted, or lower than expected for age

e. Risk: Determine the patient’s overall risk:
   i. Exacerbation frequency
   ii. ED visits or other unannounced care
   iii. Decline in lung function greater than expected as a result of normal aging
   iv. Side effects of medications

f. In general, patients who have intermittent or mild persistent asthma that has been under control for at least three months should be seen by a clinician approximately every six months and patient who have uncontrolled and/or severe persistent asthma and those who need additional supervision to help them follow their treatment plan need to be seen more often.

3. Education for a partnership in asthma care
   a. Providers of asthmatic patients should discuss asthma and asthma triggers with patients when first diagnosed and on an ongoing basis. Providers include physicians, NPs, PAs, RNs and pharmacists. Educational handouts are available in EHR.
      i. What is asthma?
      ii. Asthma triggers?

b. Patients, in partnership with providers, should develop a self-management goal regarding their asthma

4. Control of environmental factors and comorbid conditions that affect asthma
   a. Advise patients to eliminate or reduce exposure to the following allergens/irritants
      i. Tobacco (cigarettes or vaping)
      ii. Marijuana
      iii. Indoor
         1. Pests (house dust mites, cockroaches)
         2. Animal dander
         3. Mold
         4. Wood burning
         5. Unvented gas stove
         6. Volatile organic compounds (e.g. paint, cleaning, fluids)
         7. Perfumes
         8. Incense or diffusers

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9. NSAIDs and aspirin in some adults
   iv. Outdoor
      1. Pollens

5. When patient’s asthma cannot be well controlled, evaluation for a complicating, comorbid condition, for example:
   a. Allergic bronchopulmonary aspergillosis
   b. Gastroesophageal reflux disease (GERD)
   c. Obesity
   d. Obstructive sleep apnea (OSA)
   e. Rhinitis/sinusitis
   f. Stress/depression
   g. Vocal cord dysfunction (VCD)
   h. Upper airway cough syndrome

6. Pharmacologic therapy:
   a. A stepwise approach to pharmacologic therapy is recommended to gain and maintain control of asthma in both the impairment and risk domains. Refer to the Stepwise Approach for Managing Asthma Long Term table from EPR-3’s Asthma Care Quick Reference (https://www.nhlbi.nih.gov/sites/default/files/media/docs/12-5075.pdf). When initiating therapy, the type, amount, and scheduling of medication is dictated by asthma severity. The level of control is considered when adjusting therapy. Step down therapy is essential to identify the minimum medication necessary to maintain control.
      i. Patients with persistent asthma should be on long-term controller medication to be taken daily. Inhaled corticosteroids (ICS) are the most potent and consistently effective long-term single control medication for asthma
      ii. Regularly scheduled daily chronic use of SABA is not recommended and generally indicates inadequate control of asthma and the need for initiating or intensifying anti-inflammatory therapy (e.g., ICS).
      iii. Step up therapy if needed to gain control patient medication use and technique should first be reviewed, as well as environmental control.
   iv. Spacers should be used with MDIs to optimize appropriate drug delivery. Videos demonstrating how to use inhalers with a spacer and mask and how to prime an asthma inhaler in English and Spanish can be found at DenverHealth.org/Asthma. In addition there are Denver Health created handouts on spacer with mask technique and spacer technique (without mask) in English and Spanish in HER

b. Long term controller medication
   i. ICS
   ii. ICS long-acting beta agonist (LABA) combination
   iii. LABA

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iv. LAMA  
v. Leukotriene modifier  
vi. Methylxanthines  

vii. Monoclonal antibody therapy  

7. Referrals  
   a. Pediatric patients have the option to see allergy if underlying inhalant and/or food allergies are a concern.  
   b. Pediatric patients have the options to see Pulmonology if they have difficult to control asthma, frequent exacerbations or comorbid conditions  

8. Goals of therapy  
   a. Patients should  
      i. Have no chronic symptoms day or night  
      ii. Have minimal or no exacerbations (i.e., PUCC/AUCC visits, ED visits, hospitalizations).  
      iii. Experience no activity limitations (i.e., no missed school or work).  
      iv. Have minimal use of quick relief agents (SABA use <2x/week-except for exercise-induced bronchospasm, one canister of SABA should last longer than one month).  
      v. Experience minimal or no adverse effects from medications  

D. Care and Management:  

Initial Visit:  

Follow-up Visits:  

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### D. Four Components of Care and Management:

1. **Assessment and monitoring:**
   - a. Assess asthma severity to initiate therapy.
   - b. Assess asthma control to monitor and adjust therapy.
   - c. Schedule follow-up care.
   - d. Consider specialty consult/referral with asthma symptoms that are difficult to control or require frequent hospitalization and/or ED visits.

2. **Education for a partnership in asthma care:**
   - b. Develop a written asthma action plan in partnership with the patient.
   - c. Integrate education into all points of care where health professionals interact with patients.

3. **Control environmental factors and comorbid conditions:**
   - a. Recommend measures to control exposures to allergens and pollutants or irritants that make asthma worse.
   - b. Treat comorbid conditions.

4. **Medications:**
   - a. Select medication and delivery devices to meet patient’s need and circumstances.

### NOTE:

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NOTE:
This guideline is designed to assist providers by providing an analytical framework for the evaluation and treatment of patients, and is not intended either to replace a clinician's judgment or to establish a protocol for all patients with a particular condition.
### Assessing severity and initiating therapy in children who are not currently taking long-term control medication

#### Components of Severity

<table>
<thead>
<tr>
<th>Impairment</th>
<th>Classification of Asthma Severity: Children 0-4 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Symptoms</strong></td>
<td>Intermittent Persistent</td>
</tr>
<tr>
<td>≤2 days/week</td>
<td>&gt;2 days/week but not daily</td>
</tr>
<tr>
<td>&gt;2 days/week but not daily</td>
<td>Daily</td>
</tr>
<tr>
<td>Daily</td>
<td>Throughout the day</td>
</tr>
<tr>
<td>Nighttime awakenings</td>
<td>0</td>
</tr>
<tr>
<td>1-2 x/month</td>
<td>3-4 x/month</td>
</tr>
<tr>
<td>3-4 x/month</td>
<td>&gt;1x/week</td>
</tr>
<tr>
<td>SABA use for symptom control</td>
<td>≤2 days/week</td>
</tr>
<tr>
<td>&gt;2 days/week but not daily</td>
<td>Daily</td>
</tr>
<tr>
<td>Daily</td>
<td>Several times per day</td>
</tr>
<tr>
<td>Interference with normal activity</td>
<td>None</td>
</tr>
<tr>
<td>Minor limitation</td>
<td>Some limitation</td>
</tr>
<tr>
<td>Extremely limited</td>
<td></td>
</tr>
</tbody>
</table>

#### Risk

Exacerbations requiring oral systemic corticosteroids:

- 0-1/year
- ≥2 exacerbations in 6 months requiring oral systemic corticosteroids, or ≥4 wheezing episodes per year lasting >1 day AND risk factors for persistent asthma

- Consider severity and interval since last exacerbation.
- Frequency and severity may fluctuate over time in any severity category.
- Exacerbations of any severity may occur in patients in any severity category.
- Relative annual risk of exacerbations may be related to FEV₁.

#### Recommended step for initiating therapy (see Stepwise Approach chart)

- **Step 1:** In 2-6 weeks, depending on severity, evaluate level of asthma control that is achieved. If no clear benefit is observed in 4-6 weeks, consider adjusting therapy or alternative diagnosis.
- **Step 2:** Step 3
- **Step 3:** consider short course of oral systemic corticosteroids

### Notes:
- Level of severity is determined by both impairment and risk. Assess impairment domain by caregiver’s recall of previous 2-4 weeks. Assign severity to the most severe category in which any feature occurs.
- At present, there are inadequate data to correspond frequencies of exacerbations with different levels of asthma severity. For treatment purposes, patients with ≥2 exacerbations requiring oral systemic corticosteroids in the past 6 months, or ≥4 wheezing episodes in the past year, and who have risk factors for persistent asthma may be considered the same as patients who have persistent asthma, even in the absence of impairment levels consistent with persistent asthma.
**Assessing Asthma CONTROL in Children 0-4 Years of Age**

<table>
<thead>
<tr>
<th>Components of Control</th>
<th>CLASSIFICATION OF ASTHMA CONTROL: CHILDREN 0-4 YEARS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Well Controlled</td>
</tr>
<tr>
<td>Impairment</td>
<td></td>
</tr>
<tr>
<td>Symptoms</td>
<td>≤2 days/week</td>
</tr>
<tr>
<td>≥1x/month</td>
<td>&gt;1x/month</td>
</tr>
<tr>
<td>Nighttime awakenings</td>
<td>≤1x/month</td>
</tr>
<tr>
<td>SABA use for symptom control</td>
<td>≤2 days/week</td>
</tr>
<tr>
<td>Interference with normal activity</td>
<td>None</td>
</tr>
<tr>
<td>Exacerbations requiring oral systemic corticosteroids</td>
<td>0-1/year</td>
</tr>
<tr>
<td>Risk</td>
<td></td>
</tr>
<tr>
<td>Treatment-related adverse events</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>
</tr>
</tbody>
</table>

**Recommended Action for Treatment**

- Maintain current step
- Regular follow ups every 1-6 months
- Consider step down if well controlled 3+ months
- Step up 1 step and reevaluate in 2-6 wks
- If no clear benefit in 4-6 wks, consider alternative diagnosis or adjusting therapy
- For side effects, consider alternative treatment options
- Consider short course of oral systemic corticosteroids
- Step up 1-2 steps and reevaluate in 2 wks.
- If no clear benefit in 4-6 wks, consider alternative diagnosis or adjusting therapy
- Consider expert consultation with difficult-to-control asthma or for help with the diagnosis and/or adherence
- For side effects, consider alternative treatments options

- Before step up in therapy:
  - Review adherence, technique, environmental control and comorbid conditions
  - If an alternative treatment option was used in a step, discontinue and use preferred treatment for that step.

- The level of control is based on the most severe impairment or risk category. Assess impairment domain by caregivers recall of previous 2-4 weeks. Symptom assessment for longer periods should reflect a global assessment, such as inquiring whether the patient’s asthma is better or worse since the last visit.
- At present, there are inadequate data to correspond frequencies of exacerbations with different levels of asthma control. In general, more frequent and intense exacerbations indicate poorer disease control. For treatment purposes, patients who had ≥2 exacerbations requiring oral systemic corticosteroids in the past year may be considered the same

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as patients who have not-well-controlled asthma, even in the absence of impairment levels consistent with persistent asthma.

### Persistent Asthma: daily medication

Consult with asthma specialist if step 3 care or higher is required
Consider consultation at step 2

<table>
<thead>
<tr>
<th>Intermittent Asthma</th>
<th>Persistent Asthma: daily medication</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STEP 1</strong></td>
<td><strong>STEP 1</strong></td>
</tr>
<tr>
<td>Preferred: SABA PRN</td>
<td>Preferred: Low-dose ICS</td>
</tr>
<tr>
<td>Alternative:</td>
<td>Alternative: Either Low-dose ICS</td>
</tr>
<tr>
<td>Cromolyn, LTRA,</td>
<td>either LABA, LTRA, Theophylline</td>
</tr>
<tr>
<td>Nedocromil, or</td>
<td>OR</td>
</tr>
<tr>
<td>Theophylline</td>
<td>Medium-dose ICS + either LABA, LTRA, or Theophylline</td>
</tr>
</tbody>
</table>

**STEP 2**

**STEP 3**

**STEP 4**

**STEP 5**

**STEP 6**

Quick-relief medication for all patients
- SABA as needed for symptoms, intensity of treatment depends on severity of symptoms: up to 3 treatments at 20 minute intervals as needed. Short course of oral systemic corticosteroids may be needed.
- Caution: Increasing use of SABA, or use >2 days per week for symptom relief (not for prevention of EIB) generally indicates inadequate control and need to step up treatment.

NOTES:
- The stepwise approach is meant to assist, not replace, the clinical decision making required to meet individual patient needs
- Abbreviations:
  - ICS: Inhaled corticosteroid
  - LABA: inhaled long-acting beta2-agonist
  - LTRA: leukotriene receptor antagonist
- Theophylline is less desirable due to the need to monitor serum concentration levels.
- The role of allergy in asthma is greater in children than in adults.

**NOTE:**
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Classifying Asthma Severity and Initiating Treatment in Children 5-11 Years of Age

<table>
<thead>
<tr>
<th>Components of Severity</th>
<th>CLASSIFICATION OF ASTHMA SEVERITY: CHILDREN 5-11 YEARS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Symptoms</strong></td>
<td></td>
</tr>
<tr>
<td>Intermittent</td>
<td>Persistent</td>
</tr>
<tr>
<td>≤2 days/week</td>
<td>&gt;2 days/week but not daily</td>
</tr>
<tr>
<td>Nighttime awakenings</td>
<td></td>
</tr>
<tr>
<td>≤2x/month</td>
<td>&gt;3-4x/month</td>
</tr>
<tr>
<td>SABA use for symptom control</td>
<td></td>
</tr>
<tr>
<td>≤2 days/week</td>
<td>&gt;2 days/week but not daily and not more than once/day</td>
</tr>
<tr>
<td>Interference with normal activity</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>Minor limitation</td>
</tr>
<tr>
<td>Lung Function</td>
<td></td>
</tr>
<tr>
<td>FEV1 (% predicted)</td>
<td></td>
</tr>
<tr>
<td>Normal FEV1 between exacerbations</td>
<td></td>
</tr>
<tr>
<td>&gt;80%</td>
<td></td>
</tr>
<tr>
<td>FEV1/FVC</td>
<td></td>
</tr>
<tr>
<td>&gt;85%</td>
<td></td>
</tr>
<tr>
<td>Risk</td>
<td></td>
</tr>
<tr>
<td>Exacerbations requiring oral systemic</td>
<td>0-1/year</td>
</tr>
<tr>
<td>corticosteroids</td>
<td>Generally, more frequent and intense events indicate greater severity Consider severity and interval since last exacerbation. Frequency and severity may fluctuate over time for patients in any severity category. Exacerbations of any severity may occur in patients in any severity category. Relative annual risk of exacerbations may be related to FEV1.</td>
</tr>
</tbody>
</table>

**Recommended step for initiating therapy**

**STEP 1**

In 2-6 weeks, depending on severity, evaluate level of asthma control that is achieved. If no clear benefit is observed in 4-6 weeks, consider adjusting therapy or alternative diagnosis.

**STEP 2**

Consider short course of oral systemic corticosteroids

**STEP 3**

Medium-dose inhaled corticosteroid option

**STEP 4**

Medium-dose inhaled corticosteroid option, or

Notes:
- Level of severity is determined by both impairment and risk. Assess impairment by caregiver’s recall of previous 2-4 weeks. Assess risk over the last year. Assign severity to the most severe category in which any feature occurs.
- At present, there are inadequate data to correspond frequencies of exacerbations with different levels of asthma severity. It is suggested that patients with ≥2 exacerbations, requiring oral systemic corticosteroids in the past 6 months, or ≥4 wheezing episodes in the past year, with risk factors for persistent asthma be considered the same as those with persistent asthma, even in the absence of impairment levels consistent with persistent asthma.

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Assessing Asthma Control in Children 5-11 Years of Age

### Classification of Asthma Control: Children 0-4 Years

<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><strong>Symptoms</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nighttime awakenings</td>
<td>≤1x/month</td>
<td>≥2x/month</td>
<td></td>
</tr>
<tr>
<td>SABA use for symptom control</td>
<td>≤2 days/week</td>
<td>&gt;2 days/week</td>
<td>Several times per day</td>
</tr>
<tr>
<td>Interference with normal activity</td>
<td>None</td>
<td>Some limitation</td>
<td>Extremely limited</td>
</tr>
<tr>
<td>Lung Function: FEV₁ or Peak/Flow</td>
<td>&gt;80% predicted/personal best</td>
<td>60-80% predicted/personal best</td>
<td>&lt;60% predicted/personal best</td>
</tr>
<tr>
<td>FEV₁/FVC</td>
<td>&gt;80%</td>
<td>75-80%</td>
<td>&lt;75%</td>
</tr>
<tr>
<td><strong>Exacerbations requiring oral systemic corticosteroids</strong></td>
<td>0-1/year</td>
<td>2-3/year</td>
<td>&gt;3/year</td>
</tr>
<tr>
<td><strong>Reduction in Lung Growth</strong></td>
<td>Evaluation requires long-term follow-up.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Treatment-related adverse events</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>
<td></td>
</tr>
</tbody>
</table>

#### Recommended Action for Treatment

- **The stepwise approach is meant to assist, not replace clinical decision making** to meet individual patient needs.

- **Before step up in therapy:**
  - Review adherence, technique, environmental control and comorbid conditions
  - If an alternative treatment option was used in a step, discontinue and use preferred treatment for that step.

### Notes

- The level of control is based on the most severe impairment or risk category.
- Assess impairment domain by patient/caregiver’s recall of previous 2-4 weeks and by spirometry/or peak flow measures.
- Symptom assessment for...
longer periods should reflect a global assessment, such as inquiring whether the patient’s asthma is better or worse since the last visit.

- At present, there are inadequate data to correspond frequencies of exacerbations with different levels of asthma control. In general, more frequent and intense exacerbations indicate poorer disease control. For treatment purposes, those with ≥2 exacerbations requiring oral systemic corticosteroids in the past year may be considered the same as patients who have not-well-controlled asthma, even in the absence of impairment levels consistent with persistent asthma.

STEPWISE APPROACH FOR MANAGING ASTHMA FOR MEMBERS ≥12 YEARS OF AGE:

**Persistent Asthma: Daily Medication**
Consult with asthma specialist if step 3 care or higher is required
Consider consultation at step 2

**STEP 1**
- Preferred: SABA PRN

**STEP 2**
- Preferred: Low-dose ICS
- Alternative: Cromolyn, LTRA, Nedocromil, or Theophylline

**STEP 3**
- Preferred: High-dose ICS + LABA OR Medium-dose ICS
- Alternative: Low-dose ICS + either LTRA, Theophylline, or Zileuton

**STEP 4**
- Preferred: High-dose ICS + LABA
- Alternative: Medium-dose ICS + either LTRA, Theophylline, or Zileuton

**STEP 5**
- Preferred: High-dose ICS + LABA AND Consider Omalizumab for patients who have allergies

**STEP 6**
- Preferred: High-dose ICS + LABA + oral systemic corticosteroid AND Consider Omalizumab for patients who have allergies

Step up if needed
(first check adherence, inhaler technique, and environmental control)

Step down if possible
(and asthma is well controlled at least 3 months)

ASSESS CONTROL

State Education and Environmental Control at each step
Management of Comorbidities at each step
Steps 2-4: Consider subcutaneous allergen immunotherapy for patients with allergic asthma

Quick-relief medication for all patients
- SABA as needed for symptoms, intensity of treatment depends on severity of symptoms: up to 3 treatments at 20 minute intervals as needed. Short course of oral systemic corticosteroids may be needed.
- Caution: Use of SABA >2 days per week for symptom relief (not for prevention of EIB) generally indicates inadequate control and need to step up treatment.

NOTES:
- The stepwise approach is meant to assist, not replace, the clinical decision making required to meet individual patient needs
- Abbreviations:
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### Assessing severity and initiating therapy in children who are not currently taking long-term control medication

<table>
<thead>
<tr>
<th>Components of Severity</th>
<th>Classification of Asthma Severity: ≥12 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intermittent</td>
</tr>
<tr>
<td></td>
<td>Mild</td>
</tr>
<tr>
<td>Symptoms ≤2 days/week</td>
<td>&gt;2 days/week but not daily</td>
</tr>
<tr>
<td>Nighttime awakenings</td>
<td>≤2x/month</td>
</tr>
<tr>
<td>SABA use for symptom control ≤2 days/week</td>
<td>&gt;2 days/week but not daily and not more than once/day</td>
</tr>
<tr>
<td>Interference with normal activity</td>
<td>None</td>
</tr>
<tr>
<td>Lung Function</td>
<td>Normal FEV₁ between exacerbations &gt;80%</td>
</tr>
<tr>
<td>FEV₁ (% predicted)</td>
<td>Normal*</td>
</tr>
<tr>
<td>FEV₁/FVC</td>
<td>Normal*</td>
</tr>
</tbody>
</table>

**Risk:** Exacerbations requiring oral systemic corticosteroids

0-1/year ≥2 exacerbations/year

- Generally, more frequent and intense events indicate greater severity
- Consider severity and interval since last exacerbation.
- Frequency and severity may fluctuate over time for patients in any severity category.
- Exacerbations of any severity may occur in patients in any severity category.
- Relative annual risk of exacerbations may be related to FEV₁.

**Recommended step for initiating therapy**

<table>
<thead>
<tr>
<th>STEP 1</th>
<th>STEP 2</th>
<th>STEP 3</th>
<th>STEP 4 OR 5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Consider short course of oral systemic corticosteroids</td>
<td>Consider short course of oral systemic corticosteroids</td>
</tr>
</tbody>
</table>

In 2-6 weeks, depending on severity, evaluate level of asthma control that is achieved. If no clear benefit is observed in 4-6 weeks, consider adjusting therapy or alternative diagnosis.

**Notes:**
- Level of severity is determined by both impairment and risk. Assess impairment by caregiver’s recall of previous 2-4 weeks. Assess risk over the last year. Assign severity to the most severe category in which any feature occurs.
- At present, there are inadequate data to correspond frequencies of exacerbations with different levels of asthma severity. It is suggested that patients with ≥2 exacerbations, requiring oral systemic corticosteroids in the past 6 months, or ≥4 wheezing episodes in the past year, with risk factors for persistent asthma be considered the same as those with persistent asthma, even in the absence of impairment levels consistent with persistent asthma.
- *normal FEV₁/FVC by age: 8-19 years, 85%; 20-39 years, 80%; 40-59 years, 75%; 60-80 years, 70%*
## Assessing Asthma CONTROL in youth and adults ≥12 Years of Age

<table>
<thead>
<tr>
<th>Components of Control</th>
<th>CLASSIFICATION OF ASTHMA CONTROL: ≥12 YEARS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impairment</td>
<td>Well Controlled</td>
</tr>
<tr>
<td>Symptoms</td>
<td>≤2 days/week</td>
</tr>
<tr>
<td>Nighttime awakenings</td>
<td>≤2x/month</td>
</tr>
<tr>
<td>Nighttime awakenings</td>
<td>≤2 days/week</td>
</tr>
<tr>
<td>SABA 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: FEV(_1) or Peak/Flow</td>
<td>&gt;80% predicted/personal best</td>
</tr>
<tr>
<td>Validated Questionnaires</td>
<td>ATAQ: 0</td>
</tr>
<tr>
<td></td>
<td>ACQ: ≤0.75</td>
</tr>
<tr>
<td></td>
<td>ACT: ≥20</td>
</tr>
<tr>
<td>Risk</td>
<td>0-1/year</td>
</tr>
<tr>
<td>Exacerbations requiring oral systemic corticosteroids</td>
<td>Evaluation requires long-term follow-up care.</td>
</tr>
<tr>
<td>Progressive loss of lung function</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>
</tr>
<tr>
<td>Treatment-related adverse events</td>
<td></td>
</tr>
</tbody>
</table>

### Recommended Action for treatment

The stepwise approach is meant to assist, not replace clinical decision making requires to meet individual patient needs.

- Maintain current step
- Regular follow ups every 1-6 months
- Consider step down if well controlled 3+ months
- Step up 1 step and reevaluate in 2-6wks
- For side effects, consider alternative treatment options
- Consider short course of oral systemic corticosteroids
- Step up 1-2 steps and reevaluate in 2wks
- Consider expert consultation with difficult-to-control asthma or for help with the diagnosis and/or adherence
- For side effects, consider alternative treatment options

Before step up in therapy:
- Review adherence, technique, environmental control and comorbid conditions
- If an alternative treatment option was used in a step, discontinue and use preferred treatment for that step.
- The level of control is based on the most severe impairment or risk category. Assess impairment domain by patient’s recall of previous 2-4 weeks and by spirometry/or peak flow measures. Symptom assessment for longer periods should reflect a global assessment, such as inquiring whether the patient’s asthma is better or worse since the last visit.
- At present, there are inadequate data to correspond frequencies of exacerbations with different levels of asthma control. In general, more frequent and intense exacerbations indicate poorer disease control. For treatment purposes, those with ≥2 exacerbations requiring oral systemic corticosteroids in the past year may be considered the same as patients who have not-well-controlled asthma, even in the absence of impairment levels consistent with not-well-controlled asthma.

REFERENCES:

DHHA RELATED DOCUMENTS
None

ATTACHMENTS
None

Signature: Christine Seals Messersmith MD
Christine Seals Messersmith MD (Nov 16, 2022 10:56 MST)
Email: christine.seals@dhha.org

NOTE:
This guideline is designed to assist providers by providing an analytical framework for the evaluation and treatment of patients, and is not intended either to replace a clinicians judgment or to establish a protocol for all patients with a particular condition.
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