EVALUATION AND TREATMENT

SANFORD HEALTH

SC Adult Asthma Practice Guidelines (age 12 and older)

Patient presents with respiratory signs & symptoms suggesting asthma – cough, wheezing, SOB, chest tightness

Diagnosis: History and Physical

- Diagnosis may be made from history, response to medications, and/or spirometry/lung challenge tests
- Consider symptom pattern, precipitating factors, patient/family hx of atopy, "colds" lasting > 10 days (**a**)
- Perform spirometry – if normal (FEV_1 > 80% & normal FEV_1/FVC) consider bronchial challenge test; if abnormal, do pre/post bronchodilator (nebulized albuterol or 4 puffs albuterol MDI). If FEV_1 improves ≥12% or 200 ml, treat for asthma.

If asthma diagnosis is indicated, proceed .

Assess SEVERITY if newly diagnosed or LEVEL of CONTROL in established asthmatics and Educate

- Administer Asthma Control Test (for patients on established medication for asthma) (**b**)
- Categorize level/severity (for patients not on controller medication for asthma) (Table **1** or **c**)

Assign to one of six treatment steps based on severity or level of control (f); also treat co-morbidities (i.e. allergic rhinitis, GERD, etc.)

Step 1 (Intermittent Asthma)	Step 2 (Persistent Asthma)	Step 3 (Persistent Asthma)	For Step 4, 5 and 6: Consider assessing for Anxiety using the PHQ4, if positive screen (See Table i), refer to Behavioral Health	Step 4 (Persistent Asthma)	Step 5 (Persistent Asthma)	Step 6 (Persistent Asthma)
Preferred: **SABA PRN** (inhaled short-acting $beta_2$-agonist)	*Preferred:* **SABA PRN + Low-dose ICS** *Alternative: see Table g*	*Preferred:* **SABA PRN + Low-dose ICS** (inhaled corticosteroid) **+ LABA*** (inhaled long-acting $beta_2$-agoinist) **Or** Medium-dose ICS *Alternative: see Table g*		*Preferred:* **SABA PRN + Medium-dose ICS + LABA* Or** Medium-dose ICS *Alternative: see Table g*	*Preferred:* **SABA PRN + High-dose ICS + LABA*** **AND** Consider Omalizumab for patients with allergies	*Preferred:* **SABA PRN + High-dose ICS + LABA* + oral corticosteroid** **AND** Consider Omalizumab for patients with allergies

Use treatment step necessary to gain and maintain control. Reassess at each asthma visit. Exacerbations may require stepping up and a short course of oral corticosteroids. If using reliever for symptoms > 2 days for weeks, step up therapy. ***Do not use LABA alone without daily anti-inflammatory medicine.**

Education

- Educate: Medication use: Controller vs. Reliever, Indications, Adverse Reactions
- Educate: Inhaler technique; peak flow (PF) meter use (consider in moderate to severe persistent asthma or difficult to manage)
- Educate: Identification & avoidance of triggers (**d**) , smoking cessation if needed (**e**) as needed
- Educate: Annual influenza vaccination and update pneumococcal vaccine for ages ≥19, consider booster over age 65
- **Outline Asthma Action Plan** (**d**): monitor symptom and reliever medicine use, guidelines for seeking medical help

Reassess

Follow up well controlled every 1-6 months, every 2-6 weeks for partly controlled, and at 2 weeks for uncontrolled patients. Consider stepping down therapy after 3 months of control. Do ACT (Asthma Control Test) at every visit. Review Action Plan every visit. Consider screening for depression/anxiety.

Goals of therapy met (h); ACT ≥ 20 with optimal spirometry and asymptomatic

Yes

Follow up at 6 month intervals:

- ACT and action plan
- Tobacco use
- Flu shot
- Medication review
- spirometry at least every 1-2 years

No

Consider These Before Stepping Up

- Reassess medication adherence (especially daily use of controller)
- Evaluate inhaler technique
- Adherence to environmental control
- Investigate other possible precipitating factors (i.e. allergens, GERD, Sinus infection, Beta-blocker use, vocal cord dysfunction, etc) or asthma mimickers (Cystic Fibrosis, Alpha-1 antitrypsin deficiency)
- Consider consultation with asthma specialist (pulmonologist or allergist) if needing step 3 therapy; consult if needing step 4 or higher

Sanford Clinic Asthma Practice Guidelines

Table a: Asthma Signs, Symptoms and Triggers

- Wheezing
- History of any of the following
  - Cough, worse particularly at night
  - Recurrent wheeze
  - Recurrent difficult breathing
  - Recurrent chest tightness
- Symptoms occur or worsen at night, awakening patient
- Symptoms occur or worsen in a seasonal pattern
- Patient has eczema, hay fever or family history of asthma or atopic diseases
- Symptoms occur or worsen in presence of animals with fur, aerosol chemicals, change in temperature, domestic dust mites, drugs (aspirin, beta blockers), pollen, respiratory viral infections, smoke, strong emotional expression
- Symptoms exacerbated by aerobic activity
- Symptoms respond to anti-asthma therapy
- Patient's colds "go to chest" & last > 10 days

Table b: Asthma Control Test TM (ACT)

All questions are answered and scored with the following key:

1. In the past 4 weeks, how much of the time did your asthma keep you from getting as much done at work, school or at home? *1= all of the time, 2= most of the time, 3= some of the time, 4= a little of the time, 5= None of the time*
2. During the past 4 weeks, how often have you had shortness of breath? *1=More than once a day, 2=once a day, 3=3-6 times a week, 4=once or twice a week, 5=not at all*
3. During the past 4 weeks, how often did your asthma symptoms (wheezing, coughing, shortness of breath, chest tightness or pain) wake you up at night or earlier than usual in the morning? *1=4 or more nights a week, 2=2 or 3 nights a week, 3=once a week, 4=once or twice, 5=not at all*
4. During the past 4 weeks, how often have you used our rescue inhaler or nebulizer medication (such as albuterol)? *1=3 or more times per day, 2=1 or 2 times per day, 3=2-3 times per week, 4=once a week or less, 5=not at all*
5. How would you rate your asthma control during the past 4 weeks? *1=not controlled at all, 2=poorly controlled, 3=somewhat controlled, 4=well controlled, 5=Completely controlled*

Add all scores together. A score of 19 or less, indicates asthma that is not under control.

Table c: Classification of Asthma Severity

Use for initial classification if patient not on controller medicine for asthma

1. Intermittent – Symptoms ≤ 2 days/week; nighttime awakenings ≤2x/month; reliever use for symptoms ≤ 2 days/week; activity interference none; lung function normal between flare-ups. (Initial therapy started on Step 1)
2. Mild Persistent - Symptoms > 2 days/week not daily; nighttime awakenings 3-4x/month; reliever use for symptoms ≥2 days/week but not daily; activity interference minor limitation; lung function FEV1 > 80%, FEV1/FVC normal. (Initial therapy started on Step 2).
3. Moderate Persistent - Symptoms daily; nighttime awakenings > 1x/week but not nightly; reliever use for symptoms daily; activity interference some limitation; lung function normal FEV1 > 60% but < 80%, FEV1/FVC reduced 5%. (Initial therapy started on Step 3).
4. Severe Persistent - Symptoms throughout the day; nighttime awakenings often 7x/week; reliever use for symptoms several time/day; activity interference extremely limited; lung function normal FEV1 < 60%, FEV1/FVC reduced > 5%. (Initial therapy started on Step 4 or 5).

Table d: See Attached action plan and trigger sheet

Action Plan (self-management plan): written instructions include what to do daily when well, when symptoms start, when urgent care is needed, medication doses and purposes.

Source Control – Individualized; avoidance or decreasing exposure leads to greater control and often need for less medications. (See Table a for triggers.)

Table e: Guideline for Treating Tobacco Dependence

1. **Ask –** document tobacco use at every visit
2. Advise – strongly urge all tobacco users to quit
3. Assess – determine willingness to make a quit attempt
4. Assist – aid the patient in quitting: set quit date
5. Arrange – refer to resources such as quit lines, give prescription for medications as needed.
6. www.smokefree.gov

Table f: Medication Abbreviations

Relievers:

SABA – inhaled short-acting $beta_2$-agonist

Controllers

ICS – inhaled corticosteroid

LABA – inhaled long-acting $beta_2$-agoinist

LTRA – Leukotriene receptor antagonist

Table g: Alternative Medicine for step 2, 3 and 4

Step 2: Cromolyn, LTRA, Nedocromil, or Theophylline

Step 3: Low-dose ICS + either LTRA, Theophylline or zileuton

Step 4: Low-dose ICS + either LTRA, Theophylline or zileuton

Table h: Asthma Therapy Goals

- Prevent chronic and troublesome symptoms
- Require infrequent symptoms-related SABA use (≤ 2x/week)
- Maintain near normal pulmonary function/ prevent loss of lung function
- Maintain normal activity levels
- Meet patient/family care expectations
- Prevent recurrent exacerbations and urgent care needs
- No to minimal medication adverse effects

Table 1: Assessing Asthma Control & Adjusting Therapy

	Components of Control	Well Controlled (all of the following)	Not Well Controlled (Any measure present in any week)	Very Poorly Controlled
Impairment	Daytime symptoms	≤ 2 days/week	> 2 days/week	Throughout day
	Nighttime awakenings	< 2x/month	1-3 x/week	> 4x/week
	Interference with normal activity	None	Any	
	Need for reliever/rescue treatment (not EIB* prevention	< 2 days/week	> 2 days/week	Several times/day
	Lung function (PEF or FEV1)	>80% personal best	60-80% predicted/personal best	< 60% predicted/personal best
	Exacerbations	None	One or more/year*	One in any week
	ACT	> 20	16-19	<15
Risk	Exacerbations requiring oral steroids	0-1 year	> 2/year	
	Progressive loss of lung function	Evaluation	requires long-term	Follow up care
	Treatment-related adverse effects	Monitor & adjust		
Recommended	**Action (see steps)**	Maintain current step. Follow-up 1-6 months. Consider step down if well controlled for at least 3 months.	Step up 1 step. Reevaluate in 2-6 weeks. For side effects, consider alternate options.	Consider short course oral steroid. Step up 1-2 steps. Reevaluate in 2 weeks. For side effects, consider alternative treatment options

* EIB = Exercise induced bronchospasm. Preferred treatment is 2 puffs short-acting $beta_2$-agonist 15-30 minutes prior to activity. If not controlled, treat as persistent asthma at lowest possible step to achieve control.

Table i: PHQ-4
A 4-item **screening** for anxiety and depression. Scores ranges from a score of 0 to 12, (i.e., the higher the score, the more likely there is an underlying depressive or anxiety disorder) . A higher score means further evaluation is needed.

References:

Pocket Guide for Asthma Management and Prevention: A pocket guide for physicians and Nurses Updated 2008 form the Global Initiative for Asthma

National Asthma Education And Prevention Program. Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma 2007. (NIH Publication No. 07-4051). 2007. National Heart, Lung, and Blood Institute.

ACT: American Lung Association

Treating Tobacco Use and Dependence, U.S. Department of Health and Human Services, 2000