Outpatient Asthma Management Greater Than 12 Years of Age

Make the Diagnosis
- Consider the diagnosis of asthma if symptoms include recurrent coughing, wheezing or shortness of breath relieved by a bronchodilator.
- **Spirometry > 12% increase of FEV1 post-bronchodilator**
- Consider co-morbidities or alternate diagnosis, especially if poor control: GERD, aspiration, airway anomaly, foreign body, cystic fibrosis, anxiety, vocal cord dysfunction, tobacco/secondhand smoke exposure, or COPD. GERD is a common co-morbidity.
- If diagnosis is in doubt, consult with asthma specialist

Key points of Assessment and Treatment
- Asthma is a variable disease and needs to be assessed at **every visit**
- Use the Assess Asthma Control box to guide your assessment and make treatment decisions
- The goal of asthma therapy is to keep the patient in control as much as possible with the least amount of medication
- If at the first visit the patient is not well-controlled (see below), begin controller therapy. A patient should be diagnosed with persistent asthma if he/she needs a daily controller medication to stay in control.

Exercise-Induced Bronchospasm (EIB)

- If symptoms resolve without treatment after 5 minutes of rest, it is more likely poor conditioning.

- If EIB is unresponsive to albuterol and the patient has allergies, consider starting an inhaled steroid (see Stepwise Treatment Table)

- If still unresponsive after starting inhaled steroid, refer to specialist

Assess Asthma Control			
Criterion	**Well-Controlled**	**Not Well-Controlled**	**Very Poorly Controlled**
Asthma Control Test (ACT)	Score of ≥ 20	Score of 16 - 19	Score of ≤ 15
OR Assess all of the Below: (Determination of level of control is dictated by the most severe criterion of impairment)			
1. Daytime Symptoms	≤ 2 days/week	> 2 days/week	Throughout the day
2. Nighttime Awakenings	≤ 2 times/month	1-3 times/week	≥4 times/night
3. Limitation of Activities	None	Some limitation	Extremely limited
4. Short-Acting beta2-agonist use for symptom control *(not prevention of EIB)*	≤ 2 days/week	> 2 days/week	Several times per day
5. Courses of prednisone in last year	<2	≥2	≥2
FEV_1% predicted	>80% predicted or personal best	60-80% predicted or personal best	<60% predicted or personal best

Other things to consider at every visit:

1.Check adherence to medication routine.
2.Provide Asthma Action Plan, educate on use of MDI and spacers and check technique.
3.Environmental controls, pets, smoke, perfume, allergies, respiratory infections
4.Treat comorbidities.

If Well Controlled:
Follow the **Stepwise Approach Guideline** (see page 2). Consider step down if well-controlled for 3 consecutive months.
Re-assess every 1-6 months.

If Not Well Controlled:
Follow the **Stepwise Approach Guideline.** If initial visit, start at Step 2. Step up until well-controlled.
Re-assess in 2-6 weeks.
For side effects, consider alternative treatment.

If Very Poorly Controlled:
Consider short course of oral prednisone for 3 to 10 days (1-2 mg/kg, daily max 60mg). If initial visit, start at Step 2. Step up 1-2 steps using **Stepwise Approach Guideline.**
Re-assess in 2 weeks.

Recommended: Consider consultation with a Pulmonologist at step 3. Consult with Pulmonologist if step 4 or higher is required OR If not well-controlled within 3-6 months using Stepwise Approach OR if 2 or more ED visits/hospitalizations for asthma in a year

Reviewers:

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Intermittent Asthma	Persistent Asthma: Daily Medications				
	Step up as indicated, although address possible poor adherence to medication. Re-assess in 2 – 6 weeks → **Step down if well controlled, re-assess in 3 months. If remain well-controlled, re-assess every 1-6 months** ←				
Step 1 **Short-acting beta-agonist** e.g., albuterol PRN If used more than 2 days/week (other than for exercise), consider inadequate control and the need to step up therapy **Alternative:** **PRN concomitant low dose ICS and SABA**	**Step 2** **Preferred:** **Daily low-dose ICS and PRN SABA:** **Flovent HFA** Fluticasone (44 mcg) 2 puffs BID **Flovent Diskus** Fluticasone DPI (50-100 mcg) 1 inh BID **Qvar Redihaler** Beclomethasone (40 mcg) 2 puffs BID **Arnuity Elipta** Fluticasone DPI (50 mcg) 1 inh Daily **Asmanex HFA** Mometasone (50 mcg) 2 puffs BID **Asmanex Twisthaler** Mometasone (110mcg) 1 inh daily to BID **Pulmicort Flexhaler** Budesonide DPI (90 mcg) 1 inh BID **ArmonAir Respiclick** Fluticasone (55mcg) 1 inh BID **Alvesco HFA** Ciclesonide (80 mcg) 1-2 puffs BID **Pulmicort Respule** Budesonide Suspension (0.5 mcg) BID	**Step 3** **Preferred:** **Daily and PRN combination low dose ICS-Formoterol: (SMART therapy) *** **Dulera** Mometasone/formoterol (50/5 mcg) 2 puffs BID **Or** **Daily medium dose ICS and PRN SABA** **Flovent HFA** Fluticasone (110mcg) 2 puffs BID **Flovent Diskus** Fluticasone DPI (100 mcg) 1 inh BID **Qvar Redihaler** Beclomethasone (80 mcg) 2 puffs BID **Arnuity Elipta** Fluticasone DPI (100 mcg) 1 inh Daily **Asmanex HFA** Mometasone (100 mcg) 2 puffs BID **Asmanex Twisthaler** Mometasone (110mcg) 2 inh daily **Pulmicort Flexhaler** Budesonide DPI (180 mcg) 1 inh BID **ArmonAir Respiclick** Fluticasone (113 mcg) 1 inh BID **Alvesco HFA** Ciclesonide (160 mcg) 1-2 puffs BID	**Step 4** **Preferred:** **Daily and PRN combination medium dose ICS-Formoterol: (SMART therapy) *** **Symbicort** Budesonide/Formoterol (80/4.5) 2 puffs BID **Dulera** Mometasone/formoterol (100/5 mcg) 2 puffs BID Or **Daily medium dose ICS plus LABA and PRN SABA** **Dulera** Mometasone/formoterol (100/5 mcg) 2 puffs BID **Symbicort** Budesonide/Formoterol (80/4.5) 2 puffs BID **Advair HFA** Fluticasone/Salmeterol (115/21 mcg) 2 puffs BID **Advair Diskus** Fluticasone/Salmeterol (250/50 mcg) 1 inh BID **Wixela Inhub** Fluticasone/Salmeterol (250/50 mcg) 1 inh BID **AirDuo Respiclick** Fluticasone/Salmeterol (113/14mcg) 1 inh BID **Breo Elipta** Fluticasone/Vilanterol (100/25 mcg) 1 inh Daily **(NOTE: FOR USE IN 18 YEARS AND OLDER)** **Alternative:** **High dose ICS and PRN SABA**	**Step 5** **Preferred:** **Daily high dose ICS plus LABA and PRN SABA** **Symbicort** Budesonide/Formoterol (160/4.5 mcg) 2 puffs BID **Dulera** Mometasone/formoterol (200/5mcg) 2 puffs BID **Advair HFA** Fluticasone/Salmeterol (230/21 mcg) 2 puffs BID **Advair Diskus** Fluticasone/Salmeterol (500/50mcg) 1 inh BID **Wixela Inhub** Fluticasone/Salmeterol (500/50mcg) 1 inh BID **AirDuo Respiclick** Fluticasone/Salmeterol (232/14 mcg) 1 inh BID **Breo Elipta** Fluticasone/Vilanterol (200/25 mcg) 1 inh Daily **(NOTE: For use in 18 years and older))** **Consider adding:** **Spiriva Respimat** Tiotropium (1.25mcg) 2 inh QD And/or **Cromolyn** Generic neb solution (20 mg) 1 ampule QID	**Step 6** **Preferred:** **Daily high dose ICS plus LABA plus additional medications and PRN SABA:** **Symbicort** Budesonide/Formoterol (160/4.5 mcg) 2 puffs BID **Dulera** Mometasone/formoterol (200/5 mcg) 2 puffs BID **Advair HFA** Fluticasone/Salmeterol (230/21mcg) 2 puffs BID **Advair Diskus** Fluticasone/Salmeterol (500/50 mcg) 1 inh BID **Wixela Inhub** Fluticasone/Salmeterol (500/50mcg) 1 inh BID **AirDuo Respiclick** Fluticasone/Salmeterol (232/14 mcg) 1 inh BID **Breo Elipta** Fluticasone/Vilanterol (200/25 mcg) 1 inh Daily **(NOTE: FOR USE IN 18 YEARS AND OLDER)** **Plus:** **Spiriva Respimat** Tiotropium (1.25mcg) 2 inh QD And/or **Cromolyn** Generic neb solution (20 mg) 1 ampule QID And/or **Prednisone Oral** 0.5 mg/kg every other day

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	Step 2 **Preferred:** **Daily low-dose ICS and PRN SABA:**	Step 3 **Preferred:** **Daily and PRN combination low dose ICS-Formoterol: (SMART therapy) ***	Step 4 **Preferred:** **Daily and PRN combination medium dose ICS-Formoterol: (SMART therapy) ***	Step 5 **Preferred:** **Daily high dose ICS plus LABA and PRN SABA**	Step 6 **Preferred:** **Daily high dose ICS plus LABA plus additional medications and PRN SABA:**
	Alternative: **Cromolyn** Generic neb solution (20 mg) 1 ampule QID **And PRN SABA**	**Pulmicort Respule** Budesonide Suspension (0.5 mcg) 1 Respule BID (1 mg) 1 Respule daily **Alternative:** **Low dose ICS plus LABA and PRN SABA:** **Symbicort** Budesonide/Formoterol (80/4.5) 1-2 puffs BID **Advair HFA** Fluticasone/Salmeterol (45/21 mcg) 2 puffs BID **Advair Diskus** Fluticasone/Salmeterol (100/50 mcg) 1 inh BID **Dulera** Mometasone/formoterol (50/5 mcg) 2 puffs BID **Wixela Inhub** Fluticasone/Salmeterol (100/50 mcg) 1 inh BID **AirDuo Respiclick** Fluticasone/Salmeterol (55/14mcg) 1 inh BID Or **Daily low dose ICS plus LAMA and PRN SABA**	**Flovent HFA** Fluticasone (220 mcg) 2 puffs BID **Flovent Diskus** Fluticasone DPI (250 mcg) 1 inh BID **Arnuity Elipta** Fluticasone (200 mcg) 1 inh QD **Asmanex HFA** Mometasone (200 mcg) 2 puffs BID **Asmanex Twisthaler** Mometasone (220 mcg) 1-2 inh BID **ArmonAir Respiclick** Fluticasone (232 mcg) 1 inh BID **Alvesco HFA** Ciclesonide (160 mcg) 2 puffs BID Or **Daily medium dose ICS plus LAMA and PRN SABA**		**Consider adding:** **Xolair** Omalizumab Or **Nucala** Mepolizumab Or **Dupixant** Dupilumab Or **Fasenra** Benralizumab Or **Cinqair** Reslizumab
Consider Pediatric Pulmonary consultation at Step 3					
Schedule Follow-up Care: Frequency of follow-up visits based on severity: Steps 1 -2: 2 times per year, Steps 3-4: Every 3 months, Steps 5-6: Every 1-2 months					

***SMART Therapy** (Single Maintenance and Rescue Therapy, ICS with Formoterol only) 1-2 puffs as needed up to a maximum daily 12 puffs (54mcg) for maintenance and rescue
Note: In steps 3 and 4 if patient is well controlled, maintain current therapy**.**

References:

2021 GINA Main Report - Global Initiative for Asthma - GINA (ginasthma.org)
Guidelines for the Diagnosis and Management of Asthma 2007 (EPR-3) | NHLBI, NIH

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