



TIPS FOR COMPLETING AN ASTHMA ACTION PLAN (rev. February 2024)

Specific instructions for electronic template:

The electronic template allows you to complete the asthma action plan, using the pull-down selections and clicking appropriate boxes. If you wish to select a medication/dose/instruction that is not listed on the pull-down menu, type in your selection.

AAP MUST be opened in Adobe in order for it to work appropriately.

Medications are grouped in classes and within that class alphabetically unless there is a generic that will be listed just above the brand name. You may type the first letter of a medication to find it quicker or just scroll through the drop-down menus. Also, dosing for medications will show the most appropriate choices for dosing.

NOTE: Adobe required to save an electronic copy; otherwise, you must print copies of the form for the family (home and school) and for your records.

General recommendations:

- If typing instructions on blank selection in columns instead of selecting an option, use PLAIN language (e.g. "Four times a day")
- PCP should sign the AAP (on paper or electronically)
 - Please give **TWO** copies to family: home and school
 - Keep another copy for medical record
- The provider must click whether the patient is allowed to self-administer inhaler before the provider can sign the form (hard stop).

The Physician/Provider should complete medications prescribed for each zone:

Green Zone Instructions

- Choose prevention (long-term control) medicine based on severity/control and whether it is to be given at home, school, or both (usually, long-term control medicines are given only at home.)
 - Inhaled corticosteroids are the BEST prevention medicine!
- Mark "not applicable" box if patient does not need prevention medicine.
- **Pre-Exercise:**
 - 20 minutes before exercise use this medicine **as needed**
 - The "as needed" option is so that the medication administrator (e.g. school nurse) is not REQUIRED to give quick-relief medication before each episode of exercise, but only if it is needed. For instance, there can be discretion to withhold repeated administration of beta agonist for non-strenuous activity/recess or if another dose was given recently to an asymptomatic child.
 - If needed more than once a day, contact your doctor
 - If patients require albuterol or levalbuterol (Xopenex™) multiple times per day, asthma may not be well-controlled; may need to step up controller medication.
 - Pre-Exercise: GINA 2020 guidelines allow for the option of combined inhaled corticosteroid/formoterol pre-exercise for patients who are already on SMART/MARTherapy

Yellow Zone Instructions

- Usual pediatric dose: Albuterol or levalbuterol (Xopenex™) 2 puffs by M.D.I. with spacer
 - If patient is already taking inhaled corticosteroids (ICS), consider increasing their ICS dose in yellow zone and administer along with the quick relief-medication (albuterol or levalbuterol).
- Inhaled corticosteroid use in yellow zone:
 - The “AND” option is added to the second row for steroid selections
- **SMART/MARTherapy (SMART)** may be used for quick-relief in yellow zone for patients who are already taking SMART as their controller medication:
 - For quick-relief medicine (yellow zone), there is a choice of medication and dosing for patients on SMART.
 - Some patients may use Albuterol or levalbuterol (Xopenex™) at school and SMART therapy at home.
 - Patients who use SMART for quick relief at school and home will require **two inhalers** of the same medication.
- Options for the medication to be given at school and/or home are automatically selected/checked since the medication options in yellow zone should be allowed for both home and school.
- Contact healthcare provider if remain in yellow zone for >12-24 hr
- Added instruction: If you DO NOT feel much better 20-60 minutes after taking YELLOW ZONE medications, FOLLOW RED ZONE
 - This statement added as a caution for children who receive therapy in the yellow zone and are not feeling better at all: they may require escalation and should seek medical care sooner.

Red Zone Instructions

- Usual emergency dose: Albuterol or levalbuterol (Xopenex™): 2-4 puffs by M.D.I.
OR
Albuterol 1.25- 2.5 mg nebulized or
Levalbuterol (Xopenex™) 0.63-1.25 mg nebulized
- May choose to repeat dose at 20 min intervals, up to maximum of 3 doses.
- Patient/Caretaker must call doctor or EMS or go to ER/Urgent Care

Air Quality Alert Days:

- The national recommendation is to avoid outdoor exercise when levels of air pollution are high. San Antonio has 5-20 Air Quality Alert Days/yr. Most occur in summer and early fall.
- For Air quality reference for your patients you can direct them to resources such as:
<https://www.airnow.gov/> EPA AirNow App or <https://www.iqair.com/us/usa/texas/san-antonio> or IQAir AirVisual App

Physician recommendations for medication self-administration:

- Choose most appropriate option for your patient. Children in elementary school are usually NOT capable of self-administering medication. If you grant permission for self-carry/ self-administration, most schools request that families leave an extra inhaler with the school nurse in case the student misplaces his/her inhaler.

OTHER MANAGEMENT TIPS:

1. Notes about specific medications

- **Always use spacer** with inhaled medications (only exceptions are dry powder inhalers and nebulized medications)

- **Be careful** when prescribing certain medicines containing long-acting beta agonists (e.g., salmeterol). For example, the correct inhaled dose from Advair Diskus™ (fluticasone/salmeterol dry powder inhaler) is ALWAYS **1 inhalation** twice a day. Higher dose will result in too much salmeterol. Salmeterol is not used for SMART.

2. If patient is well-controlled for at least three months:

- “Step-down” therapy (decrease inhaled steroids by 25% per month) or see Step down dose on NHLBI guidelines.
- Reassess 4-6 weeks after change in therapy (sooner if poorly controlled); otherwise reassess: Q 3 mos. if persistent; Q 6-12 mos. if intermittent asthma
- Order PFTs at least every 2 years.

3. If asthma control is poor:

- **First Assess: I-Inhaler technique; C- Compliance; E- Environment**

“Step-up” therapy and re-assess in 2-6 weeks

KEY EDUCATIONAL MESSAGES FOR PATIENTS (SAFE-MEDS)

- Skills (use of inhalers/spacers/peak flow meters; symptom recognition)
- Action: When and How to Take Action
- Facts About Asthma (pathophysiology)
- Environmental Control Measures
- MEDS: role of medications (prevention vs. quick-relief medications)

4. Acute exacerbations recommendations (outpatient management, **Yellow Zone**):

- Consider scheduled short-acting beta2 agonist for exacerbation every 4-6 hours **with the caveats below**.
- **For 0–4-year-olds with recurrent wheezing but not on a daily ICS** (Inhaled corticosteroid), add short course of daily ICS at start of respiratory infections for 7-10 days. E.g.: budesonide 1 mg inhaled twice a day for 7-10 days.
- **SMART:** For patients **5 years and older who are on ICS-formoterol (step 3 and above)**, add PRN ICS-formoterol rather than SABA alone. E.g.: 2 puffs Symbicort or Dulera as often as every 1-2 hours until symptoms improve. *
 - ***Maximum total daily dose** of combination ICS-formoterol (maintenance + PRN doses): **8 puffs/day (4–11 year-olds) OR 12 puffs/day (12 yrs and above)**.
 - The family should stay in contact with doctor’s office.
 - Anyone reaching their maximum dose should go in to be seen by physician.
- For **mild persistent asthma ages 12 and up** who are already on low dose ICS, you can add prn SABA in yellow zone or match puff for puff ICS after SABA. E.g.: 2 puffs Q6 hours albuterol + 2 puffs of Flovent™ every 6 hours after albuterol puffs for as long as the patient needs to use albuterol every 6 hours.
 - The patient needs to call the clinician by day 2 or when they enter the RED ZONE
- Consider short burst oral corticosteroids (3-5 days).

QUESTIONS ABOUT THIS PLAN? Contact:

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ASTHMA CARE TABLES

Primary Care Approach: Asthma severity and preferred treatment: 0–4 years ^a					
		Intermittent	Persistent		
			Mild	Moderate	Severe
IMPAIRMENT	Day Symptoms/ SABA use	≤ 2 days/wk	3–6 days/wk	Daily	Throughout the day
	Night Awakenings	0	1–2 nights/mo	3–4 nights/mo	>1 night/wk
	Activity limitation	None	Minor limitation	Some limitation	Extremely limited
RISK	Exacerbations	0–1/yr	≥ 2 exacerb/6 mos OR Wheezing ≥4 times/yr lasting >1 day AND Risk ^b	More frequent/intense	More frequent/intense
		Step 1	Step 2	Step 3 ^c	Step 4 or higher ^c
Preferred treatment		PRN SABA And At start of RTI: add short course daily ICS	Daily low-dose ICS and PRN SABA	Daily medium-dose ICS and PRN SABA	Daily medium-dose ICS-LABA and PRN SABA

Note: Assess severity to initiate treatment: level of severity is based on the most severe component of impairment or risk.

Abbreviations: ICS, inhaled corticosteroids; LABA, long-acting beta agonist; RTI, respiratory tract infection; SABA, short-acting beta agonist
Exacerbation: episode requiring OCS (oral corticosteroids)

^a For age 4 yrs only requiring Step 3 or Step 4: see Table for 5 yrs–adult

^b Risk: Parent history of asthma or patient has eczema or sensitized to aeroallergens or 2 of the following: sensitized to foods; eosinophilia; wheezing apart from colds.

^c Consult asthma specialist; see 2020 Focused Update for Step 5 & Step 6 and for additional alternatives

All steps: Patient education; consider environmental control

Based on: NAEPP EPR3: Asthma Care Quick Reference, Sept 2012 and 2020 Focused Update to the Asthma Management Guidelines.

ASTHMA CARE TABLES

Primary Care Approach: Asthma severity and preferred treatment: 5 years–Adult ^a					
		Intermittent	Persistent		
			Mild	Moderate	Severe
IMPAIRMENT	Day Symptoms/ SABA use	≤ 2 days/wk	3–6 days/wk	Daily	Throughout the day
	Night Awakenings	≤ 2 nights/mo	3–4 nights/mo	2–6 nights/wk	Often 7 night/wk
	Activity limitation	None	Minor limitation	Some limitation	Extremely limited
	Lung function: FEV1	>80%	>80%	60–80%	<60%
RISK	Exacerbations	0–1/yr	≥ 2/yr	More frequent/intense	More frequent/intense
		Step 1	Step 2	Step 3	Step 4 ^b
Preferred treatment		PRN SABA	Daily low-dose ICS and PRN SABA OR (≥12yr) PRN concomitant ICS and SABA	Daily and PRN combination low-dose ICS-formoterol ^c	Daily and PRN combination medium- dose ICS-formoterol ^c
Alternative				Daily medium-dose ICS and PRN SABA OR Daily low-dose ICS-LABA and PRN SABA	Daily medium-dose ICS-LABA and PRN SABA

Note: Assess severity to initiate treatment: level of severity is based on the most severe component of impairment or risk.

Abbrev: FEV1, forced expiratory volume in 1 sec; ICS, inhaled corticosteroid; LABA, long-acting beta agonist; SABA, short-acting beta agonist

Exacerbation: episode requiring OCS

^a For age 4 years (Step 3 and Step 4): see this table.

^b Consult asthma specialist at Step 4; see 2020 Focused Update for Step 5 & Step 6 and additional alternatives

^c Step 3 & Step 4: maximum total daily dose of combination ICS-formoterol (maintenance + PRN doses):
8 puffs/day (4–11 yr) 12 puffs/day (12 yr and above)

All steps: Patient education; consider environmental control; consider immunotherapy (Steps 2–4)

Based on: 2020 Focused Update to the Asthma Management Guidelines and NAEPP: Asthma Care Quick Reference, Sept 2012.

Primary Care Approach: Initial Therapy Based on Severity Level				
	Intermittent	Persistent		
		Mild	Moderate	Severe
Age	Step 1	Step 2	Step 3 ^{a,b}	Step 4 ^{a,b}
0–4 yr ^a	PRN SABA and At start of RTI: add short course daily ICS	Daily low-dose ICS and PRN SABA	Daily medium-dose ICS and PRN SABA	Daily medium-dose ICS-LABA and PRN SABA
5 yr–adult Preferred	PRN SABA	Daily low-dose ICS and PRN SABA OR (≥ 12yr) PRN concomitant ICS and SABA	Daily and PRN combination low-dose ICS-formoterol ^c	Daily and PRN combination medium-dose ICS-formoterol ^c
5 yr–adult Alternative			Daily medium-dose ICS and PRN SABA OR Daily low-dose ICS-LABA and PRN SABA	Daily medium-dose ICS-LABA and PRN SABA
<p>Abbreviations: ICS, inhaled corticosteroids; LABA, long-acting beta agonist; RTI, respiratory tract infection; SABA, short-acting beta agonist</p> <p>^a For children 4 yrs old only who require Step 3 or Step 4: see therapy for 5 yr–adult (Step 3 & Step 4)</p> <p>^b Step 3 (0–4 yr) & Step 4 (5 yr–adult): Consult asthma specialist; see 2020 Update for Steps 5 & 6 & additional alternatives</p> <p>^c Step 3 & Step 4: maximum total daily dose of combination ICS-formoterol (maintenance + PRN doses): 8 puffs/day (4–11 yr) 12 puffs/day (12 yr and above)</p> <p>All steps: Patient education; consider environmental control; consider immunotherapy (Steps 2–4; ≥5 yr)</p> <p>Based on: 2020 Focused updates to the Asthma Management Guidelines.</p>				

Asthma Control: Child 0–11 year [use PACCI to determine level of control]				
		Well-controlled	Not well controlled	Very poor control
IMPAIRMENT	Day Sx/ SABA use	≤ 2 days/wk	> 2 days/wk	Throughout the day
	Night Sx	0–1 nights/mo	≥ 2 nights/mo	≥ 2 nights/wk
	Activity	No limitation	Some limitation	Extremely limited
	Lung function: FEV1 (> 4 yr)	> 80%	60–80%	< 60%
RISK	Exacerbation	0–1/yr	2–3 exacerbation/yr (0–4 yr) ≥ 2/yr (5–11 yr)	> 3 exacerbation/yr (0–4 yr) ≥ 2/yr (5–11 yr)
	Action	Maintain; Consider step down (if well-controlled for 3 mo) Recheck: 1–6 mos (sooner if change meds)	Review: ICE Step up Recheck: 2–6 wks	Review: ICE Step up: 1–2 steps Consider OCS Recheck: 2 wks
Abbreviations: Exacerbation (episode requiring OCS); OCS, oral corticosteroids; SABA, short-acting beta agonists Review ICE: inhaler technique; compliance; environmental control & co-morbidities Based on: NAEPP EPR3: Asthma Care Quick Reference, Sept. 2012.				

Asthma Control: Child 12 year-Adult [use PACCI to determine level of control]				
		Well-controlled	Not well controlled	Very poor control
IMPAIRMENT	Day Sx/ SABA use	≤ 2 days/wk	> 2 days/wk	Throughout the day
	Night Sx	0–2 nights/mo	1-3 nights/wk	≥ 4 nights/wk
	Activity	No limitation	Some limitation	Extremely limited
	Lung function: FEV1	> 80%	60–80%	<60%
RISK	Exacerbation	0–1/yr	≥ 2/yr	≥ 2/yr
	Action	Maintain; Consider step down (if well-controlled for 3 mo) Recheck: 1–6 mos (sooner if change meds)	Review: ICE Step up Recheck: 2–6 wks	Review: ICE Step up: 1–2 steps Consider OCS Recheck: 2 wks
Abbreviations: Exacerbation (episode requiring OCS); OCS, oral corticosteroids; SABA, short-acting beta agonists Review ICE: inhaler technique; compliance; environmental control & co-morbidities Based on: NAEPP EPR3: Asthma Care Quick Reference, Sept. 2012.				

Estimated Comparative Daily Dosages: Inhaled Corticosteroids

	0–4 yr		5–11 yr		12 yr–adult	
Daily Dose	Low	Med	Low	Med	Low	Med
Beclomethasone MDI (QVAR Redihaler®) 40 or 80 mcg/inh (120 inh/device)	NA	NA	1–2 inh BID (40 mcg)	2 inh BID (80 mcg)	1 inh AM/2 inh PM (80 mcg)	2–3 inh BID (80 mcg)
Budesonide DPI (Pulmicort Flexhaler®) 90 or 180 mcg/inh (60 or 120 inhalations/device)	NA	NA	1–2 inh BID (90 mcg)	2 inh BID (180 mcg)	1 inh AM/2 inh PM (180 mcg)	2–3 inh BID (180 mcg)
Budesonide neb (Budesonide inhalation suspension Generic) (Pulmicort Respules®) 0.25 mg; 0.5 mg; 1 mg/respule (30 respules/carton)	1–2 neb/day (0.25 mg)	2 neb/day (0.5 mg)	1 neb/day (0.5 mg)	1 neb BID (0.5 mg)	NA	NA
Ciclesonide MDI (Alvesco®) 80 or 160 mcg/puff (60 puffs/inhaler)	NA	NA	1 puff daily or BID (80 mcg)	1 puff BID (160 mcg)	1–2 puff BID (80 mcg)	2 puff BID (160 mcg)

Abbreviations: DPI, dry power inhaler; inh, inhalation; MDI, metered dose inhaler; NA, not applicable; neb, nebulizer treatment
Based on: NAEPP EPR3: Asthma Care Quick Reference, Sept. 2012.

Estimated Comparative Daily Dosages: Inhaled Corticosteroids (cont.)

	0–4 yr		5–11 yr		12yr–adult	
Daily Dose	Low	Med	Low	Med	Low	Med
Fluticasone MDI (Flovent HFA®) 44, 110, or 220 mcg/puff (120 puffs/ inhaler)	2 puff BID (44 mcg)	1 puff BID (110 mcg)	1–2 puff BID (44 mcg)	1 puff BID (110 mcg)	1–3 puff BID (44 mcg)	2 puff BID (110 mcg)
Mometasone DPI (Asmanex Twisthaler®) 110 mcg/inhalation (30 inh/device) 220 mcg/inhalation (30, 60 or 120 inh/device)	NA	NA	1 inh daily (110 mcg)	1–2 inh daily (220 mcg)	1–2 inh daily (110 mcg)	1 inh BID (220 mcg)
Mometasone MDI (Asmanex HFA®) 50, 100, or 200 mcg/puff (120 puffs/device)	NA	NA	1 puff daily (100 mcg)	1–2 puff/day (200 mcg)	1–2 puff/day (100 mcg)	1 puff BID (200 mcg)

Abbreviations: DPI, dry power inhaler; inh, inhalation; MDI, metered dose inhaler; NA, not applicable; neb, nebulizer treatment

Based on: NAEPP EPR3: Asthma Care Quick Reference, Sept. 2012.

Combination ICS-formoterol as single inhaler maintenance and reliever therapy (“SMART” therapy) ^a

	0–4 year		5–11 year		12 yr–adult	
Daily Dose	Low dose	Med dose	Low dose	Med dose	Low dose	Med dose
Budesonide/Formoterol MDI (Symbicort [®]) 80 mcg/4.5 mcg 160 mcg/4.5mcg (120 puffs/inhaler)	NA	NA	1 puff daily (80 mcg/4.5 mcg)	1 puff BID (80 mcg/4.5 mcg)	1 puff BID (80 mcg/4.5 mcg)	1 puff BID (160 mcg/4.5 mcg)
Mometasone/Formoterol MDI (Dulera [®]) 100 mcg/5mcg 200 mcg/5mcg (120 puffs/inhaler)	NA	NA	1 puff daily (100 mcg/5 mcg)	1 puff BID (100 mcg/5 mcg)	1 puff BID (100 mcg/5 mcg)	1 puff BID (200 mcg/5 mcg)

^a Note: Quick relief medication: (preferred option) ICS-formoterol 1–2 puffs as needed up to maximum **total** daily dose
(maintenance + PRN doses) of:
8 puffs/day (4–11 yr)
12 puffs/day (12 yr and above)

Abbreviations: ICS, inhaled corticosteroids; MDI, metered dose inhaler; NA, not applicable

Based on: 2020 Focused Updates to the Asthma Management Guidelines: At-A-Glance Guide.

Primary Care Approach: Asthma Medications: Used for Quick-relief and for Exacerbations

Medicine		Dose			
Name	How supplied	0-4 year	5-11 year	12 year-adult	Comments
Albuterol MDI with spacer	90 mcg/puff (200 puffs/MDI)	1–2 puffs 5 mins prior to exercise 2 puffs Q 4–6 hr prn	2 puffs 5 min prior to exercise 2 puffs Q 4–6 hr prn	2 puffs 5 min prior to exercise 2 puffs Q 4–6 hr prn	(See RAMP protocol for treatment in clinic/ED/inpatient)
Albuterol (nebulized)	2.5 mg/3 mL saline 1.25 mg/3 mL saline 5 mg/mL (0.5%) (20 mL dropper bottle)	0.63–2.5 mg in 3 mL saline Q 4–6 hr as needed	1.25–2.5 mg in 3 mL saline Q 4–8 hr as needed	1.25–5 mg in 3 mL saline Q 4–8 hr as needed	Usual max dose for home use: 2.5 mg. Note: 2.5 mg neb approx. equivalent to 4 puffs by MDI. (See RAMP protocol for treatment in clinic/ED/inpatient)
Ipratropium (Atrovent®) nebulized		0.25–0.5 mg Q 20 min for 3 doses	0.25–0.5 mg Q 20 min for 3 doses	0.5 mg Q 20 min for 3 doses	Give with albuterol for mod-severe exacerbations in ED
Prednisone Prednisolone	Prednisone: 5, 10, 20, 50 mg tab 5 mg/5 mL 5mg/1 mL “Intensol” Prednisolone: 5 mg tab 5 mg/5 mL 15 mg/5 mL	1–2 mg/kg/day for 3–10 days (max: 60 mg/day)	1–2 mg/kg/day for 3–10 days (max: 60 mg/day)	40–60 mg/day (in 1 or 2 divided doses) for 3–10 days	“short burst”: 3–10 days Give as single or divided doses.
Dexamethasone ^a	1, 2, 4, 6 mg tablet 0.5 mg/5 mL 1mg/1mL: “Intensol”	0.3–0.6 mg/kg Single dose (max: 12 mg) [age 2 yr and above]	0.3–0.6 mg/kg Single dose (max: 12 mg)	0.3–0.6 mg/kg Single dose (max: 12 mg)	May repeat dose on day #2

Abbreviation: MDI, metered dose inhaler

^a Not recommended for < 2 yr (for asthma), as most studies done in children ≥ 2 yrs age

Based on: NAEPP EPR3, Guidelines for the Diagnosis and Management of Asthma, 2008 (except Dexamethasone was not covered in EPR3)