DENVER HEALTH MEDICAL PLAN INC.™ DENVER HEALTH MEDICAID CHOICE

CLINICAL CARE GUIDELINE

Guideline Number: DHMP_DHMC_CG1007 **Effective Date:** 11/2021

Guideline Subject: Management of Asthma in Adults and Children **Revision Date:** 11/2022

Pages: 1 of 13

Gregg Kamas 10/13/2021

Quality Management Committee Chair **Date**

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. Determine that symptoms of recurrent airway obstruction are present based on history and exam.
    a. History of cough, recurrent wheezing, difficulty breathing, or chest tightness
    b. Symptoms occur or worsen at night, with exercise, viral infection, exposure to allergens and irritants, changes in weather, hard laughing or crying, stress, or other factors.
2. Use spirometry to determine that airway obstruction is at least partially reversible in all patients 8years of age.
3. Consider other causes of obstruction.

B. Goals of Therapy: Control of Asthma

1. Reduce Impairment: the frequency and intensity of symptoms and functional limitations experienced
    a. Prevent chronic and troublesome symptoms.
    b. Achieve infrequent use less than 2 days/wk of inhaled short-acting beta$_2$- agonist (SABA).
    c. Maintain (near) normal pulmonary function and activity levels.
2. Reduce Risk:
    a. Prevent exacerbations
    b. Minimize the need for emergency department visits or hospitalizations
    c. Prevent loss of lung function
    d. For children: prevent reduced lung growth
    e. Minimize adverse effects of therapy

NOTE:

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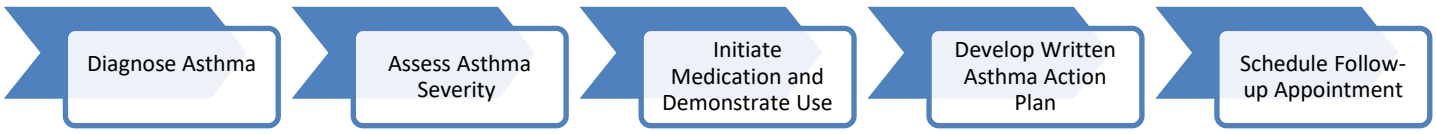
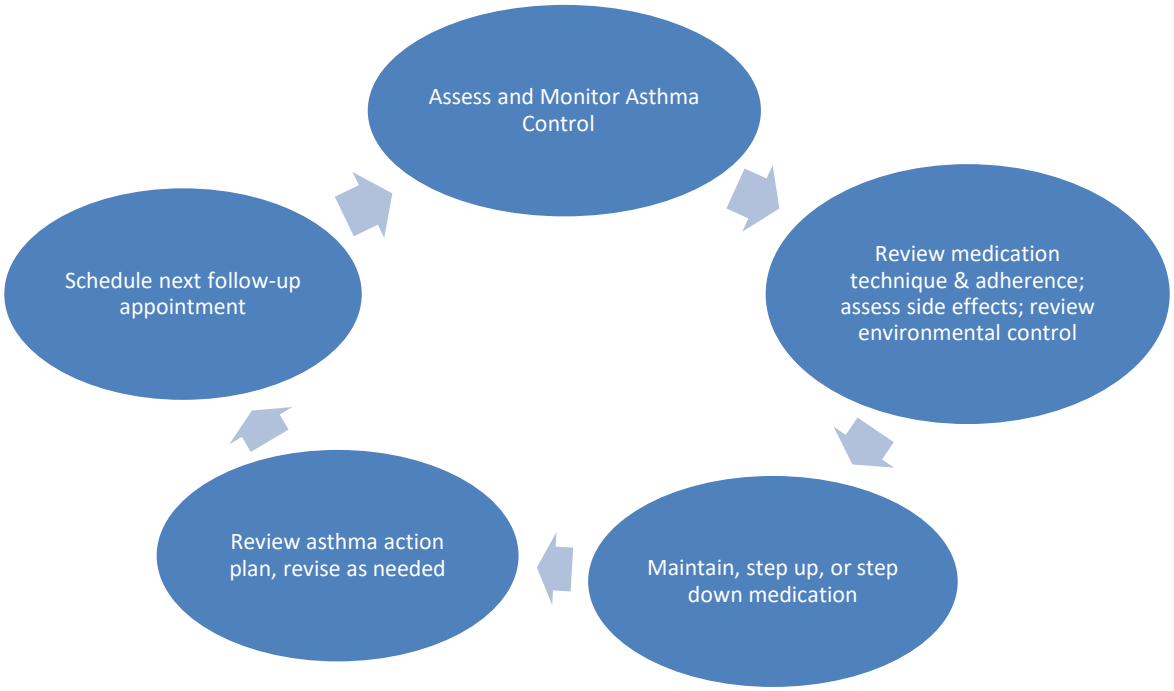
C. Care and Management:

Initial Visit:



Follow-up Visits:



D. Four Components of Care and Management:

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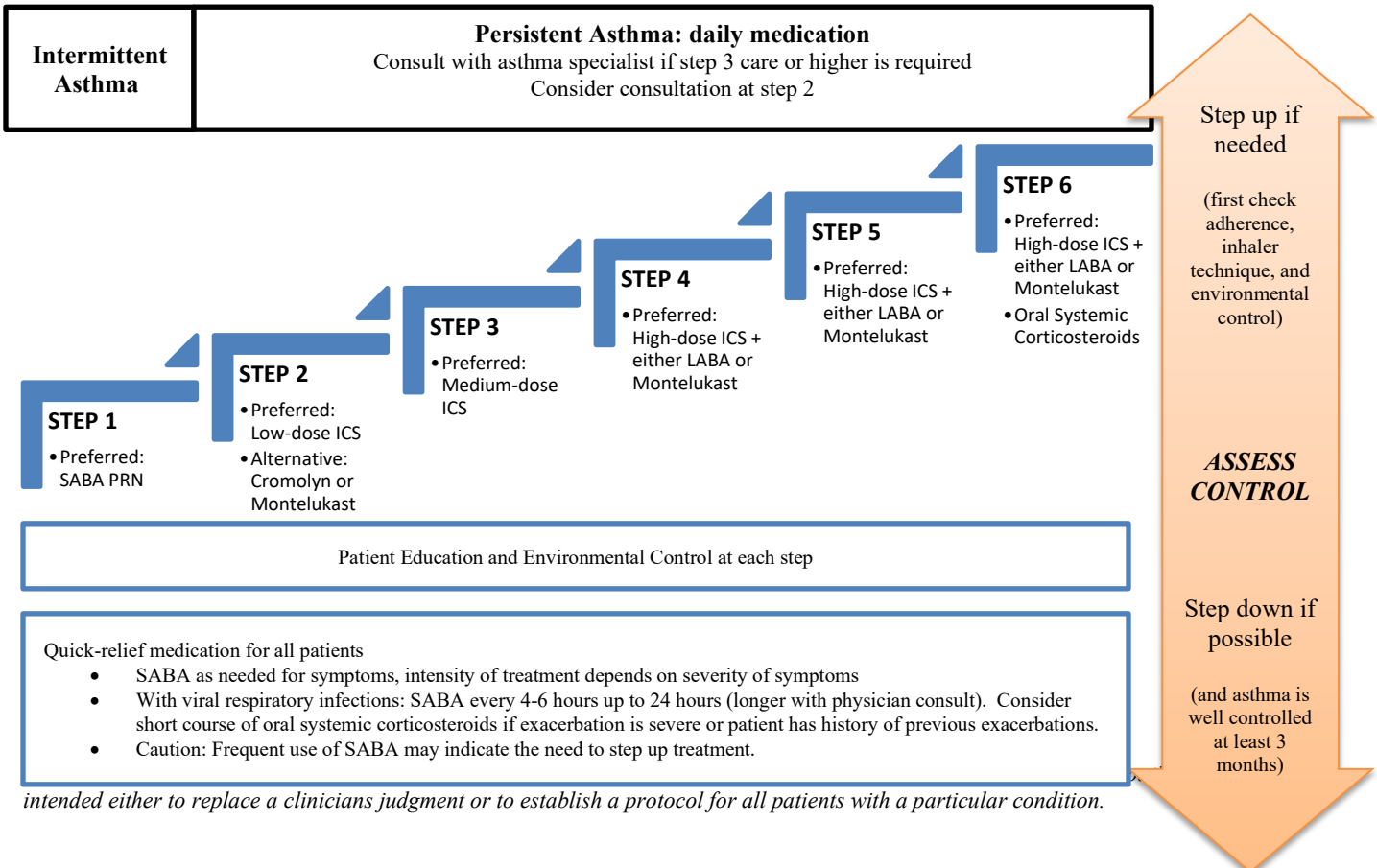
1. Assessment and monitoring:
    a. Assess asthma severity to initiate therapy.
    b. Assess asthma control to monitor and adjust therapy.
    c. Schedule follow-up care.
    d. Consider specialty consult/referral with asthma symptoms that are difficult to control or requires frequent hospitalization and/or ED visits.
2. Education for a partnership in asthma care:
    a. Provide self-management education.
    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.

STEPWISE APPROACH FOR MANAGING ASTHMA IN CHILDREN 0-4 YEARS OF AGE:



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NOTES:
- 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 beta$_2$-agonist
  LTRA: leukotriene receptor antagonist SABA: inhaled short-acting beta$_2$-agonist.
- If clear benefit is not observed within 4-6 weeks and patient/family medication technique and adherence are satisfactory, consider adjusting therapy or alternative diagnosis.

Classifying Asthma Severity and Initiating Treatment in Children 0-4 Years of Age

Assessing severity and initiating therapy in children who are not currently taking long-term control medication

Components of Severity		CLASSIFICATION OF ASTHMA SEVERITY: CHILDREN 0-4 YEARS			
		Intermittent	**Persistent**		
			Mild	**Moderate**	**Severe**
Impairment	Symptoms	≤2 days/week	>2 days/week but not daily	Daily	Throughout the day
	Nighttime awakenings	0	1-2 x/month	3-4 x/month	>1x/week
	SABA use for symptom control	≤2 days/week	>2 days/week but not daily	Daily	Several times per day
	Interference with normal activity	None	Minor limitation	Some limitation	Extremely limited
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 FEV_1.			
Recommended step for initiating therapy (see Stepwise Approach chart)		**Step 1**	**Step 2**	**Step 3** consider short course of oral systemic corticosteroids	
		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 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

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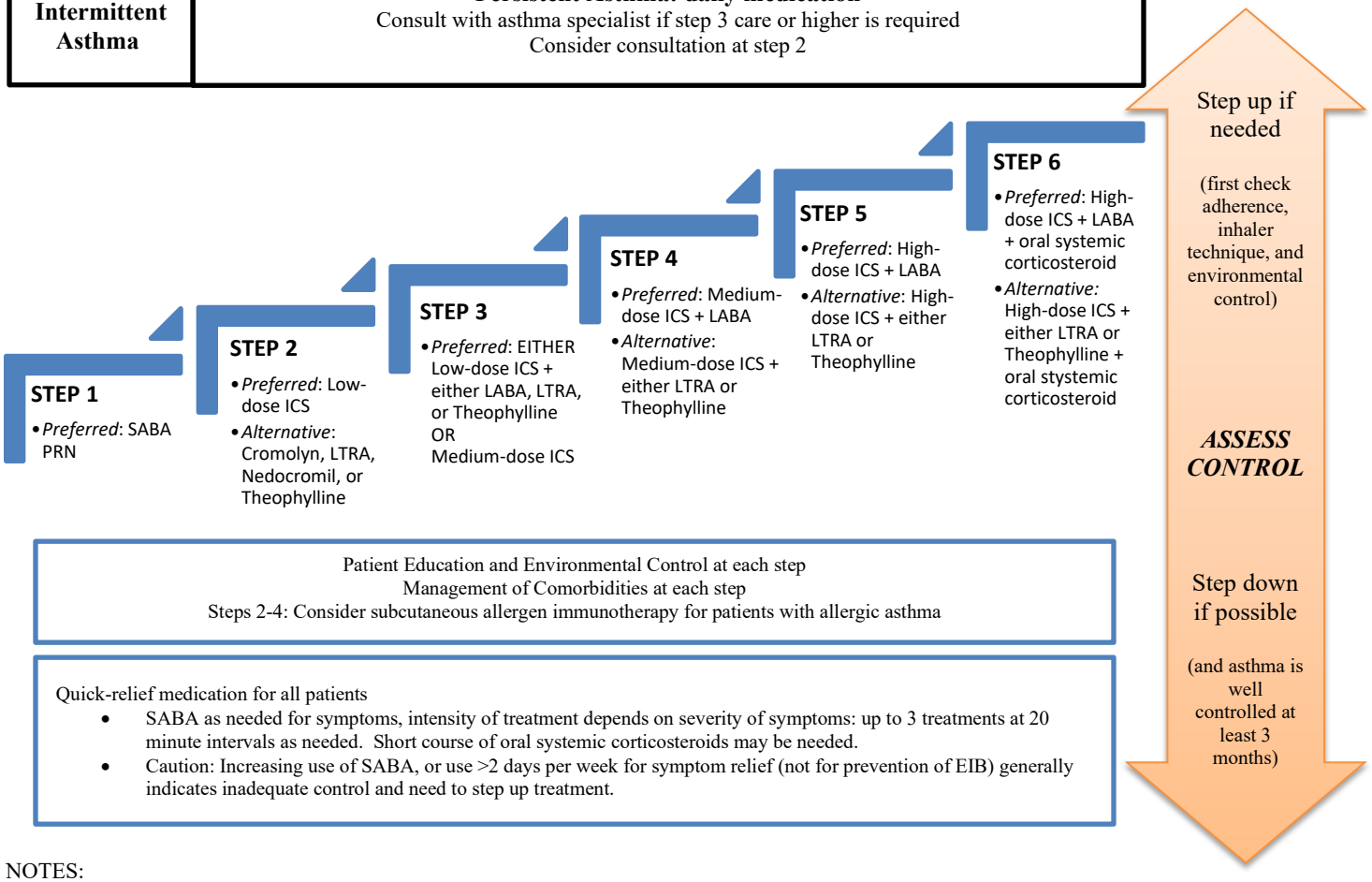
Assessing Asthma CONTROL in Children 0-4 Years of Age				
Components of Control		CLASSIFICATION OF ASTHMA CONTROL: CHILDREN 0-4 YEARS		
		Well Controlled	**Not Well Controlled**	**Very Poorly Controlled**
Impairment	Symptoms	≤2 days/week	>2 days/week	Throughout the day
	Nighttime awakenings	≤1x/month	>1x/month	>1x/week
	SABA use for symptom control	≤2 days/week	>2 days/week	Several times per day
	Interference with normal activity	None	Some limitation	Extremely limited
Risk	Exacerbations requiring oral systemic corticosteroids	0-1/year	2-3/year	>3/year
	Treatment-related adverse events	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.		
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 •If no clear benefit in 4-6 wks, consider alternative diagnoses 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 diagnoses 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 as patients who have not-well-controlled asthma, even in the absence of impairment levels consistent with persistent asthma.

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



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 beta$_2$-agonist
  - LTRA: leukotriene receptor antagonist
  - SABA: inhaled short-acting beta$_2$-agonist.
- 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.

DENVER HEALTH MEDICAL PLAN INC.™ DENVER HEALTH MEDICAID CHOICE

CLINICAL CARE GUIDELINE

Guideline Number: DHMP_DHMC_CG1007 **Effective Date:** 11/2021

Guideline Subject: Management of Asthma in Adults and Children **Revision Date:** 11/2022

Quality Management Committee Chair **Date**

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

Assessing severity and initiating therapy in children who are not currently taking long-term control medication

Components of Severity		CLASSIFICATION OF ASTHMA SEVERITY: CHILDREN 5-11 YEARS			
		Intermittent	**Persistent**		
			Mild	**Moderate**	**Severe**
Impairment	Symptoms	≤2 days/week	>2days/week but not daily	Daily	Throughout the day
	Nighttime awakenings	≤2x/month	3-4x/month	>1x/week but not nightly	Often 7x/week
	SABA use for symptom control	≤2 days/week	>2 days/week but not daily and not more than once/day	Daily	Several times per day
	Interference with normal activity	None	Minor limitation	Some limitation	Extremely limited
	Lung Function FEV_1 (% predicted) FEV_1/FVC	Normal FEV_1 between exacerbations >80% >85%	 >80% >80%	 60-80% 75-80%	 <60% <75%
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 FEV_1.			
Recommended step for initiating therapy		**STEP 1**	**STEP 2**	**STEP 3** medium-dose inhaled corticosteroid option	**STEP 3** Medium-dose inhaled corticosteroid option, or **STEP 4**
				Consider short course of oral systemic corticosteroids	
		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.

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CLINICAL CARE GUIDELINE

Guideline Number: DHMP_DHMC_CG1007 **Effective Date:** 11/2021

Guideline Subject: Management of Asthma in Adults and Children **Revision Date:** 11/2022

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Quality Management Committee Chair **Date**

Assessing Asthma Control in Children 5-11 Years of Age

Assessing Asthma CONTROL in Children 5-11 Years of Age				
Components of Control		CLASSIFICATION OF ASTHMA CONTROL: CHILDREN 0-4 YEARS		
		Well Controlled	**Not Well Controlled**	**Very Poorly Controlled**
Impairment	Symptoms	≤2 days/week but not more than once on each day	>2 days/week or multiple times on ≤2 days/week	Throughout the day
	Nighttime awakenings	≤1x/month	≥2x/month	>2x/week
	SABA use for symptom control	≤2 days/week	>2 days/week	Several times per day
	Interference with normal activity	None	Some limitation	Extremely limited
	Lung Function: FEV_1 or Peak/Flow	>80% predicted/personal best	60-80% predicted/personal best	<60% predicted/personal best
	FEV_1/FVC	>80%	75-80%	<75%
Risk	Exacerbations requiring oral systemic corticosteroids	0-1/year	2-3/year	>3/year
		Consider severity and interval since last exacerbation		
	Reduction in Lung Growth	Evaluation requires long-term follow-up.		
	Treatment-related adverse events	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.		
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.		

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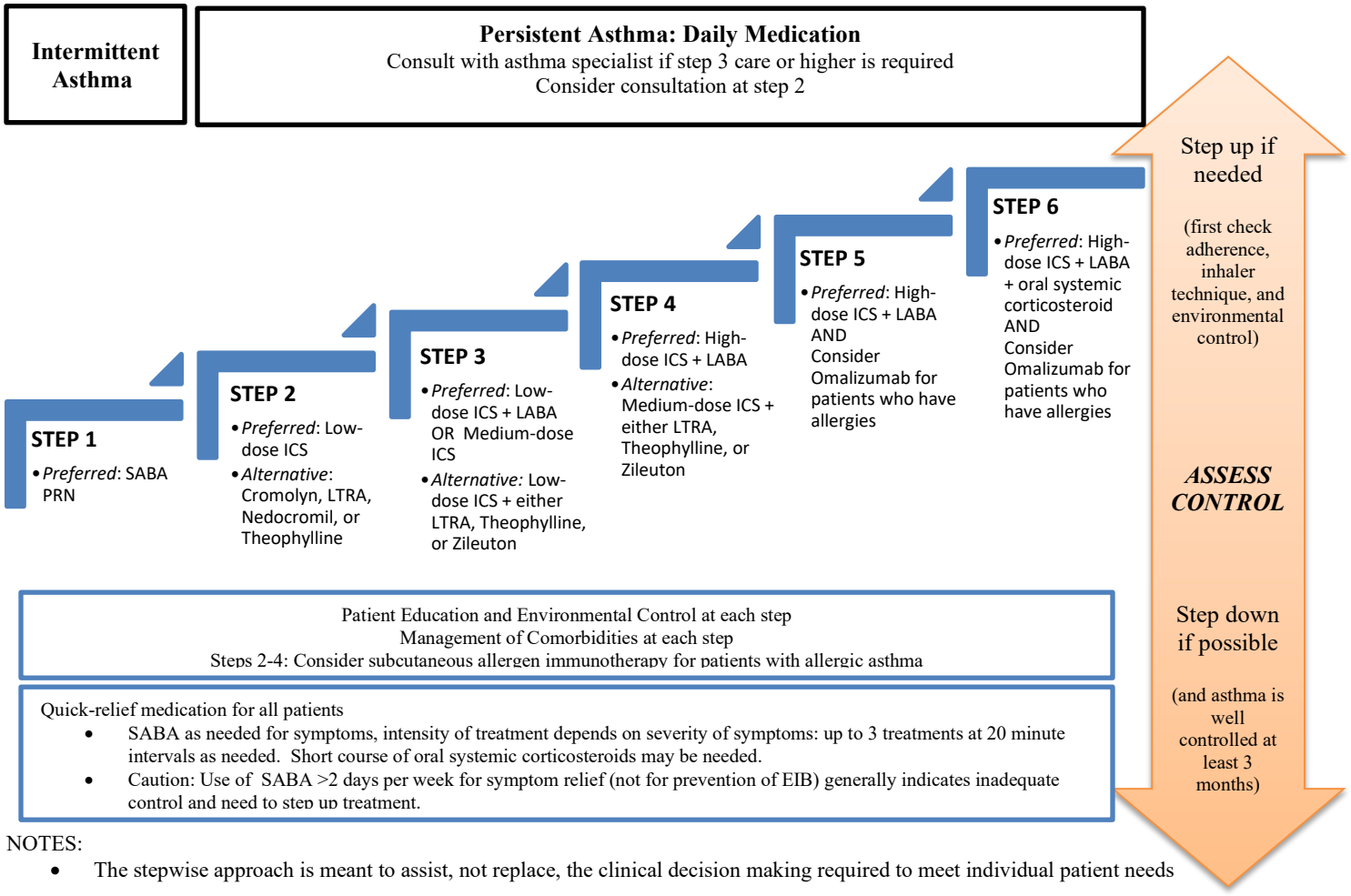
- The level of control is based on the most severe impairment or risk category. Assess impairment domain by patient/caregiver's recall of previous 2-4 weeks and by spirometry/or peak flow measures. Symptom assessment for longer periods should reflect a global assessment, such as inquiring whether the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



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- Abbreviations:

ICS: Inhaled corticosteroid LABA: inhaled long-acting beta$_2$-agonist LTRA: leukotriene receptor antagonist
SABA: inhaled short-acting beta$_2$-agonist.

- Zileuton is a less desirable alternative due to limited studies as adjunctive therapy and the need to monitor liver function. Thephylline requires monitoring concentration levels.
- The role of allergy in asthma is greater in children than in adults.

Assessing severity and initiating therapy in children who are not currently taking long-term control medication

Components of Severity		CLASSIFICATION OF ASTHMA SEVERITY: ≥12 YEARS			
		Intermittent	Persistent		
			Mild	Moderate	Severe
Impairment	Symptoms	≤2 days/week	>2days/week but not daily	Daily	Throughout the day
	Nighttime awakenings	≤2x/month	3-4x/month	>1x/week but not nightly	Often 7x/week
	SABA use for symptom control	≤2 days/week	>2 days/week but not daily and not more than once/day	Daily	Several times per day
	Interference with normal activity	None	Minor limitation	Some limitation	Extremely limited
	Lung Function FEV$_1$ (% predicted) FEV$_1$/FVC	Normal FEV$_1$ between exacerbations >80% Normal*	>80% Normal*	60-80% Reduced 5%*	<60% Reduced >5%*
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 FEV$_1$.			
Recommended step for initiating therapy		STEP 1	STEP 2	STEP 3 Consider short course of oral systemic corticosteroids	STEP 4 OR 5 Consider short course of oral systemic corticosteroids
		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.

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-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.

Classifying Asthma Severity and Initiating Treatment in Members ≥12 Year of Age

*normal FEV_1/FVC by age:8-19 years, 85%; 20-39 years, 80%; 40-59 years, 75%; 60-80years, 70%

Assessing Asthma Control in Members ≥12 Years of Age

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Quality Management Committee Chair **Date**

Assessing Asthma CONTROL in youth and adults ≥12 Years of Age				
Components of Control		CLASSIFICATION OF ASTHMA CONTROL: ≥12 YEARS		
		Well Controlled	**Not Well Controlled**	**Very Poorly Controlled**
Impairment	Symptoms	≤2 days/week	>2 days/week	Throughout the day
	Nighttime awakenings	≤2x/month	1-3x/week	>4x/week
	SABA use for symptom control	≤2 days/week	>2 days/week	Several times per day
	Interference with normal activity	None	Some limitation	Extremely limited
	Lung Function: FEV_1 or Peak/Flow	>80% predicted/personal best	60-80% predicted/personal best	<60% predicted/personal best
	Validated Questionnaires	ATAQ: 0 ACQ: ≤0.75 ACT: ≥20	ATAQ: 1-2 ACQ: ≥1.5 ACT: 16-19	ATAQ: 3-4 ACQ: N/A ACT: ≤15
Risk	Exacerbations requiring oral systemic corticosteroids	0-1/year	≥2/year	
		Consider severity and interval since last exacerbation		
	Progressive loss of lung function	Evaluation requires long-term follow-up care.		
	Treatment-related adverse events	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.		
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.		

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REFERENCES:

National Heart, Blood and Lung Institute Expert Panel Report 3 (EPR 3): Guidelines for the diagnosis and management of asthma. NIH Publication #08-4051, August 2007 Full report available online: http://www.nhlbi.nih.gov/guidelines/asthma/

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