

2007 KCQIC Guidelines for Management of Asthma in Children 5-11 Years of Age

The following guidelines apply to management of patients in the ambulatory setting.

Population	Physician / Patient	Recommendations	Frequency	
Children 0-4 years of age Note: 50 to 80% of children who have asthma develop symptoms before their 5 th birthday. Asthma is often not diagnosed and children do not receive appropriate care	Confirm diagnosis / exclude treatable causes	<ul style="list-style-type: none"> ▪ Confirm DX: physician examination; obstruction of airways (wheeze when breathing out especially in children), (Lack of wheezing and a normal chest examination do not exclude asthma). Episodic and recurring, variable and at least partially reversible. Symptoms occur or worsen at night, awakening the patient ▪ Consider other disorders (especially if refractory to TX): Allergic rhinitis or sinusitis, large airway obstruction, Small airway obstruction, other causes such as recurrent cough not due to asthma and aspiration due to wallowing mechanism dysfunction or gastroesophageal reflux ▪ Consider risk factors: Genetic characteristics, environmental exposures and other contribution factors 	At initial visit / diagnosis, unexplained exacerbations	
	Initial physician steps	<ul style="list-style-type: none"> ▪ Start severity appropriate medication (especially inhaled steroids, as indicated) ▪ Provide initial education on disease and self management for care givers ▪ Create and reinforce asthma action plan (should include rescue inhaler use and rescue medications, use of peak flow, etc) ▪ Provide Influenza and Pneumococcal vaccinations as needed 	Early visits and Ongoing	
	Ongoing Physician adjustments <i>Stepwise Approach to Treatment Is Recommended.</i> Consult with Asthma Specialist if step 3 or higher is required. Consider consultation at Step 2	Stepwise Approach: Each step should include patient/caregiver education, environmental control and management of co-morbidities.		Step up if needed (first check adherence, inhaler technique, and environmental control)
		<ul style="list-style-type: none"> ▪ Step 1: Intermittent does not require daily medication. Short acting beta₂ agonist PRN is preferred treatment 		
		<ul style="list-style-type: none"> ▪ Step 2: Persistent Asthma: Preferred Low dose inhaled corticosteroid (Daily/ BID) [A] ▪ Alternative (alphabetically) cromolyn or leukotriene modifier (Montelukast/Singular) or Nedocromil, or Theophylline [A] 		Assess Control
		<ul style="list-style-type: none"> ▪ Step 3: Persistent Asthma: Daily Low dose ICS plus either LABA or LTRA or Theophylline or medium dose inhaled corticosteroid. [D] 		
		<ul style="list-style-type: none"> ▪ Step 4: Persistent Asthma: Daily medium dose inhaled corticosteroid AND either long acting inhaled beta₂ agonist or Montelukast/Singular. Alternative: Medium dose ICA plus either LTRA or Theophylline [D] 		
		<ul style="list-style-type: none"> ▪ Step 5: Persistent Asthma: Daily High dose inhaled corticosteroid AND long acting inhaled beta₂ agonist or Montelukast/Singular. Alternative: High dose ICS plus either LTRA or theophylline[D] 		
<ul style="list-style-type: none"> ▪ Step 6: Persistent Asthma: Daily High dose inhaled corticosteroid plus LABA plus oral systemic corticosteroid. Alternative: High dose ICS plus either LTRA or Theophylline plus or systemic corticosteroid. [D] ▪ Oral Systemic corticosteroids 		Step down if poss. (and asthma is well controlled for at least 3 months)		
Physician Management of acute exacerbations	<ul style="list-style-type: none"> ▪ Refer to nurse educator (Caregiver/parents not understanding disease or no trained office staff to teach) ▪ Provide and reinforce written asthma action plan ▪ Provide Caregiver/Parents with education on self-management and controlling environmental factors that make asthma worse (e.g., allergens, irritants) 	During acute episode		
Patient and Family education	<ul style="list-style-type: none"> ▪ Education and Environmental control at each step ▪ Recognition and treatment of symptoms and when to seek medical attention ▪ Avoid triggers of exacerbation such as cold air, smokes, mold, etc 	Initial and ongoing		
Patient and Family self monitoring	<ul style="list-style-type: none"> ▪ Diary and asthma action plan ▪ Prevent triggers of exacerbation 	Initial & with increased. symptoms		

Quick Relief Medications for All Patients

Short acting beta₂ agonist as needed for symptoms. Intensity of treatment depends on severity of symptoms.

With viral respiratory infection: Short acting beta₂ agonist q 4 -6 hours up to 24 hours (longer with physician consult). Consider short course of oral systemic corticosteroids if exacerbation is severe or patient has history of previous severe exacerbations.

Caution: Frequent use of Short acting beta₂ agonist may indicate the need to step up treatment and initiate daily long-term control therapy.

▪ Stepwise approach is meant to assist, not replace, the clinical decision making required to meet individual patient needs. If alternative treatment is used and response is inadequate, discontinue it and use the preferred treatment

before stepping up. 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.

Reference: Expert Panel Report 3 (EPR 3): Guidelines for the Diagnosis and Management of Asthma (2007) National Heart Lung and Blood Institute at <http://www.nhlbi.nih.gov/guidelines/asthma/index.htm>

Levels of Evidence for the most significant recommendation: A= randomized controlled trials; B = controlled trials, no randomizations; C= observational studies; D= opinion of expert panel

This guideline represents steps to be taken for the usual patient with persistent asthma. Individual patient considerations and advances in medical science may supersede or modify these recommendations. Kansas City Quality Improvement Consortium. Revised and approved 12/2007

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Components of Severity		Classification of Asthma Severity 5 -11 Years of Age			
		Intermittent	Persistent		
			Mild	Moderate	Severe
Impairment	Symptoms	≤ 2 days/week	>2 days/week but not daily	Daily	Throughout the day
	Nighttime awakenings	≤ 2 x/month	3-4x/month	>1 x/week but not daily	Often 7x/week
	Short acting beta ₂ agonist use for symptom control (not prevention of exacerbations)	≤ 2 days/week	>2days/week but not daily,	Daily	Several times per day
	Interference with normal activity	None	Minor limitations	Some Limitation	Extremely Limited
	Lung Function	<ul style="list-style-type: none"> ▪ Normal FEV₁ between exacerbations ▪ FEV₁ > 80% predicted ▪ FEV₁/FVC >85% 	<ul style="list-style-type: none"> ▪ FEV₁ > 80% predicted ▪ FEV₁/FVC >80% 	<ul style="list-style-type: none"> ▪ FEV₁ or PEF ≥ 60-80% ▪ FEV₁/FVC = 75-80% 	<ul style="list-style-type: none"> ▪ FEV₁ <60% predicted ▪ FEV₁/FVC <75%
Risk	Exacerbations requiring oral systemic corticosteroids	0-1/year	≥ 2/year		
		Consider severity and interval since last exacerbation. Frequency and severity may fluctuate over time for patients in any severity category.			
		Relative annual risk of exacerbations may be related to FEV ₁			
Recommended Step for Initiating Treatment		Step 1	Step 2	Step 3, medium dose ICS option	Step 3, medium dose ICS option or step 4
In 2-6 weeks, depending on severity, evaluate level of asthma control that is achieved and adjust therapy accordingly.					

- Level of severity is determined by assessment of both impairment and risk. Assess impairment domain by patient's/caregiver's recall or 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. 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 who had ≥2 exacerbations requiring oral systemic corticosteroids in the 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.

Stepwise Approach for Managing Asthma in Children 5-11 years of age

Step up if needed (check adherence, inhaler technique, environmental control and co-morbid conditions) **Assess Control** **Step down if possible** (and asthma is well controlled at least 3 months)

Intermittent Asthma	Persistent Asthma: Daily Medication. Consult with Asthma specialist if step 3 care or higher is required. Consider consultation at Step 3				
Step 1 Preferred: SABA PRN	Step 2 Preferred: Low-Dose ICS Alternative: Cromolyn, LTRA, Nedocromil or Theophylline	Step 3 Preferred: Either Low-Dose ICS plus either LABA, LTRA or Theophylline or Medium Dose ICS	Step 4 Preferred: Medium dose ICS plus either LABA Alternative: Medium-dose ICS plus either LTRA or Theophylline	Step 5 Preferred: High Dose ICS plus LTRA Alternative: High dose ICS plus either LTRA or Theophylline	Step 6 Preferred: High dose ICS plus LABA plus oral systemic corticosteroid Alternative: High dose ICS plus either LTRA or Theophylline or oral systemic corticosteroid

Patient/Caregiver Education and Environmental Control at Each Step

<p>Key Questions to ask child and parent/caregiver [C]</p> <ul style="list-style-type: none"> ▪ Which medicines are your child currently taking? How often? ▪ Who is responsible for giving the child's medication? ▪ Please show me how the child takes the medicine. ▪ How many times a week does the child miss taking the medication? ▪ What problems have you/your child had taking/giving the medicine (cost, time, lack of perceived need)? ▪ What concerns do you have about the asthma medication? 	<p>Other Factors</p> <ul style="list-style-type: none"> ▪ Reasons for possible poor response and target interventions [C]. These include coexisting conditions (e.g.; sinusitis), new or increase exposure to allergens or irritants or psychosocial problems. ▪ Patient adherence, inhaler techniques (if applicable), and environmental control measures [B-extrapolated].
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