Michigan Quality Improvement Consortium

Michigan Quality Improvement Consortium Guideline

Management of Asthma in Children 0 to 4 Years

Key Components	Recommendation and Level of Evidence

First, assess severity to decide initial therapy

Assess Asthma Severity

Components of **Severity**		*Intermittent*	*Persistent (Mild)*	*Persistent (Moderate)*	*Persistent (Severe)*
Impairment	Symptoms	≤ 2 days/week	> 2 days/week, not daily	Daily	Throughout day
	Nighttime awakenings	0	1-2x/month	3 - 4x/month	> 1x/wk
	Short-acting beta$_2$-agonist use for symptoms	≤ 2 days/week	> 2 days/week, not daily	Daily	Several times daily
	Interference with normal activity	None	Minor limitation	Some limitation	Extremely limited
Risk	Exacerbations requiring oral steroids	0-1/year	≥ 2 in 6 months requiring oral steroids, **or** ≥ 4 in 1 year lasting > 1 day **and** have risk factors for persistent asthma		
		Consider severity & interval since last exacerbation. Frequency & severity may fluctuate over time for patient of any severity class.			
Recommended step for initiating treatment		**Step 1**	**Step 2**	**Step 3**	
		Re-evaluate control in 2-6 weeks and adjust therapy accordingly.			

On follow-up, assess control and step therapy up or down. Check adherence, inhaler/spacer technique, environment, and co-morbidities.

Assess Asthma Control

Components of **Control**		*Well-Controlled*	*Not Well-Controlled*	*Very Poorly Controlled*
Impairment	Symptoms	≤ 2 days/week, but not > 1/day	> 2 days/week or many times on ≤ 2 days/week	Throughout day
	Nighttime awakenings	≤ 1x/month	> 1x/month	> 1x/week
	Short-acting beta$_2$-agonist use for symptoms	≤ 2 days/week	> 2 days/week	Several times/day
	Interference with normal activity	None	Some limitation	Extremely limited
Risk	Exacerbations requiring oral steroids	0-1x/year	2-3x/year	> 3x/year
	Treatment-related adverse effects	Intensity of medication-related side effects does not correlate to specific levels of control, but should be considered in overall assessment of risk.		
Recommended treatment and follow-up		◆ Maintain current step ◆ Regular follow-up every 1-6 months ◆ Consider step down if well-controlled ≥ 3 months	◆ Step up 1 step ◆ Re-evaluate in 2-6 weeks ◆ If no clear benefit in 4-6 weeks, consider alternative diagnosis or adjust therapy **[D].**	◆ Consider oral steroids ◆ Step up 1-2 steps ◆ Re-evaluate in 2 weeks

Step approach for asthma management (Use lowest treatment level required to maintain control.)

- Quick relief medication for all patients: Inhaled short-acting beta$_2$-agonist (SABA) as needed **[A]**. Up to 3 treatments at 20-minute intervals as needed. Short course of oral corticosteroids may be needed.
- Use of SABA > 2 days a week for symptom control (not prevention of exercise-induced bronchospasm) indicates inadequate control and the need to step up treatment.
- Patient education and environmental control at each step.
- Persistent asthma: Daily long-term control therapy **[A]**; consult with asthma specialist step 4 or higher **[D]**; consider consultation at step 3 **[D]**

Intermittent	**Mild Persistent**	**Moderate Persistent**		**Severe Persistent**	
Step 1	**Step 2**	**Step 3**	**Step 4**	**Step 5**	**Step 6**
Preferred Short-acting beta$_2$-agonist as required	**Preferred** Low-dose inhaled corticosteroid **[A]** **Alternative** Cromolyn or Montelukast **[B]**	**Preferred** Medium-dose inhaled corticosteroid **[D]**	**Preferred** Medium-dose inhaled corticosteroid + either a long-acting beta$_2$-agonist* or montelukast **[D]**	**Preferred** High-dose inhaled corticosteroid + either a long-acting beta$_2$-agonist* or montelukast **[D]**	**Preferred** High-dose inhaled corticosteroid + oral corticosteroid + either a long-acting beta$_2$-agonist* or montelukast **[D]**

Warning for use of Long-acting beta-agonists (LABA). See Black Box Warning:

- Do not use LABA as monotherapy. Use only with an asthma controller such as inhaled corticosteroids (preferably combination product for children).
- Use for the shortest duration possible.
- Only use if not controlled on other drugs.
- Pediatric and adolescent patients who require the addition of a LABA to an inhaled corticosteroid should use a combination product containing both.

*Currently there are no LABAs identified for use in children 0-4 years of age.

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

This guideline lists core management steps. It is based on the 2007 National Asthma Education and Prevention Program Expert Panel Report 3, Guidelines for the Diagnosis and Management of Asthma, National Heart, Lung and Blood Institute (www.nhlbi.nih.gov). Individual patient considerations and advances in medical science may supersede or modify these recommendations.