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IU MEDICAL GROUP – PRIMARY CARE
CLINICAL PRACTICE GUIDELINE

Pediatric
Asthma Guideline Children 0-4 Years of Age – Initial Assessment

Approved by:



Dawn Haut, MD
Chair, Pediatric Clinical Policy &
Advisory Committee

4/12/12
Date



Greg Kiray, MD
Chief Medical Officer

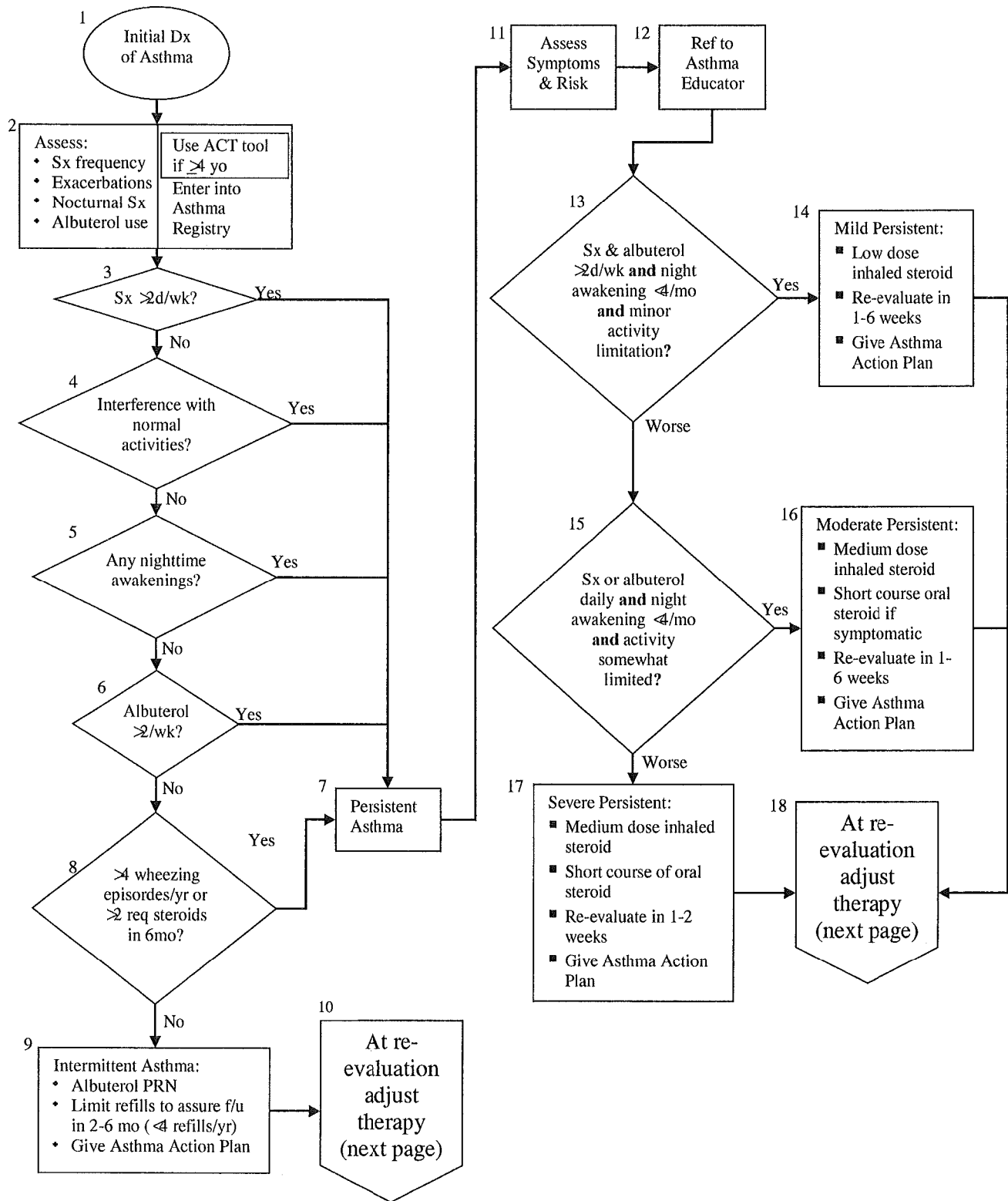
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Date



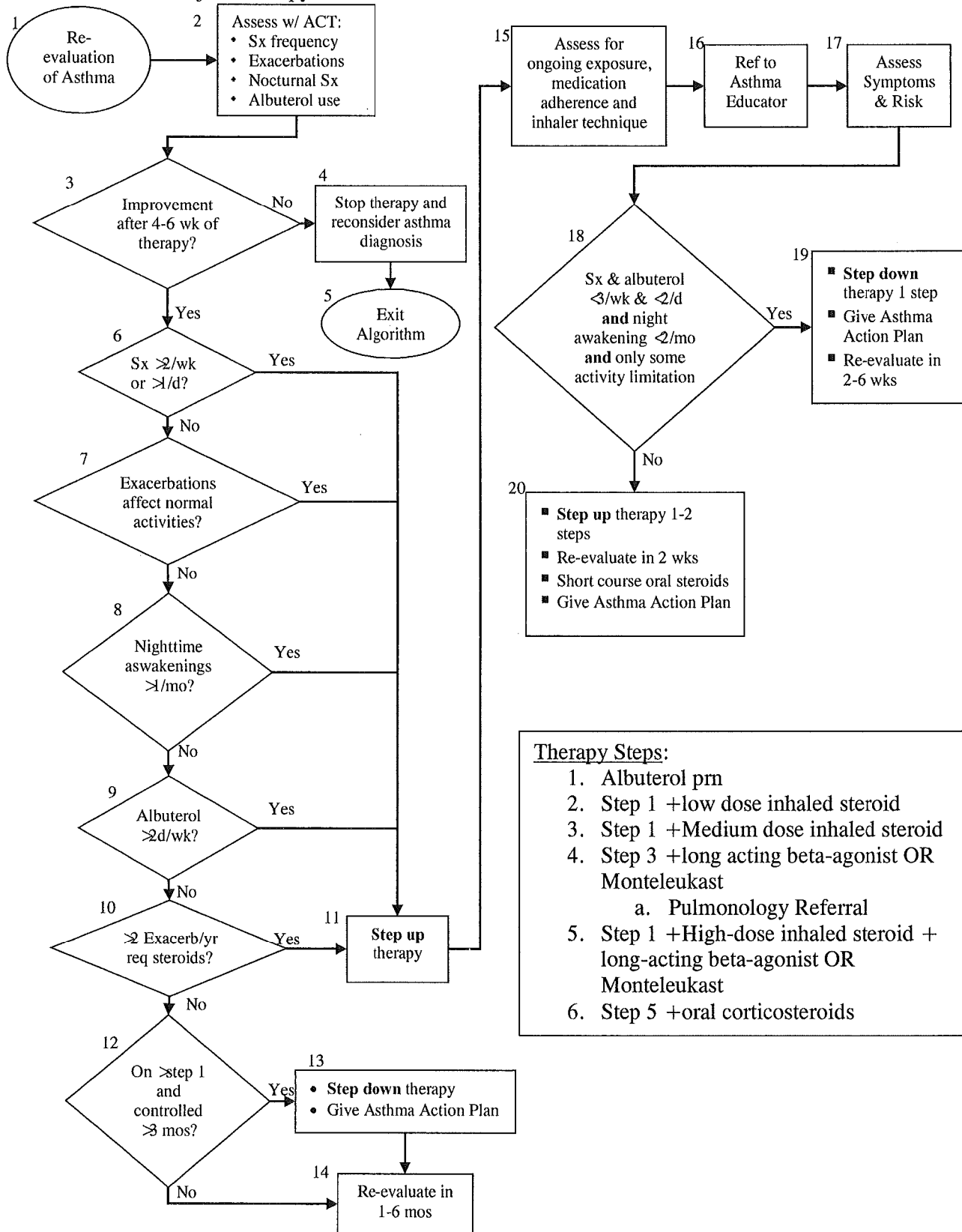
John Kunzer, MD
Chief Medical Officer

4/11/12
Date

This practice guideline is intended to provide the practitioner with a framework to assist in patient care decisions. It does not replace the physicians judgment and may not be appropriate for all cases.



Assess Control and Adjust Therapy



- Therapy Steps:**
1. Albuterol prn
 2. Step 1 +low dose inhaled steroid
 3. Step 1 +Medium dose inhaled steroid
 4. Step 3 +long acting beta-agonist OR Monteleukast
 - a. Pulmonology Referral
 5. Step 1 +High-dose inhaled steroid + long-acting beta-agonist OR Monteleukast
 6. Step 5 +oral corticosteroids

This guideline has been adapted for use from the National Heart Lung and Blood Institute (NHLBI), Guidelines for the Diagnosis and Management of Asthma, August 28, 2007. <http://www.nhlbi.nih.gov/guidelines/asthma/asthgdln.htm>

ASTHMA PATIENT ACTION PLAN

PLEASE USE A BALL POINT PEN AND PRESS FIRMLY

Name: _____

Member No.: _____

Doctor: _____ Date: _____

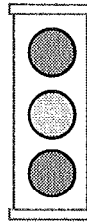
Address: _____

Phone number for doctor or clinic: _____

Phone number for taxi or friend: _____

Personal Best Peak Flow: _____

You can use the colors of traffic light to help learn about your asthma medicines.



1. **Green** means **Go**.
80–100% Personal Best Peak Flow. Use controller medicine.
2. **Yellow** means **Caution**.
50–79% Personal Best Peak Flow. Use reliever medicine.
3. **Red** means **Stop**. <50% Personal Best Peak Flow. Get help from a doctor.



1. Green – Go

Use controller medicine.

Breathing is good
No coughing, or wheezing
Can work and play

Peak Flow Number _____

to _____

(80–100%

Personal Best Peak Flow)



<u>Medicine</u>	<u>How much to take</u>	<u>When to take it</u>
_____	_____	_____
_____	_____	_____

Use 2 to 4 puffs of Albuterol 10 to 20 minutes before exercise or a known trigger.

2. Yellow – Caution

Take reliever medicine to keep an asthma attack from getting bad.



Coughing



Wheezing



Tight chest



Waking up at night.

Peak Flow Number _____

to _____

(50–79%

Personal Best Peak Flow)

<u>Medicine</u>	<u>How much to take</u>	<u>When to take it</u>
Albuterol	2 to 4 puffs or nebulizer machine	every 4 hours
_____	_____	_____

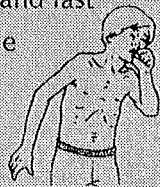
If after four days not better, call physician _____

() _____ - _____

3. Red – Stop – Danger

*Get help from a doctor now!
Take these medicines until you talk with the doctor.*

Medicine is not helping
Breathing is hard and fast
Nostrils open wide
Can't walk
Ribs show
Can't talk well



Peak Flow Number _____

to _____

(less than 50%

Personal Best Peak Flow)

<u>Medicine</u>	<u>How much to take</u>	<u>When to take it</u>
Albuterol	4 puffs or nebulizer machine	NOW

Wait 15 minutes, if not better, repeat Albuterol treatment. Wait 15 minutes. If still bad, go to the Emergency Room or call 911.

Signatures:

Physician

Patient

Caregiver

Page 1: Patient

Page 2: Primary Care Physician

Page 3: Specialist

ESTIMATED COMPARATIVE DAILY DOSAGES FOR INHALED CORTICOSTEROIDS

Drug	Trade Name	Low Daily Dose			Medium Daily Dose			High Daily Dose		
		Child 0-4 Yrs of Age	Child 5-11 Yrs of Age	>12 yrs of Age	Child 0-4 Yrs of Age	Child 5-11 Yrs of Age	>12 yrs of Age	Child 0-4 Yrs of Age	Child 5-11 Yrs of Age	>12 yrs of Age
Beclomethasone HFA 40 or 80 mcg/puff	Qvar	NA	80-160 mcg	80-240 mcg	NA	>160-320 mcg	>240- 480 mcg	NA	>320 mcg	>480 mcg
Budesonide DPI 90, 180, or 200 mcg/inhalation	Pulmicort Turbuhaler	NA	180-400 mcg	108-600 mcg	NA	>400-800 mcg	>600 – 1,200 mcg	NA	>800 mcg	> 1,200 mcg
Budesonide Inhaled Inhalation suspension for nebulization	Pulmicort Respules	0.25 – 0.5 mg	0.5 mg	NA	>0.5-1.0 mg	1.0 mg	NA	>1.0 mg	2.0 mg	NA
Fluticasone HFA/MDI: 44,110 or 220 mcg/puff DPI: 50, 100, or 250 mcg/inhalation	Flovent	176 mcg	88-176 mcg	88-264 mcg	>176- 352 mcg	>176-352 mcg	>264- 440 mcg	>352 mcg	>352 mcg	>440 mcg
		NA	100-200 mcg	100-300 mcg	NA	>200-400 mcg	>300- 500 mcg	NA	>400 mcg	>500 mcg
Mometasone DPI 200 mcg/inhalation	Asmanex	NA	NA	200 mcg	NA	NA	400 mcg	NA	NA	>400 mcg
Triamcinolone acetonide 75 mcg/puff	Azmacort	NA	300-600 mcg	300-750 mcg	NA	>600-900 mcg	>750- 1,500 mcg	NA	>900 mcg	>1,500 mcg

Key: DPI, dry powder inhaler; HFA, hydrofluoroalkane; MDI, metered-dose inhaler; NA, not available (either not approved, no data available, or safety and efficacy not established for this age group)

Therapeutic issues:

- The most important determinant of appropriate dosing is the clinician's judgement of the patient's response to therapy. The clinician must monitor the patient's response on several clinical parameters and adjust the dose accordingly. Once control of asthma is achieved, the dose should be carefully titrated to the minimum dose required to maintain control.
- Preparations are not interchangeable on a mcg or per puff basis. This figure presents estimated comparable daily doses. See EPR-3 Full Report 2007 for full discussion. <http://www.nhlbi.nih.gov/guidelines/asthma/asthgdln.pdf>
- Some doses may be outside package labeling, especially in the high-dose range. Budesonide nebulizer suspension is the only inhaled corticosteroid (ICS) with FDA-approved labeling for children <4 years of age.
- For children <4 years of age: the safety and Efficacy if ICSs in children <1 year has not been established. Children <4 years of age generally require delivery of ICS (budesonide and fluticasone HFA) through a face mask that should fit snugly over nose and mouth and avoid nebulizing in the eyes. Wash face after each treatment to prevent local corticosteroid side effects. For budesonide, the dose may be administered 1-3 times daily. Budesonide suspension is compatible with albuterol, ipratropium, and levalbuterol nebulizer solutions in the same nebulizer. Use only jet nebulizers, as ultrasonic nebulizers are ineffective for suspensions. For fluticasone HFA, the dose should be divided 2 times daily; the low dose for children <4 years of age is higher than for children 5-11 years of age due to lower dose delivered with face mask and data on efficacy in young children.

Potential Adverse Effects of Inhaled Corticosteroids:

- Cough, dysphonia, oral thrush (candidiasis)
- Spacer or valved holding chamber with non-breath-actuated MDIs and mouthwasing and spitting after inhalation decrease local side effects.
- A number of the ICSs, including fluticasone, budesonide, and mometasone, are metabolized in the gastrointestinal tract and liver by CYP 3A4 isoenzymes. Potent inhibitors of CYP 3A4, such as ritonavir and ketoconazole, have the potential for increasing systemic concentrations of these ICSs by increasing systemic clearance. Some cases of clinically significant Cushing syndrome and secondary adrenal insufficiency have been reported.
- In high doses, systemic effects may occur, although studies are not conclusive, and clinical significance of these effects has not been established (e.g., adrenal suppression, osteoporosis, skin thinning, and easy bruising). In low-to-medium doses, suppression of growth velocity has been observed in children, but this effect may be transient, and the clinical significance has not been established..