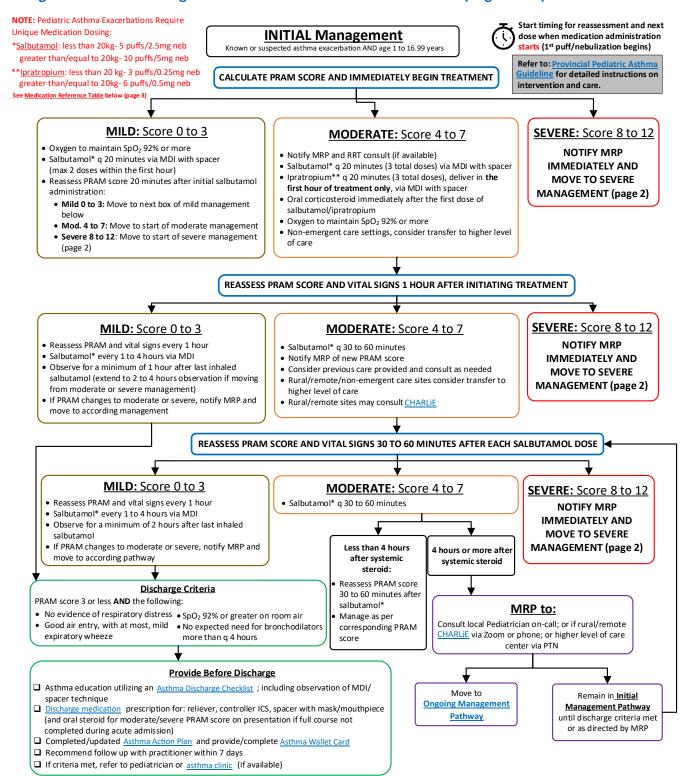




CHBC Provincial Guideline

Algorithm: Initial Management of Pediatric Asthma Exacerbations (Page 1 of 3)



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Algorithm: Initial Management of Pediatric Asthma Exacerbations (Page 2 of 3)

NOTE: Pediatric Asthma Exacerbations Require Unique Medication Dosing:

*Salbutamol: less than 20kg- 5 puffs/2.5mg neb; greater than/equal to 20kg - 10 puffs/5mg neb

** Ipratropium: less than 20 kg-3 puffs/0.25mg neb; greater than/equal to 20kg-6 puffs/0.5mg neb See Medication Reference Table below (page 3)



Start timing for reassessment and next dose when medication administration starts (1st puff/nebulization begins)

SEVERE: Score 8 to 12

- Inhaled salbutamol* and ipratropium** MDI with spacer or nebulizer q 20 minutes (x3 total)
 - If salbutamol* q 20 minutes x3 already provided, administer continuous nebulized salbutamol
 - If ipratropium** already provided during management, do not administer again
- Establish vascular access
- If not already provided, administer:
 - MethylPREDNISolone IV, even if PO steroid already provided
- Continuous SpO2, heart rate and respiratory rate monitoring
- Most responsible physician at bedside, consult RRT (if available)
- Consider early respiratory support and magnesium sulfate infusion (see below for further recommendations)
- Consult local Pediatrician on-call; or if rural/remote CHARLIE via Zoom or phone; or higher level of
- Rural/remote sites consider/prepare transfer to higher level of care

Refer to: Pediatric Asthma

Guideline for detailed instructions on intervention and

Signs of Impending **Respiratory Failure**

- · Decreased level of
- consciousness
- Agitation Cyanosis
- Decreased respiratory
- effort Confusion

REASSESS PRAM SCORE 1 HOUR AFTER INITIATING TREATMENT

MILD: Score 0 to 3 or MODERATE:

Score 4 to 7

Reassess vital signs and PRAM q 30 min x 2 (salbutamol* q 30 to 60 minutes); <u>then</u> Move to MILD or

MODERATE

management (page 1)

SEVERE: Score 8 to 12

- Begin of maintain continuous administration of nebulized salbutamol
- If not already provided, adminster:
 - MethylPREDNISolone IV (even if PO steroid already provided)
 - Magnesium sulfate IV (following appropriate health authority/agency guidelines). Monitor BP a 5 minutes during infusion, then a 30 minutes
- If signs of circulatory compromise, provide isotonic 10 to 20mL/kg bolus (max 1L) over 10-20 minutes to achieve adequate perfusion (monitor for fluid overload)
- Continuous SpO₂, heart rate and respiratory rate monitoring
- BiPAP is the first-line recommendation for non-invasive respiratory support for patients with
 Anesthesia consult for airway severe work of breathing and/or impending respiratory failure (BCCH/VGH PICU can support)
 - ▲ Caution using HFNC: see considerations for potential use of HFNC in 'Oxygen and Respiratory Support' section of guideline
- Consult local Pediatrician on-call; or if rural/remote CHARLIE via Zoom or phone; or higher level of care center via PTN
- Consider intubation with PICU consult in patient with impending respiratory failure despite maximum therapy

Consider:

- CXR
- · Blood gas (venous, capillary or arterial)
- Electrolytes, CBC & Differential
- · POC blood glucose
- · Possibility of a pneumothorax
- management

REASSESS PRAM SCORE EVERY 15 MINUTES OR AS DIRECTED

MILD: Score 0 to 3 or MODERATE: Score 4 to 7

Reassess vital signs and PRAM q 30 min x 2 (salbutamol* q 30 to 60 minutes); then

> Move to MILD or MODERATE management (page 1)

SEVERE: Score 8 to 12

- Continuous administration of nebulized salbutamol
- Early consultation with BCCH/VGH PICU via PTN for all patients with:
 - · impending respiratory failure,
 - those who fail to improve following initial management; and/or
 - in patients for whom transfer to a higher level of care is
- Continue assessments q 15 minutes or as otherwise directed

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Initial Management of Pediatric Asthma Exacerbations Medication Reference (Page 3 of 3)

Bronchodilators

	Child weight less than 20 kg: 5 puffs via MDI with spacer (100
	mcg/puff); or 2.5 mg via nebulizer
salbutamol (intermittent)	Child weight greater than or equal to 20 kg: 10 puffs via MDI with
	spacer (100 mcg/puff); <u>or</u> 5 mg via nebulizer
	Note: salbutamol doses are the same throughout the management algorithm.
adbutamal (aantinuaua)	20 mg/hr via nebulizer
salbutamol (continuous)	Note: salbutamol doses are the same throughout the management algorithm.
	Child weight less than 20 kg: 3 puffs via MDI with spacer (20
	mcg/puff); <u>or</u> 0.25 mg via nebulizer
ipratropium	
(intermittent)	
(intermittent)	Child weight greater than or equal to 20 kg: 6 puffs via MDI with
	spacer (20 mcg/puff); <u>or</u> 0.5 mg via nebulizer

Note: administering nebulized medication through a HFNC circuit will dramatically reduce delivered dose. See guideline for detailed instructions.

Systemic Steroids

dexamethasone	0.6 mg/kg/dose (max 16 mg/dose) PO x 1 dose Second dose to be given after 24 hours in hospital if scoring moderate or severe PRAM	
prednisone/prednisolone	1 mg/kg/dose (max 60 mg/dose) PO daily (x 5 days)	
methylPREDNISolone	1 mg/kg/dose (max 60 mg/dose) IV q6h	

Other

	50 mg/kg/dose (max 2000mg/dose) IV x 1
magnesium sulfate	dose
	over 20 minutes
0.9% NaCl/Ringer's Lactate bolus	10-20 mL/kg bolus (max 1L) over 10 to 20
0.9% NaCt/Ringer's Lactate botus	minutes

List of Abbreviations

BCCH/VGH PICU = BC Children's Hospital/Victoria General Hospital Pediatric Intensive

BiPAP = Bilevel positive airway pressure

BP = Blood pressure **CBC** = Complete blood count

CHARLIE = Child health advice in real-time electronically

CXR = Chest x-ray

HFNC = High flow nasal cannula ICS = Inhaled corticosteroid

IV = Intravenous

MDI = Metered dose inhaler

MRP = Most responsible physician NaCl/LR = Sodium chloride/Lactated Ringer's O₂ = Oxygen

POC = Point of care

PRAM = Pediatric Respiratory Assessment Measure

PRN = As needed

PTN = Patient transfer network

q = Every

RR = Respiratory rate

RRT = Registered Respiratory therapist

SpO₂ = Oxygen saturation

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