PRIMARY CARE PRACTICE GUIDELINES	**Practice Guideline:** *Emergency Management of Asthma in the Primary Care Setting*	**Guideline Number** *PCPG5*
	Approved By: *Program Mgmt Team - March 31, 2008* *Community Mgmt Team – May 5, 2008*	**Pages:** 1 of 4
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1. PRACTICE OUTCOME

To identify an asthma attack in the primary care setting and to provide an emergency response based on best available evidence.

2. DEFINITIONS

Asthma is defined as
a respiratory disorder characterized by paroxysmal or persistent symptoms, such as dyspnea, chest tightness, wheezing, sputum production and cough associated with variable airflow limitation and airway hyperresponsiveness to endogenous or exogenous stimuli. Inflammation and its resultant effects on airway structure are considered the main mechanisms leading to the development and persistence of asthma.[1]

Asthma symptoms and attacks (i.e. episodes of more severe shortness of breath) usually occur after exposure to "triggers." Some of the common triggers are allergens, viral respiratory infections (e.g. a cold), exercise, or exposure to irritant fumes or gases.[2]

3. GUIDELINES

3.1. Assessment

3.1.1. Onset: sudden onset with rapid progression of symptoms

3.1.2. Usual Causes:

- *Indoor allergens* - exposure to house dust (domestic mites), animal dander (pets), cockroach allergen, and fungi
- *Outdoor allergens* - pollens and fungi, irritant fumes or gases
- *Occupational sensitizers* - exposure to work-related agents
- *Viral respiratory infections*
- *Exercise.*

Triggers include additional exposures to causal factors that have already sensitized a person's airways, such as allergens, respiratory infections, exercise and hyperventilation, weather changes, outdoor and indoor pollutants, foods, additives, and drugs.

3.1.3. Signs and symptoms:

- SIGNS
  - difficulty speaking
  - may have central cyanosis
  - may be agitated
  - elevated pulse rate
  - physical exhaustion
  - wheezing or silent chest with no air entry and no wheezing.
- SYMPTOMS
  - Chest tightness
  - Coughing
  - Shortness of Breath

Initial Assessment of Severity of Acute Asthma In Adults & Children[3]

SYMPTOMS	MILD ATTACK	MODERATE ATTACK	SEVERE ATTACK
Talks in:	Sentences	Phrases	Words

Physical exhaustion	No	No	Yes. Also may have paradoxical chest wall movement
Accessory muscle use/ recession	No	Minimal	Moderate
Pulse rate	< 100/min	100-120/min	> 120/min; less than 60/min*
Level of Consciousness	Normal	May be agitated	Confused, drowsy or agitated
Wheeze intensity	Variable	Moderate – loud	Often quiet
Central cyanosis	Absent	May be present	Likely to be present
Oximetry	> 94%	90 – 94%	< 90%; cyanosis may be present

*Bradycardia may be seen when respiratory arrest is imminent

3.2. **Intervention**

3.2.1. Assess severity of asthma and treat (see Section 5 Quick Reference Sheet).

3.2.2. Follow WRHA General Emergency Protocol for Primary Care Settings.

3.2.3. Activate 911 if:

- client does not respond to treatment within 10 – 15 minutes, or
- client demonstrates clinical signs of progressing deterioration, or
- client loses consciousness.

3.2.4. Consult with physician or RNEP for medication adjustment as required post event. Consider referral to regional asthma education centers

3.2.5. Document the event, including physical assessment, interventions and client's response to treatment.

4. EQUIPMENT/SUPPLIES REQUIRED

Oxygen
Adult and Pediatric AeroChamber with Mask
Adult and Pediatric Non-rebreather masks
Nasal Cannula
Extra Oxygen tubing
Salbutamol 100 microgram/puff
Ipratropium bromide 20 microgram/puff
Prednisone: oral tablets 50 milligram and liquid preparation 1 milligram/milliletre
Adrenaline for anaphylactic reactions as per anaphylaxis protocol
Optional: Pulse Oximeter

5. RESOURCES / QUICK REFERENCE SHEET[4 5]

TREATMENT	MILD ATTACK	MODERATE ATTACK	SEVERE ATTACK
Oxygen	High flow of at least 8 L/minute, titrated to maintain O_2 saturation 92 - 95%. Monitor effect by oximetry, if available. **Will not suppress respiratory drive in acute asthma**		
β2 –agonist per MDI and spacer	Adult: Salbutamol 100 microgram/puff MDI 4 – 8 puffs every 15 – 20 minutes X 3 Pediatric: Salbutamol 100 microgram/puff MDI 0.3 puffs/kg (max 10 puffs). Pause 30 seconds between puffs		Adult: Salbutamol 100 microgram/puff Increase to 1 puff every 30 – 60 seconds Pediatric: Salbutamol 100 microgram/puff. MDI 0.3 puffs/kg. Increase to 1 puff every 30 – 60 seconds.
Systemic Corticosteroids	Likely not necessary	Adult: Prednisone PO 50 mg tablet Pediatric: Prednisone PO (liquid) 1-2mg/kg .	Adult: Prednisone PO 50 mg tablet Pediatric: Prednisone PO (liquid) 1-2mg/kg
Anticholinergics	Should be reserved for patients not responding to β2 –agonists or with severe symptoms		Adult: ipratropium bromide 20 microgram/puff MDI 4-8 puffs every 15-20 min X 3 is usual. Increase to 1 puff every 30-60 sec (4-20 puffs) prn Pediatric: Ipratropium bromide 20 microgram/puff MDI 3-6 puffs every 20-120 min

6. SOURCE /REFERENCES

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[1] Becker A, Lemière, C, Bérubé, D, Boulet, LP, Ducharme FM, FitzGerald, M, Kovesi, T. on behalf of The Asthma Guidelines Working Group of the Canadian Network For Asthma Care. (2005). Summary of recommendations from the Canadian Asthma Consensus Guidelines, 2003. CMAJ . 173: S3-S11. Available at www.cmaj.ca/cgi/reprint/173/6_suppl/S3. Accessed on January 13, 2008.

[2] Health Canada (2006). It's your Health – Asthma. Available at www.hc-sc.gc.ca/iyh-vsv/diseases-maladies/asthm_e.html. Accessed on January 8, 2008.

[3] National Asthma Council Australia (2005). Emergency Management of Asthma. Available at www.nationalasthma.org.au/html/emergency/em001.asp. Accessed on January 8, 2008.ergency Management of Asthma Attack

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