

## **Asthma Emergencies for Public Health Staff**

**Satellite Conference and Live Webcast  
Thursday, February 4, 2016  
9:00 – 10:30 a.m. Central Time**

Produced by the Alabama Department of Public Health  
Video Communications and Distance Learning Division

## **Faculty**

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## **Objectives**

- Discuss pathophysiology of asthma
- List signs and symptoms of acute asthma attack
- List equipment and supplies needed for rapid response to patient with asthma attack in clinic
- Discuss purpose and demonstrate use of metered dose inhaler and holding chamber

## **Rapid Response in Asthma / Bronchospasm: Why is This Important?**

- Patients can deteriorate quickly
- Quick intervention buys time for more definitive care
- Standard of care for office / clinic emergencies

## **What are the Realities for Public Health Clinics?**

- Patients who frequent our programs may not have self care measures for asthma with them
- Short acting beta agonists (SABA) are readily available, easily administered, have minimal side effects
- Therefore, we need to be prepared to respond to acute episode

## **What is Asthma?**

- A chronic inflammatory disease of airways
  - Lower airway obstruction
  - Inflammation of lower airway
  - Increased airway hyper reactivity

–From NHLBI

### **What are Some of the Agents / Factors That Trigger Asthma?**

- Allergens
- Infections
- Exercise
- Chemicals
- Cold and / or dry air
- Emotion

### **What are Some of the Factors / Agents That Trigger Asthma**

- Weather change
- Atopy-pollens, mold, dustmites, animal dander
- Foods, drugs, insect bites (as a subset of anaphylactic reaction)

### **What is the Pathophysiology of Asthma?**

- Inflammation
- Mucosal edema
- Increased mucous production
- Smooth muscle contraction
- Airway constriction
- Bronchospasm - Wheeze

### **What are Common Signs and Symptoms of Asthma?**

- Early warning signs
  - Increased cough
  - Difficulty sleeping
  - Fatigue
  - Breathlessness

### **What are Common Signs of an Asthma Attack?**

- Wheezing
- Increased work of breathing
- Prolonged Expiration
- Decreased breath sounds
- Decreased ability to talk or cry

### **Rapid Assessment for Severity of Asthma - MILD**

- Minimal wheeze, work of breathing, and little to no prolonged expiration, talks in sentences, alert
- Pulse oximetry - sat greater than 94%
- Peak flow - greater than 70%
  - From CHOP

### **Rapid Assessment for Severity of Asthma - MODERATE**

- Wheezing throughout expiration, intercostal retractions, prolonged expiration, talks in phrases, may be agitated
- Pulse oximetry - sat is variable
- Peak flow - 40-69%

– From CHOP

### **Rapid Assessment of Severity of Asthma - SEVERE**

- Inspiratory / Expiratory wheeze or absent because of poor air exchange, suprasternal retractions, abdominal breathing, severe prolonged expiration, agitated
- Pulse oximetry - variable
- Peak expiratory flow - less than 40%

– From CHOP

### **Equipment and Supplies**

- Oxygen and delivery system
- Albuterol metered dose inhaler with chamber or nebulizer for albuterol if available
- Pulse oximeter
- Emergency treatment record

### **Procedure**

- Activate emergency plan including calling 911
- Allow patient to assume position of comfort
- Assist patient with his / her rescue meds if available
- If patient does not have his / her med, follow albuterol clinic protocol for dosage by age / weight

### **Basic Inhaler Technique**

- Infants and young children - Use spacer or chamber, activate MDI, allow child to breathe four breaths after each puff

### **Basic Inhaler Technique**

- Older children and adults - Use spacer or chamber, activate MDI, have patient hold breath for 10 seconds then exhale
  - Wait 1 - 2 minutes then repeat puff

### **Basic Oxygen Administration**

- Follow protocol for storage and maintenance of oxygen cylinder
- Administer oxygen using “blow by” technique or mask and titrate to saturation greater than 94% but less than 100 %

### **Our Patients / Our Priority**

- Train and follow current protocols to respond confidently and correctly to the emergency

### **References**

- <http://www.nhlbi.nih.gov>
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- [www.aaaai.org](http://www.aaaai.org)
- Pediatric Clinics of North America - “Pediatric Emergencies” October, 2013
- Harriet Lane Handbook, 20th Edition
- Zitelli and Davis, Atlas of Pediatric Physical Diagnosis