Respiratory Distress: Summary

- Characterized by signs of increased work of breathing such as stridor, wheeze, tachypnea and retractions or an abnormal pattern of respirations
  - Attempt to improve minute ventilation in response to hypoxemia or hypercarbia
  - Disordered control of ventilation
    - Opioid overdose or head injury => respiratory depression
    - Metabolic acidosis, salicylate overdose, hyperammonemia => respiratory stimulation
- Initial assessment is rapid: quickly determine if patient needs emergent interventions
  - Rule out life-threatening conditions
  - Collect brief history initially and more detailed history once child is stabilized
  - Trauma
    - Change in voice
  - Onset and duration of symptoms
  - Associated symptoms
  - Exposures
  - Previous episodes of respiratory distress
  - Underlying medical conditions
- Physical exam
  - General observation
    - Mental status, position of comfort, nasal flaring, chest wall movement, abnormal sounds appreciated without auscultation, cyanosis, respiratory rate and pattern
  - Auscultation
    - Wheezes, crackles, pleural rub, prolonged expiration, decreased breath sounds, transmitted upper airway sounds

Life Threatening Conditions
  - Complete or severe upper airway obstruction
  - Respiratory failure
  - Tension pneumothorax
  - Pulmonary embolism
  - Cardiac tamponade
Upper Airway Obstruction:
-Croup
  -Symptoms: barking cough, stridor and retractions
  -Treatment:
    - Oxygen
    - NPO
    - Oral dexamethasone (if mild symptoms)
    - IM/IV dexamethasone (if moderate to severe symptoms)
    - Nebulized racemic epinephrine with observation for at least 2 hours after treatment

-Anaphylaxis
  -Symptoms: stridor or wheezing, hives or facial swelling, dizziness, vomiting or diarrhea
  -Treatment:
    - IM/IV epinephrine
    - Albuterol (if bronchospasm is present)
    - Treat hypotension
    - Diphenhydramine and H2 blocker
    - Give methylprednisolone

-Retropharyngeal abscess
  - Local pain, sore throat, difficulty swallowing
  - Stridor and respiratory distress
  - More common in infants and toddlers

-Peritonsillar abscess
  - Local pain, difficulty swallowing and hoarse voice
  - More common in older children and adolescents

Lower Airway Obstruction
- Assisted ventilation should be at a slow rate with adequate expiratory time
- Decreases risk of air trapping and complications with high airway pressure:
  - Pneumothorax
  - Gastric distension, regurgitation and aspiration

Non-cardiogenic Pulmonary Edema: Acute Respiratory Distress Syndrome
- ARDS Definition
  - Acute onset
  - PaO2/FiO2 <300 (regardless of PEEP)
  - Bilateral infiltrates on CXR
  - No evidence for a cardiogenic cause of pulmonary edema
  - Correction of hypoxemia is the most important respiratory parameter to be addressed

Cardiogenic Pulmonary Edema
- Causes include congestive heart failure, acute myocardial dysfunction, cardiac depressant drugs (tricyclic anti-depressants, verapamil)
- Consider expert consultation
- Diuretics may be helpful to reduce pre-load

Disordered Control of Breathing
- May be related to elevation of intracranial pressure or depressed level of consciousness due to CNS infection, seizures, metabolic disorders, poisoning or drug overdose
Respiratory Distress Key References
