Nursing Care of Children and their Families

Alterations in Respiratory Function
Pediatric Respiratory Facts

- Shorter distances between structures in children
- Lumen of respiratory tract is smaller and more easily occluded
- Trachea is smaller in diameter
- Fewer alveoli at birth, number size and shape
- Eustachian tubes are shorter and more horizontal facilitating ear infections
Pediatric Respiratory Facts (cont.)

• Neonates are obligate nose breathers
• Airways are narrower can obstruct more easily
• Infant’s airway walls have less cartilage and are more flexible prone to collapse
• Increased RR and metabolic rates increase need for oxygen
Cystic Fibrosis

- Disorder of exocrine glands
  - Increased production of mucous in bronchioles, small intestines, pancreatic and bile ducts

- Increased viscosity of secretions obstruct small passageways
  - Interfere with pulmonary and digestive functioning
  - Lung- atelectasis
  - Pancreatic ducts clogged impairing digestion and absorption
  - Unable to digest fats and protein
Etiology and Pathophysiology

- Autosomal recessive trait
- Diagnosed in early childhood- sweat test, fecal fat, CXR
- Life expectancy 30 yrs
- History
  - Frequent respiratory infections
  - Respiratory impairment-dyspnea, clubbing
  - Nutrition- frothy, foul smelling stools (steatorrhea), meconium ileus
Nursing Care of the Child with CF

- **Respiratory**
  - Monitor for distress
  - Pulmonary toilet-antibiotics and bronchodilators, CPT and postural drainage

- **Nutrition**
  - Infants progestimil or nutramigen
  - Provide high calorie high protein diet and snacks
  - Pancreatic enzymes with all meals

- **Medications**
- Encourage physical activity and exercise to loosen secretions and promote lung expansion

- **Genetic Counseling**
Bronchopulmonary Dysplasia (BPD)

- Chronic obstructive pulmonary disease in infants after prolonged O2 therapy and mechanical ventilation
- Damaged bronchial epithelium and alveoli, scarring, fibrosis
  - Atelectasis
  - Poor airway clearance and gas exchange
  - Chronic low oxygenation results, decreased lung compliance and altered function
Assessment

- Dx - CXR, air trapping, hyperinflation
- Blood gases- hypercapnia and respiratory acidosis
- Tachypnea, barrel chest, tachycardia, retractions
- Pallor, activity intolerance and poor feeding
Asthma

• Chronic inflammatory disorder in which airways narrow and are hyper reactive to stimuli
• Bronchial spasm, increased airway resistance, air trapping, exhaustion
• Familial tendency
• Triggers - inhalants, airborne pollens, stress, weather changes, exercise, viral or bacterial agents, food additives
Nursing Care of the Child with Asthma

- Teach preventive measures
  - Correct use of bronchodilators and corticosteroids
  - Assist with eliminating allergens, triggers
  - Avoid extreme changes in weather
  - Correct use on inhalers, MDIs, Peak flow meters
Nursing Care of the Child with Asthma

• Assist family with selecting activities appropriate for the child’s abilities and preferences

• Teach family to recognize early symptoms of impending attack and implementation of appropriate measures
Treatment of Acute Episodes

- Respiratory assessment and support
- Administer O2 and treatments prn
- IV access/ administer fluids
- Position high Fowler’s
- Cluster nursing care to conserve energy
- Family Support - reassurance
Acute laryngotracheobronchitis

- Viral infection - inflammation, edema, narrowing of larynx, trachea, bronchi
- Preceded by URI - para influenza A&B, RSV, mycoplasma pneumoniae
- Most common of Croup syndrome in infants and toddlers, boys > girls,
Assessment

- Inspiratory stridor, suprasternal retract.
- Increased production of thick secretions and edema
- Hypoxia, resp acidosis

- Gradual onset after URI
- Low grade fever, barking cough, acute stridor, noisy breathing use of accessory muscles
- Agitated, restless, sore throat, rhinorrhea
Epiglottitis

- Inflammation of the epiglottis usually caused by h. influenzae
- Sudden onset, life threatening
- Epiglottis cherry red, swollen, obstructs the airway
Assessment

- Sudden onset high fever, sore throat, pain on swallowing
- Child anxious, restless, tripod positioning
- Dysphonia, dysphasia
- Do not visualize throat
- Emergency intubation equipment available
- Tx- antibx, corticosteroids, antipyretics
**Bronchiolitis**

- Inflammation of bronchioles with edema and increased accumulation of mucous
- Air trapping, atelectasis
- Major reason for hospitalization in infants
- RSV primary cause
Assessment/Treatment

• Tachypnea, retractions, low grade fever, anorexia, thick nasal secretions, labored breathing, cough, wheezes, crackles

• Ribovirin

• Bronchodilators, steroids
Pneumonia

• Primary or secondary condition

• Viral
  – Fever, nonproductive cough, rhinitis
  – RSV

• Bacterial
  – High fever, productive cough, ill appearance
  – Mycoplasma pneumonia

• Symptoms
  – Retractions, grunting, chills, chest pain, anxiety
NCP: The Child with Respiratory Infection

- Ineffective breathing pattern r/t inflammation, pain
  - Promote rest, reduce anxiety
  - Position for comfort- high fowlers
  - Provide high humidity, provide O2 prn
  - Cluster activities
NCP: The Child with Respiratory Infection

- Ineffective airway clearance r/t pain, obstruction, secretions or inflammation
  - Suction prn, bulb suction a BS
  - Avoid neck hyperextension
  - Ensure adequate fluid intake, IVF
  - Assist with nebulization, expectorating sputum
  - Administer and evaluate pain control measures
NCP: The Child with Respiratory Infection

• High risk for injury r/t presence of infectious organisms
  - Administer antibiotics as prescribed
  - Wash hands before and after care
  - Implement appropriate isolation as needed
  - Assess temperature and administer antipyretics as necessary