Oxygenation Skills

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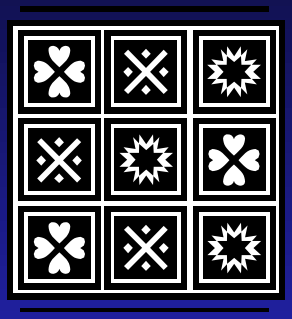
The Nursing Process:

- Start with **Assessment**:
  - Subjective/objective data
- Nursing **Diagnosis**
  - Identify problems
- **Planning**
  - Goals/interventions
- **Implementation**
- **Evaluation**

Focused Respiratory Assessment:

- Look for signs of dyspnea/hypoxia
- Ask about cough/sputum/breathing
- Monitor vital signs, O_2 saturation
- Observe and auscultate chest
- Utilize respiratory and pain interventions ordered by physician
- Evaluate effectiveness of interventions

Interventions to Improve Oxygenation:



- Comfort and reassure patient
- Promote relaxation and cooperation
- Non-pharmacological interventions
- Pharmacological interventions

General Comfort and Positioning:

- Elevate Head of Bed or use sitting position
- Maintain adequate fluids and nutrition
- Position patient as comfortably as possible
- Provide effective pain management

Non-pharmacologic Interventions:

- Incentive Spirometer
- Coughing and deep breathing
- Hydration of secretions
- Postural drainage
- Chest physiotherapy
- Involve family, considering culture and beliefs

Patient Teaching:

- Coughing and Deep Breathing
- Incentive Spirometry
- Prepare surgical patients for pain assessments
- Anticipatory Guidance

Pharmacologic Interventions:

- Expectorants, Mucolytics
- Antitussives/Cough suppressants
- Bronchodilators (inhalers or nebulizers)
- Pain medication (especially surgical patients)
- Medications for chronic respiratory conditions

Oxygen Therapy:

- Use nasal cannulas, catheters, masks
- Wall oxygen, tanks, or concentrators
- Control liters per minute with flowmeter and O2 concentration FiO_2
- Hyper-oxygenate patients prior to suctioning
- Use lower flow rates if patient is a CO_2 retainer

Artificial Airways:

- Nasal Airway
- Oral Airway
- Endotracheal tube
- Tracheostomy

Be sure to keep the openings clear- potential for obstruction exists

Suctioning Skills:

Suction only as needed, not on a routine basis.

- Oral Suctioning
- Tracheostomy Suctioning
  - Use of Ambu bag
  - Care of tracheostomy
- Suctioning of ET (Endotracheal) tube
  - Inline suctioning of ventilator patient

Catheter Selection:

- Choose catheter size based on airway size and sputum thickness
  - Adult size is usually 12-16 Fr.
  - Pediatric size is usually 8-10 Fr.
  - Newborn size is usually 6-8 Fr.

Vacuum Pressure Selection:

- Wall Unit suction:
  - Adult: 100 to 120 mm Hg
  - Child: 95 to 110 mm Hg
  - Infant: 50 mm Hg
- Portable Suction Unit:
  - Adult: 10 to 15 mm Hg
  - Child: 5 to 10 mm Hg
  - Infant: 2 to 5 mm Hg

Additional Assessments and Interventions:

- Arterial Blood Gases
- Postural Drainage
- Chest P.T. (Physiotherapy)
- Thoracentesis
- Chest Tube
- CPAP or BiPAP
- Mechanical Ventilation

Chest Tubes:

- Assist with insertion and removal
- Monitor respiratory status/drainage
- Check for secure, occlusive dressing
- Maintain functioning gravity drainage system with no loops or kinks
- Keep 2 clamps at bedside in case the unit needs changing

Thoracentesis:

- Explain procedure/obtain signed permit
- Position patient/observe for reactions
  - Patient sitting on edge of bed with elbows propped
  - If unable, lie on unaffected side, raising hand of affected side
- Prepare lab specimen, evaluate and document patient's response

Pre-skill Organization:

- Wash hands
- Introduce yourself
- Observe the patient and the situation
- Listen to patient and answer questions
- Explain what you will be doing
- Assemble equipment

Skill Completion:

- Keep patient comfortable as possible
- Check oxygenation and administer oxygen as prescribed/needed
- Evaluate results of intervention and how the patient tolerated the procedure
- Wash hands
- Finish documentation

Assessment Variables:

- Concurrent illness or chronic illnesses
- Type of airway
- Dementia, sensory impairment, or inability to express needs
- Age
  - Pediatric patients
  - Frail, elderly patients

Pediatric Oxygenation

- Blood oxygen drops quickly
- Different sizes and types of oxygen equipment
- Use developmentally appropriate language
- Teach parents about equipment, CPR, support services and safety factors

Respiratory Care of Elderly Patients

- Physiological changes in lungs and chest
- Less productive coughing
- Drier mucus membranes
- Respiratory problems limit independence
- Increased risk for pneumonia and other respiratory diseases

Critical Thinking:

- 3 year old boy with a tracheostomy had O_2 saturation of 85%. Oxygen was started and then 89% sats. He was anxious, with resp. rate of 38. There were no abnormal lung sounds. The tubing was not kinked or blocked with water, and the oxygen was flowing. What would you do next if you suspected a mucus plug in trach?

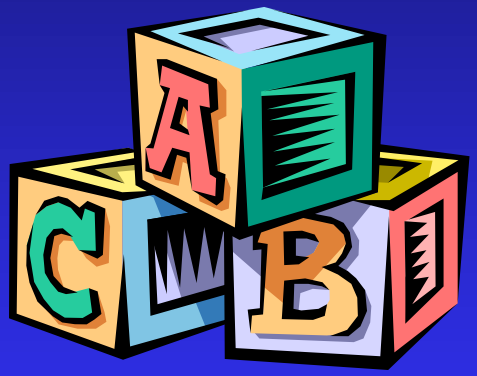
Critical Thinking: ?

- You began a focused respiratory assessment on your elderly patient. You have completed the Vital Signs, but have not listened to the lungs yet. She became dyspneic, cyanotic, and had loud, audible crackles from excess secretions. Do you complete your assessment, or begin suctioning?

Respiratory Blended Skill:

- Your patient is a 77 year old woman with asthma exacerbation, pneumonia, HTN, Diabetes Mellitus II, and GERD
  - Do focused respiratory assessment
  - Effective Communication
  - Interventions to promote oxygenation
  - Evaluation and Documentation

Reflection:



- There is a lot more to the ABC's than you thought!
  - Airway
  - Breathing
  - Circulation
- Understanding oxygenation skills gives you more of the foundation you need for excellent patient care

This presentation was created in 2004.