

**IMPAIRED SPONTANEOUS VENTILATION**

related to home ventilation therapy

**Definition**

*Decreased energy reserves result in an individual's inability to maintain breathing adequate to support life*

**Assessment**

- Age and sex
- Health history, including previous respiratory problems, neurologic or neuromuscular disease, and recent hospitalization
- Respiratory status, including rate and depth of respiration, chest excursion and symmetry, presence of cyanosis, use of accessory muscles for respiration, effectiveness of cough, suctioning demands, and sputum characteristics
- Neuromuscular strength and endurance
- Mental and emotional status, including cognitive state and ability to follow directions
- Functional status, including ability to perform ADLs
- Family status, including usual coping patterns, family roles, communication patterns, financial resources, effect of patient's illness on family, and beliefs and attitudes about health, illness, death, and other issues
- Home environment, including electrical safety, availability of hot water, house layout, lighting, and fire hazards
- Knowledge of safety precautions

**Defining Characteristics**

- Apprehension
- Decreased arterial oxygen saturation
- Decreased cooperation
- Decreased partial pressure of oxygen
- Decreased tidal volume
- Dyspnea
- Increased metabolic rate
- Increased partial pressure of arterial carbon dioxide
- Increased restlessness
- Increased use of accessory muscles of respiration
- Tachycardia

**Expected Outcomes**

- Patient will exhibit clear breath sounds.
- Patient won't exhibit signs of respiratory distress or infection.
- Patient will incorporate mechanical ventilation into ADLs and family life.
- Patient will demonstrate adequate use of communication aids.
- Patient will remain free from complications.

- Caregiver will demonstrate ease in using equipment and procedures to keep patient comfortable and free from infection.
- Caregiver will implement and maintain safety measures for using oxygen in home.

### **Suggested NOC Outcomes**

*Respiratory Status: Gas Exchange; Respiratory Status: Ventilation; Vital Signs*

### **Interventions and Rationales**

- Ascertain what the patient and family members know about home ventilation therapy *to determine what the patient needs to learn. Building on current knowledge enhances learning.*
- Teach the patient and family members the setup, use, and care of all parts of the equipment *to promote independence and decrease anxiety.*
- Explain the meanings of ventilator alarms and what to do if alarms sound *to help reduce anxiety and minimize complications.*
- Explain how to get help in case of emergency *to decrease the potential for injury.*
- Emphasize the importance of the patient's involvement in family activities, even though he's on mechanical ventilation, *to increase the patient's sense of well-being.*
- Emphasize to family members that the patient needs to be attended to at all times *to ensure ongoing care.*
- Demonstrate to family members how to clean and disinfect equipment *to ensure that the patient doesn't develop an infection.*
- Teach home oxygen safety *to avoid fire or injury to the patient and family members.*
- Inform the patient and family members about signs and symptoms of complications, such as atelectasis, fluid overload, respiratory infection, and tension pneumothorax. Encourage immediate reporting of complications *to ensure early intervention for respiratory distress.*

### **Suggested NIC Interventions**

*Airway Management; Mechanical Ventilation; Respiratory Monitoring; Vital Signs Monitoring*

### **Evaluations for Expected Outcomes**

- Patient has clear breath sounds.
- Patient doesn't exhibit respiratory distress or infection.
- Patient incorporates mechanical ventilation into daily life.
- Patient demonstrates use of communication aids.
- Patient remains free from complications.
- Caregiver demonstrates ease in using equipment and procedures to keep patient comfortable and free from infection.
- Caregiver implements and maintains safety measures for using oxygen in home.

### **Documentation**

- Assessment results, such as vital signs and breath sounds
- Checks of ventilator settings, alarms, and backup equipment

- Arterial blood gas analysis results
- Patient's response to respiratory treatment
- Patient's response to nursing interventions
- Patient teaching and patient's and family members' responses to teaching
- Evaluations for expected outcomes

**REFERENCE**

Ballangrud, R., et al. "Clients' Experiences of Living at Home with a Mechanical Ventilator," *Journal of Advanced Nursing* 65(2):425–34, February 2009.