

B-270 R Management of Home Ventilators

Purpose

Provide guidelines for home health nurses and other caregivers who care for ventilator dependent clients.

Promote safety in management of high tech care in the home setting.

Promote self care in the home.

Applies To

Registered Nurses

Licensed Practical/Vocational Nurses

Other (*Identify*): _____

Guidelines

- Caregivers who are willing and able to help with client care needs are necessary for discharge to the home setting.
- Individual manufacturers of home ventilator equipment have handbooks for recommendations on safe use in the home.
- Prior to discharge the home care team including the home vendor and respiratory therapist participate in establishing the plan.
- All family and care giving staff must be familiar with ventilator alarms and how to appropriately respond.
- The client/caregivers are instructed in how to use the manual resuscitation bag.
- A backup electrical or battery source should be available and local utility companies notified of the client home needs.

Equipment/Supplies

- Ventilator and associated circuits, filters, and tubing.
- Heated humidifier or cascade.
- External 12 volt battery and cord.
- Ambu bag.
- Disinfectant (as defined in infection control guidelines and policy).
- Air compressor and tubing for aerosol treatments (see separate procedure).
- Tracheostomy equipment and supplies.
- Communication aids.
- Equipment as needed for bowel, bladder and personal care such as hospital bed, wheelchair, commode and/or bedpan.

Procedure

Assessments to be performed at start of care and at regular intervals during client care:

1. Clinical assessment including observation of respiratory effort, color, secretions (color and odor if present) vital signs, client concerns, anxiety level, sleep patterns, skin condition, nutrition and fluid status, neuro status, and signs and symptoms of infection or mechanical concerns.
2. Assess oximeter readings, blood gases and electrolytes as indicated.
3. Assess ventilator settings and effectiveness of plan of care.
4. Perform a safety check on the equipment:
 - a. Tubing - drain water from tubing, check connections, and check tubing for leaks or cracks. Change as needed.
 - b. Evaluate whether cleaning and changing procedures are followed per plan.
 - c. Assess mode of delivery:
 - **Control Mode:** (CM) Preset volume at a fixed rate. Client does not initiate breaths or changes in rate.
 - **Assist Control:** (AC) Allows client to initiate breaths and rate varies as client is able to initiate. Each breath is delivered at the same tidal volume (preset).
 - **Intermittent Mandatory Ventilation:** (IMV) Preset number of breaths per minute by ventilator, but client can also breathe with no assistance from machine at his own tidal volume.
 - **Synchronized Intermittent Mandatory Ventilation:** (SIMV) Ventilator senses client breath and synchronizes mechanical breath at same time.
 - d. Assess Alarm Settings:
 - **Low Pressure:** If pressure falls below this limit, alarm will sound. This happens when client becomes disconnected from machine.
 - **High Pressure:** If pressure goes above set limit, alarm will sound. Can be caused by excessive secretions, coughing, kinked tubing, and mucous plugs.
 - e. Assess other machine settings, oxygen settings, and oxygen source.
5. Information must be present in the home that includes troubleshooting guidelines, emergency phone numbers, and guidelines for emergency intervention.
6. Back-up systems are in place in case of mechanical or electrical failure.
7. Caregivers should be trained in cardiopulmonary resuscitation (CPR),

Documentation Guidelines

1. Document in clinical record:

- a. Ventilator settings or any changes made. Note pressures and pressure limit settings.
- b. Any teaching done with family or client.
- c. Any procedures performed such as oximetry readings, blood draws, or suctioning.
- d. Care coordination activities including contact with physician and/or other members of health care team.
- e. Any other pertinent findings or concerns.

Pediatric Considerations

Types of ventilators used for infants and children fall into two categories:

- Invasive/noninvasive positive pressure ventilators, and noninvasive negative pressure devices.
- Positive pressure ventilation supports the respiratory system by pushing air into the lungs and holding pressure for a pre-determined time per physician orders and then permitting pressure levels to return to baseline. Positive pressure can be delivered via tracheostomy tube or mask and can be provided by volume controlled, pressure controlled equipment.
- Equipment is available to promote mobility of the child and routines as normal as possible.

Related Procedures

Oxygen Therapy, Postural Drainage, Pulse Oximetry, Suctioning

Policy History

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