



Ventilator Management

Policies & Procedures

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TABLE OF CONTENT

Policy / Procedure	Page
VENTILATOR MANAGEMENT.....	3
Scope	3
When.....	3
Who	3
Purpose.....	3
Assessment.....	4
Risks of mechanical ventilation.....	4
Monitoring	4
Definitions	5
Ventilator management guidelines	6
Ventilator management responsibilities of employees	6
Key management responsibilities when supervising employees supporting patients with ventilators	6
Documentation.....	7
Further Advice or Assistance	7
Effectiveness and Review.....	7

VENTILATOR MANAGEMENT

Scope

When

- Applies when clients are supported who require mechanical ventilation

Who

- Applies to all employees, supervisors and key management personnel supporting client's with mechanical ventilation needs

Purpose

A mechanical ventilator is a machine that helps people breathe when they are not able to breathe enough on their own. Also called a respirator or breathing machine, a ventilator is used to:

- Get oxygen into the lungs and body
- Help the body get rid of carbon dioxide through the lungs
- Ease the work of breathing – some people have difficulty breathing on their own
- Breathe for a person who is not breathing because of injury to the nervous system, like the brain or spinal cord or who has very weak muscles

This policy aims to ensure:

- Evidence based standards of care are provided for safe and efficient management of mechanically ventilated clients
- The needs, comfort and goals set for the patient with acute ventilator or respiratory failure are met
- Every patient requiring ventilator management receives appropriate support relevant and proportionate to their individual needs and the specific ventilator used

When a person breathes normally (spontaneous breathing) the diaphragm contracts on inhalation, moving toward the abdomen, and the chest wall expands. The space inside the thorax enlarges creating a vacuum that draws air into the lungs and helps to distribute the air evenly. In contrast, a ventilator pushes a warm, humidified mixture of oxygen and air into the lungs and creates positive pressure in the thorax during inhalation.

The correct care of a person who relies on mechanical ventilation is critical as they are at a greater risk of death or harm if inadequate or inappropriate care is provided.

Key management personnel must ensure workers follow this policy and that clients have person centred ventilation management plans.

Assessment

As part of the service entry process, a detailed assessment is required for a client with ventilation needs. Family presence is recommended for the assessment meeting for additional information and support. This is especially important when verbal communication is difficult. It is important to determine the level of care required. Close liaison should be maintained with the multidisciplinary team including specialist nurses, physiotherapists, speech therapists and doctors. A coordinated team approach is best practice for this specialised area of care.

There must be a documented plan for assessment, management and review for each individual client using a ventilator. The type of detail to evaluate at initial assessment includes, but are not limited to, the following:

- Client history – the level of self-care management the client is able to:
 - Learn the ventilator settings and understand what the alarm might mean
 - Can they change their own tube?
 - How well are they able to clear their own secretions by coughing?
 - Can they swallow?
- If they have a tracheostomy?
- If they have a larynx?
- Do they have a connection between oral airway and lungs?
- Communication strategy e.g., verbal, non-verbal, pen and paper, communication board or voice synthesiser
- Type and size of tracheostomy tube and when a routine change of tube is required
- Oxygen dependence
- How often is suction required
- Routine observations

Risks of mechanical ventilation

There are many problems that can develop from ventilator use including:

- Infections such as pneumonia – the ET or trach tube allows bacteria to get into the lungs more easily
- Collapsed lung (pneumothorax) – a part of a lung that is weak and can become full of air and start to leak into the chest wall which causes the lung to start to collapse
- Lung damage – the pressure of putting air into the lungs with a ventilator can damage the lungs – this is why health professionals should set the ventilator to the lowest amount of pressure needed
- Side effects of medications – sedatives and pain medications can cause a person to seem confused or delirious while other medications to prevent muscle movement can cause muscle weakness
- Inability to stop using ventilator support – if a person's conditions do not improve, long term reliance on ventilation may be required

Monitoring

People who rely on mechanical ventilation often require monitoring. Devices for monitoring include pulse oximeter (measures oxygen level and heart rate) or apnea monitor (measures heart rate and breathing rate). The persons medical practitioner will determine the need for monitoring and what ventilation adjustments are required.

Definitions

Term	Definition
Cannula	A small tube for insertion into a body cavity or into a duct or vessel to drain fluid or administer a substance such as a medication
Cyanotic	A bluish or purplish discolouration of the skin or mucous membranes due to the tissues near the skin surface having low oxygen saturation
ETT	Endotracheal tube – a flexible plastic tube placed through the mouth into the trachea (windpipe) to help a patient breathe which is then connected to a mechanical ventilator
Extubation	The removal of a tube especially from the larynx after intubation
FiO2	Fraction of inspired oxygen – the oxygen content of the air a person breathes
Hypoxia	A deficiency of oxygen reaching the tissues of the body
Intubation	An (endotracheal) intubation is where a tube is placed into the windpipe (trachea) through the mouth or nose. In most emergency situations, it is placed through the mouth
PEEP	Positive end expiratory pressure – the maintenance of positive pressure within the lungs at the end of expiration (breathing out)
PPE	Personal protective equipment – clothing or equipment worn to protect from risk of injury or illness. E.g. gloves, apron, face mask or ear muffs
RRT	Rapid response team – a team of healthcare professionals who bring critical care knowledge to the patient's bedside
Respiratory rate	The number of breaths per minute that the ventilator delivers
Tachypnoea	Abnormally rapid breathing
Tidal volume	The volume of gas, either inhaled or exhaled, during a breath
Ventilator	A mechanical ventilator is an artificial breathing machine which pumps oxygen into the lungs through a tube. May people with tracheostomies also need the help of a ventilator to breathe when sleeping, some of the time or all the time

Ventilator management guidelines

- Clients requiring ventilation will only receive support from employees trained and proficient in ventilator management
- Ventilator and bedside alarms must be on at all times – never leave a client unattended with alarms turned off
- Suction equipment, oxygen and manual ventilation device (MVD) and masks must be readily available at the bedside of all clients with artificial airways
- Intubation supplies must be readily accessible for all patients with artificial airways
- The decision to wean a client from ventilation support should only be made by a qualified health professional
- Maintain all ventilatory and monitoring equipment according to the manufacturers instructions at all times in order to reduce the risk of failure

Ventilator management responsibilities of employees

Clients that rely on ventilation are at greater risk of pneumonia (chest infection).

Providers are responsible to care for and ensure clients are safe. This includes employees to:

- Read and understand this policy before providing support to ventilated clients
- Complete all required competencies and training before providing support to ventilated clients
- Work within their scope of practice and qualifications
- Wear appropriate PPE at all times
- Be competent in setting appropriate alarm settings
- Respond immediately to an audible ventilator alarm and assess the client for respiratory distress or disconnected ventilator
- Suction as required both orally and via the artificial airway
- Ensure the securement device goes around the head/neck and is comfortable for the patient
- Follow instructions of the responsible clinician which include:
 - Set up of the mechanical ventilator, accessories and tubing specific to clients needs
 - Set up of in-line suction for ventilated clients
 - How to initiate ventilation, set the alarms and provide adjunctive ventilator equipment
 - Setting the ventilation parameters based on the clients ideal body weight and medical condition
 - Adjusting ventilator settings in conjunction with the medical practitioners orders
 - Monitor the ventilator and patient after setting changes and after reinitiating ventilator i.e. post transport
- Be knowledgeable of current and prescribed ventilator settings
- Follow the medical practitioner's orders promptly with other relevant team members
- Assess the client at regular intervals as directed by a medical practitioner
- Collect blood gases if ordered and arterial line is present

Key management responsibilities when supervising employees supporting patients with ventilators

- Ensure employees have current knowledge and a training plan to learn the standards of care for clients that require mechanical ventilation

- Provide employees education to provide excellent and confident care
- Ensure employees follow and comply with the Manage Ventilator process
- Ensure employees know how to activate emergency support
- Ensure emergency airway equipment is available at all times including resuscitation bag and airway equipment
- Ensure service coordinators have accreditation in Basic Life Support
- Regularly audit safe ventilator management practices
- Document all ventilator related interventions, assessments and care provided in an observation chart including any abnormal findings
- Consider whether the client needs physical restraints to prevent accidental removal of the ETT/tracheostomy tube

Documentation

Employees must keep clear and legible records on clients with ventilators. This should include:

- Type, size and location of airway
- Level of endotracheal tube (ETT) at the teeth/gum once a shift, after any adjustments and daily in any case
- Ventilator settings at the onset of the shift, q4h and with any change in orders or patient's condition
- SaO₂ and ETCO₂ quarter hourly and with any change in orders or clients condition
- Amount, consistency and colour of tracheal secretions after each suction session on the flow sheet
- Unexpected outcomes and interventions

Further Advice or Assistance

Further advice and information can be obtained from the:

» Complaints Handling Officer:

- by phoning: 07 4361 6848;
- by emailing: admin@123supports.com

Effectiveness and Review

The Director will review this Policy and Procedures document each 12 months on the anniversary of its approval.