

	Policies & Procedures Title: VENTILATION ASSISTANCE - MANUAL VENTILATION DEVICE I.D. Number: 1027
Authorization [X] SHR Nursing Practice Committee	Source: Nursing Date Revised: September 2014 Date Effective: February 2001 Scope: SHR & Affiliates

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Definition: The manual ventilation device (MVD) consists of a self-inflating bag with a non-rebreathing valve and an attached oxygen reservoir.

- Infants – less than 10 kg – 250 ml – 500 ml bag
- Pediatric – infants and children up to about 6 years of age – 500 ml bag
- Adult – for ages 6 years and older –1600 ml bag

Ventilation is as per current Heart and Stroke Foundation – Canada Guidelines – BCLS, ACLS, PALS, NRP

1. PURPOSE

- 1.1 To effectively and safely use a manual ventilation device.

2. POLICY

- 2.1 The Registered Nurse (RN)/Registered Psychiatric Nurse (RPN) / Graduate Psychiatric Nurse (GPN) /Graduate Nurse (GN)/ Licensed Practical Nurses (LPN) / Graduate Licensed Practical Nurses (GLPN) will have the knowledge of the set-up and use of a manual ventilation device.
- 2.2 Manual ventilation can be initiated by an RN/RPN/GPN/GN/LPN/ GLPN upon a prescriber's order or when judged to be necessary.

Note: An RN/RPN/GPN/GN/LPN/ GLPN may administer high concentrations of oxygen during an adult cardiorespiratory arrest.

Note: Resuscitation of neonates begins with room air and oxygen is delivered according to oxygen saturation to prevent neonatal morbidities.

- 2.3 MVDs will be kept assembled in Code Blue Carts on all patient care areas, and elsewhere as required.

Note: Oxygen tubing and flow meter must be readily available.

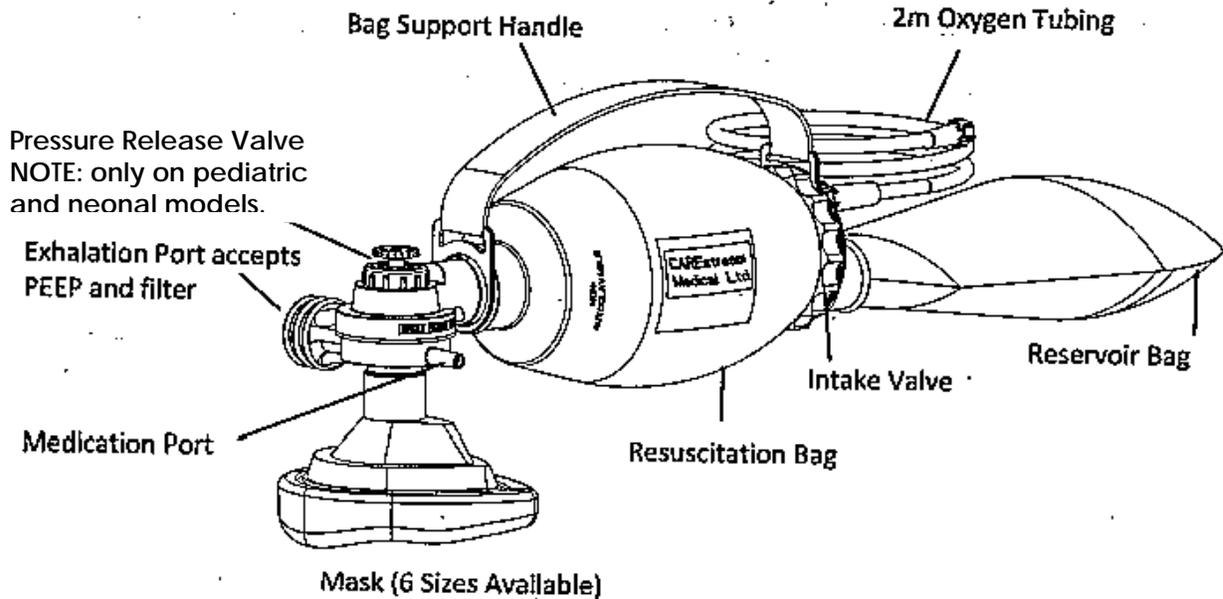
3. PROCEDURE

3.1 Equipment:

- MVD with the appropriate size mask (it does not cover the patient's eyes and does not extend beyond the chin)
- Oxygen flow meter and tubing
- Suction supplies
- Oral or nasopharyngeal airway of appropriate size (optional)
- Appropriate size adapter when the patient has a metal tracheostomy tube
- PPE – clean gloves, mask with face shield.

3.2 Assemble MVD as per diagram. Secure the connectors with a "twist" so the unit does not come apart during use.

Note: If there is a PEEP valve on or included with the device, ensure it is set to zero before beginning to ventilate patient.



3.3 Connect oxygen tubing from the oxygen nipple on the MVD directly to the oxygen flow meter.

3.3.1 Verify oxygen source in wall outlet by label and color: green and white for oxygen vs. black and white for medical air.

3.4 Set the flow meter to flush (15 liters/min or more - for neonates 5 - 10 liters/min) and allow the reservoir bag to fill.

Note: The reservoir bag must remain inflated to deliver 100% oxygen. Adjust flow rate to ensure the reservoir remains at least 2/3 inflated at all times.

Note: For neonates: the reservoir and oxygen tubing may be removed as appropriate for lower oxygen concentrations.

3.5 Position the patient supine and flat unless contraindicated and ensure airway is patent.

3.6 To manually ventilate or assist ventilations in a patient with an unprotected airway:

3.6.1 Open the airway with a head tilt / chin lift as per BCLS or NRP standards

Note: An appropriate size oral or nasopharyngeal airway can be inserted to hold the tongue forward to maintain an open airway. If the airway stimulates a gag reflex, remove it. See Related Policies: Airway – Oropharyngeal: Insertion; Maintenance; Suction; Removal #1159; Airway – Nasopharyngeal: Insertion Of; Maintenance; Suction; Removal #1064; and Tracheostomy Care #1184.

Note: When opening an infant's airway, exercise caution not to hyperextend the neck. The 'sniffing' position is desired for optimal ventilation.

Note: In patients with suspected or known spinal injuries, immobilize the head and neck and open the airway with the jaw thrust maneuver.

3.6.2 Suction to clear airway if needed during use of device.

3.6.3 Apply the mask firmly over the patient's nose and mouth to create an adequate seal while maintaining an open airway.

3.6.3.1 One Person Technique ('E-C' method): with dominant hand, place three fingers on the mandible, keeping the head slightly hyperextended. Place thumb and one finger in C position around the mask, pressing hard enough to form a seal on the patient's face.

3.6.3.2 Two Person Technique: First person holds the mask and maintains the airway. Second person compresses ventilation bag.

3.7 To manually ventilate or assist ventilation in a patient with an endotracheal tube or a cuffed tracheostomy tube:

3.7.1 Ensure the cuff is inflated adequately to seal the airway.

3.7.2 Remove the mask from the MVD and connect the device directly to the tube.

Note: Metal tracheostomy tubes require an adaptor to attach the MVD device.

3.8 To manually ventilate or assist ventilation in a patient with an uncuffed tracheostomy or endotracheal tube, remove the mask from the device and attach the MVD directly to the tube. There will always be some air leak around the tube. If unable to ventilate adequately:

3.8.1 For personnel certified to change tracheostomy tubes, remove occluded tracheostomy tube and replace with appropriate tracheostomy tube unless contraindicated.

3.8.2 If patient's upper airway is patent, occlude the tracheostomy tube with a trach plug or gloved finger and place the mask over the nose and mouth. Ventilate.

3.8.3 If patient's upper airway is not patent, (i.e. Laryngectomy) continue to ventilate directly to the tracheostomy tube until a cuffed tracheostomy tube can be inserted.

Note: See Related Policies: Airway – Oropharyngeal: Insertion; Maintenance; Suction; Removal #1159; Airway – Nasopharyngeal: Insertion Of; Maintenance; Suction; Removal #1064; and Tracheostomy Care #1184. to determine which items should be stored at the patient's bedside to facilitate proper airway management of patients with tracheostomy tubes.

3.9 Using non-dominant hand, ventilate at the rate set by the current Heart & Stroke standards or as warranted by the patient's clinical condition. Deliver each breath over 1 second to decrease the risk of gastric distention. There should be visible chest rise with each ventilation.

3.10 Assess the patient by:

- Observing for chest expansion
- Auscultating the chest for bilateral air entry
- Monitoring for gastric distention
- Observing for signs of clinical improvement
 - Improved color
 - Increased level of consciousness
 - Improved respiratory effort
 - Improved SpO₂ and ABG values
 - Stable vital signs

3.11 If unable to ventilate, reassess by:

- Readjusting mask
- Repositioning airway (head tilt / chin lift or jaw thrust)
- Suctioning airway

Note: Neonatal and Pediatrics: *Circumstances may warrant over-riding the preset pressure – limiting device (30 – 35 cm H₂O) to achieve effective ventilation. Give controlled volumes to prevent barotrauma.*

3.12 Documentation:

- Time of initiation of manual ventilation
- Rate of ventilation
- Oxygen flow rate
- Vital signs (BP, P, RR, SpO₂)
- Chest auscultation
- Patient's color and level of consciousness
- Presence of gastric distention and interventions
- Suctioning of patient

3.13 Send non-disposable devices to SPD for cleaning.

4. REFERENCES

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