

## PASSY MUIR VALVE (PMV) USE IN LINE WITH THE VENTILATOR

### *Staff this document applies to:*

Medical Staff, Nurses, Speech Pathologists, Physiotherapists on all campuses, including ICU and in the community.

### *State any related Austin Health policies, procedures or guidelines:*

[Passy Muir Valve \(PMV\) Use In Spontaneously Breathing Patients](#)

[Use of Portex Suctionaid Tracheostomy Tube](#)

[Tracheostomy Learning Package: Use of the Passy-Muir Valve](#)

[Tracheostomy Cuff Deflation and Reinflation](#)

[Stridor in Adults](#)

### *Definition:*

The PMV is a one-way valve that opens upon inspiration and closes completely upon expiration. It fits the 15mm hub of any standard tracheostomy tube. A valve is always used with the cuff fully deflated and can be used with spontaneously breathing patients or in line with the ventilator circuitry.

### *Rationale:*

A one-way valve restores airflow through the upper airway which facilitates voicing, coughing, swallowing, return of sensation, and smell <sup>1,2,3,4,5,6</sup>

### *Clinical Alert:*

- It is essential that the patient is adequately ventilated. Ventilator adjustments may be required to compensate for the leak of air created when the cuff is deflated.
- The cuff must be fully deflated when the PMV is placed in line with the ventilator circuitry. Using a valve with an inflated cuff may cause barotrauma or fatal respiratory arrest.
- At Austin Health the PMV (#007 Aqua) is the only type of one-way valve which is used in line with the ventilator.
- If a patient arrives with a valve from another manufacturer remove the valve and contact the unit Speech Pathologist.
- PMV should be removed when:
  - The patient is sleeping.
  - The patient exhibits respiratory distress +/- stridor including increased work of breathing.
- Do not place the valve in line under the following circumstances:
  - Increased or copious secretions.
  - Upper airway obstruction.
  - Difficulty passing a suction catheter.

- Severe coughing.
- Unstable cardiorespiratory status.
- With a Bivona Fome-Cuf tracheostomy tube.

### **Who is authorised to perform this procedure?:**

- Medical, Nursing and Allied Health staff trained in this procedure can perform routine use of the PMV in line with the ventilator.
- Initial PMV in-line trials are conducted by the Speech Pathologist with a Physiotherapist or Nurse with specialist training in this area, after consultation with the treating medical unit.
- Outside business hours, senior medical staff in ICU with training in voicing options for ventilated patients, can place the PMV in-line for patient assessment. During business hours, the Speech Pathologist and Physiotherapist will conduct a formal assessment and establish schedule for routine use as indicated.

### **Expected Outcome:**

- The patient will safely and comfortably use the PMV in line with the ventilator.
- The patient will be able to voice, cough, clear secretions and swallow saliva with increased ease.
- The patient will wear the valve as per the schedule and adjusted ventilator settings established by the Speech Pathologist and Physiotherapist respectively.

### **Equipment:**

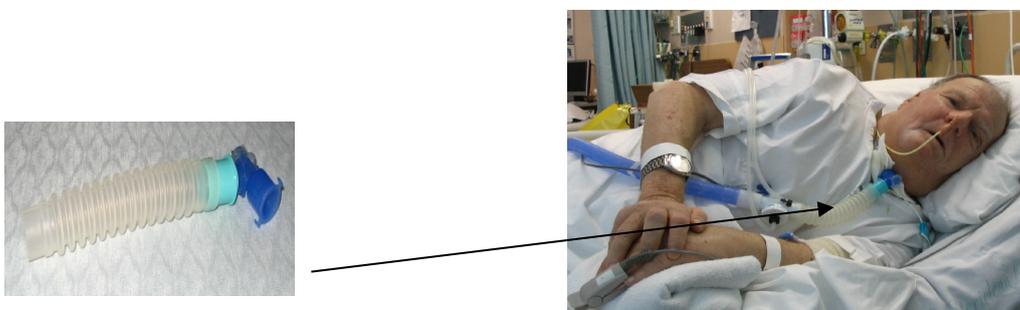
- Standard flex tubing (wide mouthed), PMV and swivel connector as per Figure 1.
- Clean gloves.
- Suction catheters and Yankauer sucker.
- 10ml syringe (non-Luer lock).
- Goggles (protective eyewear).
- Pulse oximeter during initial sessions or if patient status changes.

### **Procedure:**

1. Explain the procedure to the patient.
2. Note baseline measures: HR, breathing pattern, respiratory rate, measured airway pressure and SpO2 if using oximeter.
3. If a Suctionaid tracheostomy tube is in situ, suction above the cuff and suction the mouth if required.
4. Suction via tracheostomy.
5. Fully deflate cuff and suction trachea simultaneously
6. Ensure cuff is completely deflated using a 10ml syringe.
7. Adjust ventilator settings as per Physiotherapist/ICU Senior Medical staff recommendations documented in medical file/patient chart.
8. Encourage the patient to clear his/her throat, swallow and suction via mouth or tracheostomy if required.
9. To place the PMV in line:
  - remove the swivel connector with tapered flex tubing from the circuit;

- replace with the new swivel connector, PMV with standard flex tubing (see Figure 1).
10. Assess patient tolerance of cuff deflation, the adjusted ventilator settings and PMV in-line by monitoring and comparing baseline observations incl. patient comfort, anxiety, sweating, pallor, respiratory rate, airway pressure, heart rate, SpO2.
  11. Listen to his/her voice, reassure the patient, instruct the patient to clear throat/ swallow as needed.
  12. Once the scheduled time is completed, or the patient shows signs of respiratory distress / fatigue:
    - Remove the PMV, swivel connector with standard flex tubing, replace original swivel connector with tapered flex tubing
    - Return to original ventilator settings
    - Reinflate cuff and check cuff pressure
    - Document the time the PMV was removed and the ventilator was returned to baseline settings

Figure 1



PMV with swivel adaptor placed in line with ventilator circuit.

#### **Post Procedure:**

- Make a file entry stating the amount of time the valve was tolerated.
- Document the outcome of the session including any concerns.

#### **Author/Contributors:**

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#### **Legislation/References/Supporting Documents:**

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