

## SCHEDULED USE OF THE PASSY MUIR VALVE (PMV) 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 who have completed training in the use of the PMV in line.

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

[Scheduled Use of Passy Muir Valve \(PMV\) In Line with the Ventilator – Clinical Instruction Sheet](#)

[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 Management](#)

[Stridor in Adults](#)

### *Definition:*

The Passy Muir Valve (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 PMV is always used with the cuff fully deflated and can be used with spontaneously breathing patients or in line with the ventilator circuit.

### *Rationale:*

A one-way valve restores airflow through the upper airway which facilitates voicing, coughing, swallowing, return of sensation, and smell

### *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. This is to maintain consistency and improve safety.
- 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.
  - When a nebuliser is being delivered
- Do NOT place the PMV 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 scheduled 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. These staff work together to determine appropriate ventilator settings for the patient to use with PMV in line. Settings should be recorded on the ventilator order sheet and/or Clinical Instruction Sheet - Scheduled Use of the PMV in line with the Ventilator, for other staff to use
- 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 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 PMV in line with the ventilator as per the schedule with adjusted ventilator settings established by the Speech Pathologist and Physiotherapist.

### **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. This procedure must be performed by 2 staff members
2. Explain the procedure to the patient.
3. Note baseline measures: HR, breathing pattern, respiratory rate, measured airway pressure and SpO2 if using oximeter.
4. Adjust the ventilator settings as per Physiotherapist / ICU Senior Medical staff recommendations that are documented on the ventilator order sheet and/or the Clinical Instruction Sheet - Use of the PMV in line with the ventilator
5. If a Suctionaid tracheostomy tube is in situ, suction above the cuff and suction the mouth if required.
6. Suction via tracheostomy.
7. Fully deflate cuff and suction trachea simultaneously

8. Ensure cuff is completely deflated using a 10ml syringe.
9. Encourage the patient to clear his/her throat, swallow and suction via mouth or tracheostomy if required.
10. 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).
  - If the patient is ventilator-dependent, consider manually ventilating with AirViva whilst changing the swivel connector with PMV in line, if clinically indicated
11. 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.
12. Listen to his/her voice, reassure the patient, instruct the patient to clear throat/ swallow as needed.
13. Once the scheduled time is completed, or if 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
  - Reinflate cuff and check cuff pressure
  - Return to original ventilator settings
  - Document the time the PMV was removed and the ventilator was returned to baseline settings

Figure 1

**Picture 2: Wide mouth flex tubing (both ends are wide) with PMV in line**



**Wide to wide flex tubing    PMV**



PMV with swivel adaptor placed in line with ventilator circuit.

### **Post Procedure:**

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

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**Disclaimer:** This Document has been developed for Austin Health use and has been specifically designed for Austin Health circumstances. Printed versions can only be considered up-to-date for a period of one month from the printing date after which, the latest version should be downloaded from the hub.

## Legislation/References/Supporting Documents:

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