HOUSTON Methodist LEADING MEDICINE

Respiratory Care Services

☐ **Initial Evaluation** ☐ **Annual Evaluation**

Employee Name:

Employee Number:

Date:

Procedure/Equipment:	**Passy-Muir Application / Passy Muir Ventilator Application**				
Clinical Objective	**Demonstration**	**Explanation**	**DATE**		**COMMENTS**
Passy-Muir® Valve Design					
The Passy Muir® Valve is a device used by tracheostomy and ventilator patients. When placed on the hub of the tracheostomy tube or in-line with the ventilator circuit, the Passy Muir® Valve redirects air flow through the vocal folds, mouth and nose enabling voice and improved communication.					
• Biased Closed Position-No Leak Design					
1. Patented design 2. Opens only during inspiration with minimal, less than .05cm H2O pressure 3. Closes automatically before the end of the inspiratory cycle/beginning of the expiratory cycle. Air is exhaled through the oronasopharynx. 4. No air leakage occurs through the PMV during exhalation 5. A column of air is trapped in the PMV and in the tracheostomy tube that inhibits secretions from entering the tube and occluding the valve 6. Restores a more normal “closed respiratory system” resulting in many clinical benefits 7. Safe to use with tracheostomized and ventilator dependent patients of all ages (birth to geriatrics)					
The Passy Muir®					
1. Restores Positive Airway Pressure: Due to the closed position "No Leak" design of the Passy Muir® Valves and the more normal closed respiratory system it creates, positive airway pressure is restored. This in turn promotes louder voice, improved swallow, stronger cough, and increased oxygenation.					

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2. Interchangeability between Tracheostomy and Ventilator Use: All Passy Muir® Valves can be used both on and off the ventilator with both pediatric and adult patients. This includes non-ventilator dependent tracheostomized patients, patients who are weaning from the ventilator and patients who are ventilator dependent. The Passy Muir® Valves can be placed in-line with the ventilator using disposable tubing (with PMV® 007 only) or with the PMV-AD 22 flexible silicone adapter with PMV® 005, PMV® 007, PMV® 2000 and PMV® 2001).					
Patient Assessment					
1. Initial assessment will include SLP					
2. Awake, responsive, attempting to communicate					
3. Medically stable					
4. Able to tolerate cuff deflation a. Vent status b. Aspiration status					
5. Able to manage secretions					
6. Have a patent upper airway					
7. Factors Affecting Upper Airway Patency a. Size of Tracheostomy Tube b. Presence and Degree of Obstruction c. Edema d. Secretions e. Foam-Filled Cuff contraindicated					
To Assess for Upper Airway Patency					
1. Deflate cuff					
2. Ask patient to inhale					
3. Finger occlude and voice or cough on exhalation					
4. Use mirrors, cotton, feathers, whistles or bubbles to assist with the oral exhalation process					
Application:					
Properly introduce yourself and wash your hands.					
1. Placement Guidelines a. Patient education b. Position the patient with head of bed at or above 45 degrees unless medically contraindicated.					

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c. Suctioning d. Achieve complete cuff deflation e. Place he purple PMV on the Trach f. SLP to assess glottal patency by observing signs patient is exhaling adequately through the upper airway. These can include: patient coughing, vocalizations, reflexive oral movements, throat clearing, and/or feeling airflow on the hand held in front of patient's mouth/nose g. If the patient experiences difficulties after placement of the speaking valve it should be removed immediately. h. Use the warning label provided with packaging					
2. Baseline Measurements a. Oxygenation b. Vital Signs c. Breath Sounds d. Color e. Work of Breathing f. Patient Responsiveness					
Placement of Passy-Muir Valve					
1. Gentle quarter turn twist while stabilizing the flange of tracheostomy tube					
2. Oxygen can be delivered via T-piece, trach collar or PMA 2000 O2 adapter					
3. Humidity can be provided with nonmedical heated humidity via trach collar or T-piece					
4. Humidification does not affect the function of the valve					
5. Do not use PMV with medicated nebulizer treatments					
6. Inline Suction can be placed.					
Transitioning					
1. Some patients require a gradual transition to wearing the PMV and may first need to use it for short periods of time, gradually increasing use as tolerated 2. Reeducation to breathing through the upper airway					
Troubleshooting					
7. Troubleshooting a. Inadequate exhalation through the upper airway					

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• Ensure the cuff is fully deflated • Reposition the patient • Evaluate the tracheostomy tube size and consider downsizing • Consider possible airway obstruction b. Increased Work of breathing • Ensure the cuff is fully deflated • Reposition the patient • Assess the need for oral or tracheal suctioning • Consider anxiety level of the patient • Evaluate the tracheostomy tube size and consider downsizing c. Increased or excessive coughing • Assess the need for oral or tracheal suctioning • May be a sign of air trapping. Remove the speaking valve. Reevaluate the tracheostomy tube size and consider downsizing d. Patient anxiety • Educate patients so they will know what to expect • Set goals for patients to measure their progress e. Decreased Participation due to Depression • Find ways to use the speaking valve for communication for phone calls, family visits, conversation with physicians and therapy. f. Voicing during inspiration • Caused by a lack of sensation • Discourage voicing during inspiration. It will redirect airflow away from lungs and into the upper airway during inspiration. This may cause a increase in CO2. • Education, timing cues and relaxation techniques may help with patients learn to voice during exhalation. g. Assessment of the level of ventilator support • Rule out air leak, airway obstruction and anxiety • Adjustment of ventilator settings with a physician's order					

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h. Voicing is not heard on the speaking valve. • Reposition the patient • May indicate diaphragm weakness causing inadequate breath support • May indicate vocal fold atrophy from non-use • May indicate weak or damaged vocal folds (consider FEES) i. Valve makes a honking sound • Clean or replace the speaking valve.					
Stop Criteria (includes but is not limited to):					
1. Heart Rate: increases > 20 BPM from baseline 2. Respiratory Rate: > 35 3. SpO2 < 88% 4. FiO2 > 60% 5. Evidence of trapped air behind PMV 6. Patient report of increased respiratory effort. 7. Documents procedure and patients response in the medical record					
Ventilator Application of the Passy-Muir® Valve					
PMV may be used with all traditional ventilator modes **1. Noninvasive modes will not be used for in line Passy Muir valve trials.**					
• Patient Selection					
1. Awake, alert attempting to communicate 2. Medically Stable 3. Able to tolerate cuff deflation a. Ventilation status b. Aspiration status 4. Able to manage secretions 5. Tube must be small enough to allow air to pass 6. Patient must have a patent upper airway 7. Can be placed 48-72 hours post tracheotomy					
• Ventilation Criteria					
1. Patient on <.50 FiO2 2. PEEP requirements of <10cm H2O 3. PIP less than 40cm H2O					
Placement Guidelines					
1. Patient education 2. Position of head and neck 3. Achieve cuff deflation – slowly (Pulmonary Toilet) 4. 100% Cuff Deflation is Mandatory					

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Tube Position is Important					
Assessment Criteria **The initial trial should include SLP and RCP. If trial is successful subsequent trials will be supervised at all times by medical personnel (SLP, RCP or RN). The patient will always have supervision when wearing the in line Passy Muir Valve.**					
1. Initial assessment will include SLP 2. Observe pre-cuff deflation PIP 3. Observe pre-cuff deflation exhaled Vt 4. Achieve cuff deflation – slowly					
Initial assessment will include SLP a. This assessment is telling you your patient can exhale around the properly sized tracheostomy tube, and the airway above the cuff is most likely patent.					
Ventilator Assessment and Adjustments: 1. Pressure compensation during cuff deflation 2. Use low pressure alarm as disconnect/indirect low exhaled Vt alarm (set above 10cm H20) 3. Set high pressure limit appropriately (10 – 15cm H20 above the PIP)					
Review:					
1. Position the patient with head of bed at or above 45 degrees unless medically contraindicated. 2. Slow cuff deflation 3. RCP and SLP to place aqua PMV inline on the ventilator circuit: PMV to be attached to a closed suction system **4.** RCP to adjust the ventilator alarms ensuring they are safe and effective. **Never disable ventilator alarms.** 5. When the speaking valve trail is complete the RCP will remove the speaking valve, readjust ventilator alarms and re-inflate the tracheostomy cuff. 6. If the speaking valve trial is successful, place cuff deflation warning sticker on the pilot balloon, place cuff deflation warning sign at head of bed, and place cuff deflation sticker in the paper chart 7. RCP and SLP document speaking valve placement and RCP will perform a ventilator check					

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Never disable any ventilator alarms.					
Humidification:					
1. Use with heated humidified system 2. Remove Passy-Muir® valve for medicated treatment					
Ventilator Connections: ***Respiratory Therapist are to stay at patients beside during Passy-Muir ventilator application.***					
Patient Assessment:					
1. Monitor Baseline Parameters a. Saturation b. Heart Rate c. Respiratory Rate d. Work of Breathing (WOB) e. Documents procedure and patients response in the medical record 1. Documentation should include pre and post airway assessment; Pre and Post general assessment; ventilator check; ventilator check during use. A RT therapy note should include how the patent tolerated the passy-muir valve, how long valve was in place and any important information.					
Stop Criteria (includes, but is not limited to):					
1. Heart Rate: increases > 20 BPM from baseline Re 2. Respiratory Rate: > 35 3. SpO2 < 88% 4. FiO2 > 60% 5. Evidence of increased respiratory effort. 6. Excessive anxiety from patient. 7. Inefficient exhalation around tracheostomy tube					
Care, Cleaning and Lifetime of the Passy-Muir® Speaking Valves					
1. Swish in mild soapy warm water, rinse in clear water, allow to air dry					
2. Average lifetime of 2 months					

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☐ **Competency standards met –** RCP is able to perform procedure or activity independently. **Both signatures required**.

☐ **Competency standards not met:**

☐ RCP may perform procedure or activity only under direct clinical supervision.

☐ RCP may not perform procedure or activity until re-evaluation is performed and competency is verified.

Employee	**Date**
Lead/Preceptor	**Date**
Clinical Coordinator/Educator	**Date**
Manager	**Date**

Specific Deficits identified:

1.
2.
3.
4.
5.
6.

Action taken: