

POLICY and PROCEDURE RT010

Subject:
RT010 Speaking and Swallowing Valves

Effective Date:
05/23/2018

Applies to:
Houston Methodist Continuing Care Hospital

Date Revised/Reviewed:
11/15/2020

Originating Area:
Respiratory Care

Target Review Date:
07/2021

I. POLICY AND GENERAL STATEMENT

The purpose of this document is to provide guidelines for healthcare providers who will be involved in the use of a tracheostomy speaking and swallowing valve.

The speech-language pathologist (SLP) will coordinate the initial speaking valve and swallowing evaluation with respiratory therapy (RCP). The SLP and the RCP in collaboration with nursing and other trained and competent care staff, will provide placement, patient and/or family education and appropriate treatment with a SSV for patients following an applicable physician's written order.

II. GENERAL INFORMATION

Passy Muir Valve (PMV): The PMV is placed on the hub of the tracheostomy tube automatically closing before the end of the inspiratory cycle. No air leakage occurs through PMV during exhalation. The air is re-directed through the vocal folds to achieve voicing. It restores a more normal "closed respiratory system." A column of air is trapped in the PMV/tracheostomy tube that inhibits secretions from entering the tube and occluding the PMV. Instead, secretions may be coughed up around the tube and expectorated or suctioned from the mouth.

At this facility, the PMV 2002 (purple) and the PMV 007 (aqua) by Passy Muir are exclusively utilized to ensure quality, consistency and above all-patient safety.

III. POLICY

Patients with a physician's order will be evaluated for a SSV by a SLP to determine if a patient with a tracheostomy tube is a candidate.

1. Contraindications (includes but not limited to):
 - a. Severe medical instability
 - b. Severe risk for gross aspiration

- c. Inability to tolerate cuff deflation
 - d. Foam filled cuff
 - e. Severe stenosis/airway obstruction
 - f. Unmanageable thick and copious secretions
 - g. Unconscious and/or comatose patient
 - h. Severely reduced lung elasticity
 - i. Endotracheal tubes
2. Benefits (includes but not limited to):
- a. Improved functional communication
 - b. Improved quality of life
 - c. Improved lung recruitment and diaphragm involvement
 - d. Improved cough production
 - e. Improved secretion management
 - f. Improved taste and smell sensation
 - g. Improved autodigestive pressure system to reduce risk of aspiration
3. Assessment criteria for the use of a SSV
- a. Medically stable
 - b. Ability to tolerate cuff deflation
 - c. Airway patency
4. General patient information will be assessed prior to proceeding with procedure
- a. Primary diagnosis
 - b. Airway history
 - c. Date of tracheostomy, tube type and size
5. Stop Criteria (If patient meets one or more of the following discontinue use immediately and restore previous vent setting, unless cleared by attending physician prior to implementation).
- a. Increased patient anxiety
 - b. Heart rate increases > 20 beats/minute from baseline
 - c. Respiratory Rate increases > 35 breaths/minute from baseline
 - d. FIO₂ > 60% to maintain a SpO₂ > 88%
 - e. Increased respiratory effort
 - f. Violent and/or persistent coughing
6. Troubleshooting
- a. Inadequate exhalation through the upper airway
 - 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 cuff is fully deflated
 - Reposition patient
 - Assess need for oral or tracheal suctioning
 - Consider anxiety level of the patient
 - ID 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 SSV. 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 SSV 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 to accommodate restored physiological PEEP
- h. Voicing is not heard with the SSV.
- 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. SSV makes a honking sound
- Clean or replace the speaking valve.

7. Care and Cleaning of the SSV

- a. Should be cleaned as needed

- b. Wash in pure, fragrance free soap and warm water
- c. Rinse thoroughly with warm water.
- d. Allow to air dry thoroughly before placing in the storage container.
- e. DO NOT USE hot water, peroxide, bleach, vinegar, alcohol, brushes or Q-tips to clean the speaking valve.
- f. DO NOT autoclave or radiation sterilization.
- g. Single patient use ONLY.
- h. With proper use and care, will last a minimum of two months

IV. PROCEDURE

1. IN-LINE PASSY MUIR VALVE

- a. Review MD's order and patient's history to confirm no contraindications are present.
- b. SLP and RCP obtain baseline vital signs and ventilator data and reassess throughout the procedure.
- c. SLP and RCP will instruct the patient on procedure to be performed.
- d. Position the patient with head of bed > 45° unless medically contraindicated.
- e. SLP and/or RCP to perform oral care and tracheal and oral suction prior to cuff deflation.
- f. Slowly deflate the tracheostomy cuff.

CUFF MUST BE DEFLATED COMPLETELY PRIOR TO PLACEMENT OF SSV.

- g. SLP and/or RCP place aqua PMV 007 (aqua) inline on the ventilator circuit: PMV to be attached to a closed suction system
- h. All traditional ventilator modes may be used with the SSV. Ventilator settings should be modified accordingly to accommodate cuff deflation and restored physiological PEEP.
- i. RCP to manage the ventilator alarms ensuring they are effective. **FOR PATIENT SAFETY, NEVER DISABLE VENT ALARMS.**
- j. Continuously monitor the patients' vital signs during the SSV trial.
- k. SLP to assess glottal patency by observing signs patient is exhaling adequately through the upper airway. These can include: reflexive oral movements, and/or feeling airflow on the hand held in front of patient's mouth/nose
- l. Refer to STOP Criteria (III. 6) if patient demonstrates s/s of distress.
- m. **The initial trial should include SLP and RCP. If trial is successful subsequent trials will be supervised at all times by trained medical personnel (SLP, RCP or RN). The patient will always have supervision when wearing the in line SSV.**
- n. RCP and/or SLP document SSV placement and RCP will perform a ventilator check
- o. When the SSV trial is complete the RCP will remove the speaking valve, readjust ventilator settings and re-inflate the tracheostomy cuff with a manometer.

- p. If the SSV 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
- q. The SSV cannot be used during sleep.

2. PASSY MUIR VALVE WITH A TRACHEOSTOMY TUBE

- a. Review MD's order and patient's history to confirm no contraindications are present.
- b. SLP and/or RCP obtain baseline vital signs and reassess throughout.
- c. SLP and/or RCP will instruct the patient on procedure to be performed.
- d. Position the patient with head of bed at or above $\geq 45^\circ$ unless medically contraindicated.
- e. SLP and/or RCP to perform oral care and tracheal and oral suction.
- f. Ensure tracheostomy cuff is fully deflated, - if present
- g. **CUFF MUST BE DEFLATED COMPLETELY PRIOR TO PLACEMENT OF SSV**
- h. Place the PMV 007 (aqua) or PMV 2001 (purple) on the trach hub.
- i. Monitor the patient's vital signs during the speaking valve trial.
- j. SLP to assess glottal patency by observing signs patient is exhaling adequately through the upper airway. These can include: phonation, reflexive oral movements, throat clearing, and/or feeling airflow on the hand held in front of patient's mouth/nose
- k. Refer to STOP Criteria (III. 6) if the patient demonstrates s/s of distress.
- l. If the SSV trial is successful and cuff present, 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
- m. The SSV should not be used during sleep.

V. Documentation of Treatment

RCP and/or SLP will document all care, treatment, assessment and services in the patients' electronic medical record.

VI. COUNCILS OR COMMITTEES REVIEWING OR APPROVING PROCEDURE AND REVIEW OR APPROVAL DATES

Review Committee	Date Reviewed
Medical Executive Committee	05-15-2018
Critical Care Committee	05-03-2018

VII. AUTHORITATIVE REFERENCES

- 1. Passy Muir Valves: <http://www.passy-muir.com>
- 2. The Airway Company <http://www.theairwaycompany.com>

VIII. **NAME OF APPROVING EXECUTIVE:**
TITLE:

Mir Alikhan, MD
Medical Director

Date Signed

Thomas Rhodes, MHA, RRT-RCP
Director of Respiratory Care

Date Signed

Roderick D. Miles, BSRC, RRT-RCP
Manager of Respiratory Services

Date Signed

Revision History

Revision	Date	Changed by	Revision Summary
1	10-2018	T. Rhodes	Updated approving executives and logo
2	03-2019		Modifications made to ensure patient safety and optimal interventions
3	11-2020	R. Miles	Modifications made to ensure optimal use in accordance with manufacturer