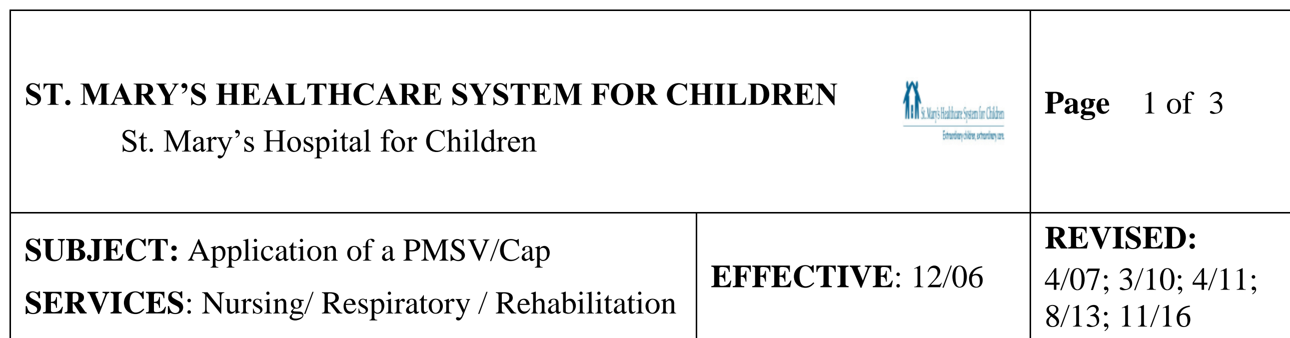

ST. MARY'S HEALTHCARE SYSTEM FOR CHILDREN St. Mary's Hospital for Children		Page 1 of 3
SUBJECT: Application of a PMSV/Cap **SERVICES**: Nursing/ Respiratory / Rehabilitation	**EFFECTIVE**: 12/06	**REVISED:** 4/07; 3/10; 4/11; 8/13; 11/16

PURPOSE

To establish a standardized method for the evaluation and safe weaning of tracheostomy tube support and to restore oral communication and normal swallowing for resident who have a tracheostomy and/or are ventilator dependent.

POLICY

To evaluate and if indicated apply Passy Muir Speaking Valve (PMSV)/caps for children with tracheostomies who are candidates for the restoration of upper airway usage, oral communication and or weaning from the tracheostomy. PMSV are dispensed by the Speech Therapy Department and then kept bedside once patient is deemed a candidate for use and on a wearing schedule.

1. Medical Provider order is required for PMSV or cap initial assessment by Speech Language Pathologist (SLP)/ Respiratory Therapist (RT).
2. Medical Provider order regimen for PMSV/cap application will be included in medical record as indicated by SLP/RT initial assessment. Order will include the following:
    - Schedule for application of PMSV/cap as recommended by evaluating team members and as tolerated.
    - Indicate tracheal cuff deflation requirements as applicable
3. Resident is evaluated based on following criteria:
    - Must be at least 7 days post tracheostomy placement.
    - Have no current respiratory infection.
    - Have no contraindicated upper airway abnormalities.
    - Physiologic parameters including HR, RR and O2 saturations at baseline
    - Alert and responsive.
    - Demonstrate tolerance of full cuff deflation, if applicable.
    - Require respiratory support of an Fi02 of <60% and PEEP<12.
4. Contraindications for PMSV candidacy/use include:
    - Resident unable to tolerate cuff deflation
    - Severe upper airway obstruction/structural abnormalities
    - Presence of Tracheal Stenosis
    - The presence of copious secretions that require high frequency suctioning

PROCEDURE

A. **The SLP/RT will:**
1. Evaluate the resident for PMSV candidacy based on chart review, patient assessment and current respiratory status.
2. Perform an initial assessment and subsequent diagnostic trials as needed to determine if resident is appropriate for PMSV use.
3. Suctioning to be provided before placement of PMSV.
4. During initial evaluation, SLP will utilize trans-tracheal pressure monitoring via manometry to assess for airway patency. Trans tracheal pressures will be taken via manometer connected with adapter and pressures measuring <10cm H20 at rest without confounding variables of coughing, crying and/or vocalizations.
5. If patient has trans-tracheal pressures higher than 10cm/h20 then downsizing of the tracheostomy tube should be considered, if medically appropriate.
6. If resident is capable, airway patency can be assessed by providing digital occlusion to the trach hub and having the resident vocalize on exhalation prior to application of the PMSV.
7. PMSV to be placed by SLP/RT for assessment.
8. At the time of the initial evaluation, the RT/Nurse will listen with a stethoscope to the resident's breath sounds as the PMSV/cap is placed.
9. The resident's air movement and ability to exhale with the valve in place is auscultated and observed. The valve is removed immediately for any significant changes in oxygen saturation, heart rate, work of breathing or resident distress by holding tracheostomy flange firmly while turning the valve ¼ clockwise turn and pulling.
10. During the evaluation the clinical should have resident attempt vocalization/verbalizations (if appropriate).
11. Monitor resident's tolerance of valve over an initial placement time of 5 minutes. Continue to monitor over increased time frame. Time frame to be determined on an individual basis.
12. After completion of the initial assessment, resident may be transitioned to active or increased speech therapy services in order to target further PMSV use.
13. Once the resident is tolerating the speaking valve for the duration of a 30-minute session, the SLP will develop a wearing schedule and transition PMSV use to nursing staff in order to increase wearing opportunities.
14. Document in the medical record resident's assessment and plan.
15. Update plan of care accordingly.

B. **For Use in Ventilator Dependent Residents:**
1. RT is responsible for pre-assessment/pre-donning procedures including suctioning, cuff deflation and any necessary ventilator setting changes in order to accommodate PMSV placement.
2. RT will be responsible for placement of PMSV in-line with ventilator tubing using appropriate connector.

3. Physiologic and clinical parameters taken during the assessment by RT/SLP and should be monitored for initial 5 min and then for the duration of the evaluation. Time frame to be determined on an individual basis.
4. After assessment/wearing completed, RT to remove PMSV and return patient to pre-PMSV use settings (if altered) and re-inflate cuff (if applicable).
5. Document PMSV use and tolerance in the PMSV flow sheet in the medical record.

C. **The Licensed Nurse will:**

1. Evaluate the resident at baseline and monitor throughout the initial assessment.
2. Attach pulse oximetry probe to monitor oxygen saturation level for initial evaluation.
3. Fill out the PMSV/ Cap Flow Sheet upon evaluation and once a wearing schedule is established.
4. Assist SLP/RT during PMSV/cap trial.
5. Suction the airway to ensure clearance.
6. If resident uses PMSV in-line with ventilator RN to call RT to deflate cuff and place PMSV.
7. Provide supplemental oxygen support as indicated by respiratory effort and/or oxygen saturation level.
8. Monitor the resident with a PMSV/cap under the appropriate level of observation as determined by RN/ST/MD and/or pulse oximetry linked to central monitor.
9. Remove PMSV prior to suctioning, sleeping, napping or bathing.
    a. Trach cap use may not be restricted during sleep as per medical provider's order
10. Continue with usage of the PMSV/cap as indicated by medical provider's order.
11. Upon removal of the PMSV/cap, clean as indicated below and store safely.
12. RN to call RT to remove in-line speaking valve and to re-inflate cuff after wearing time is completed.
13. Document in the medical record how the resident tolerated PMSV use.

D. **Cleaning Instructions for Speaking Valve**

At the End of each Evaluation/ Trial/ Use

The Nursing Staff or SLP will:

1. Clean PMSV/cap in warm water with fragrance-free, moisturizer-free soap (bedside hand soap) after each use.
2. Rinse PMSV/cap thoroughly in warm water.
3. Allow PMSV/cap to completely air dry before placing in secured, labeled storage container. Do not use heat to dry PMSV.
4. DO NOT USE hot water, peroxide, bleach, vinegar, alcohol, brushes or Q-Tips to clean PMSV/cap.
5. PMSV/cap will be stored safely by nurse if the resident is on a wearing schedule with nursing staff or by SLP if the resident is on trials with SLP only.

Reference

Hull, E., Dumas, H., Crowley, R., Kharasch, V., (2005) Tracheostomy speaking valves for children: tolerance and clinical benefits. PEDIATR REHABIL 2005 Jul-Sep; 8 (3): 214-9.Retrieved from http//: web ebscohost.com