Providence HEALTH CARE	**RESPIRATORY SERVICES**	DATE CREATED: June 2006 DATE REVIEWED/REVISED: **September 2015**
PROCEDURE	TITLE: Pulmonary Diagnostics: Slow Vital Capacity (SVC) (Respiratory Therapy) NUMBER: B-00-12-12113	RELATED DOCUMENTS:

SITE APPLICABILITY:

ST. PAUL'S HOSPITAL
MOUNT SAINT JOSEPH HOSPITAL

GENERAL INFORMATION:

Slow Vital Capacity (SVC) is the volume change at the mouth between the position of full inspiration and complete expiration. SVC measurement is part of the second measurement in the *Complete Pulmonary Function* testing sequence.

INDICATIONS:

- To measure response to therapeutic intervention
- To help with the interpretation of other lung function tests
- To measure pulmonary disability
- To help with the preoperative assessments in patients with compromised lung function
- To assess the amount of non ventilated lung

CONTRAINDICATIONS:

- Hemoptysis
- Pneumothorax
- Unstable cardiovascular system
- Acute nausea or vomiting

CAUTIONS:

Patient should be monitored for dizziness and signs of syncope.

SPECIAL CONSIDERATIONS:

Patients requiring supplemental O_2 should have access to wall O_2 in order to conserve their tank supply. In situations where the ERV is difficult to obtain (when patients are severely obstructive) during FRC_{pleth} maneuver, SVC can be performed independently of FRC_{pleth} in the Spirometry window.

REQUIRED SUPPLIES & EQUIPMENT:

- Jaeger Masterscreen spirometer
- Microgard Filter
- Silicone Mouthpiece
- Nose clips

PATIENT PREPARATION:

1. The patient should not smoke for at least 1 hour prior to testing.
2. The patient should not eat a large meal prior to testing.
3. If possible, the patient should be tested the same time of day due to diurnal variation.
4. Tight clothing should not restrict chest expansion.
5. Certain respiratory medications should be withheld prior to testing if possible.
6. As the box will be closed, supplemental oxygen will be removed for testing. Assess the patient for removal of oxygen prior to completing the test.
7. The patient should be seated upright.
8. Assess the patient for physical and mental ability to undergo testing.
9. Review patient preparation list with the patient to make sure they have followed the necessary steps.

PROCEDURE:

1. Check to make sure the patient does not have any contraindications to testing.
2. The patient should be sitting comfortably, with both feet flat on the floor and the mouthpiece adjusted to a comfortable height.
3. Ask the patient to breathe in maximally to TLC then exhale maximally to RV.
    - In some cases (i.e. patients with airway obstruction) it is preferable to ask the patient to exhale maximally to RV first, then inhale maximally to TLC
4. Press **F7** to calculate results.
5. The maneuver should be performed in a relaxed manner.
6. Observe the patient during the maneuver to ensure they patient maintain a good seal on the mouthpiece.
7. ATS recommends a maximum of 4 maneuvers; however more may be required to meet reproducibility criteria.
8. The largest value from a minimum of 3 acceptable maneuvers should be reported.

REFERENCES:

1. American Thoracic Society Series *ATS/ERS Task Force: Standardization of the measurement of lung volumes.* European Respiratory Journal 2005 Volume 26
2. ATS Pulmonary Function Laboratory Management and Procedure Manual (2005).

REVIEWED BY:

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