

**OLIVE VIEW-UCLA MEDICAL CENTER
POLICY & PROCEDURE**

**NUMBER: 1057
VERSION: 2**

**SUBJECT/TITLE: BLOOD SAMPLING FROM A PULMONARY ARTERY
THERMODILUTION CATHETER**

POLICY: Instructions for obtaining a mixed venous blood gas (MVBG) from a pulmonary artery thermodilution catheter (PATC) are to be used by the RN and physician who have verified competencies and are responsible for the care, maintenance, and use of the PATC may complete the procedure. MVBG's are done simultaneously with arterial blood gases when obtaining a full line of hemodynamic data to include oxycalculations and after O₂ therapy changes as ordered by physician. MVBG and arterial blood gases should be done prior to obtaining cardiac output (CO) as oxygenation may change in the severely compromised heart while obtaining a CO.

*Although blood samples can be drawn through this port it is not recommended as a method of routine blood sampling.

PURPOSE: To provide guidelines on the technique of obtaining samples of MVB taken for the purpose of evaluating venous blood oxygen saturation (SvO₂).

DEPARTMENTS: NURSING, MEDICINE, RESPIRATORY

DEFINITIONS: SvO₂ reflects the relationship/balance achieved between arterial oxygen supply (SaO₂) and oxygen demand at the tissue level. The normal value for SvO₂ is 60% - 80%.

EQUIPMENT LIST:

1. Arterial blood sampling kit (for MVBG's).
2. Non-sterile exam gloves.
3. Chlorhexadine swab.
4. (1) 10cc syringe (discard syringe).
5. (2) 10cc syringes (or more as needed for blood samples).
6. Appropriate label/barcode
7. Sterile Luer-Lock.

PROCEDURE: STEPS/KEY POINTS

1. Verify physician order for obtaining blood sample.
2. Obtain specimen label.
3. Verifies correct patient with two identifiers prior to obtaining specimen.
4. Notify/educate patient and/or significant other/family member(s) of procedure.

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- Reduces anxiety and fear.
5. Note pre-sample waveform.
 - For verification that same waveform quality returns post-procedure.
 6. Perform hand hygiene and don personal protective equipment as appropriate. Gather equipment.
 7. Clean port with Chlorhexidine. Allow to dry (1) one full minute. Attach a 10cc syringe to port of the stopcock or distal lumen closest to the PATC insertion site. Turn stopcock off to pressure tubing.
 8. Slowly withdraw, noticing when blood enters the syringe, and withdraw about 2 ½ times the dead space of the catheter. (Approximately 2-3cc's)
 - Allow gravity fill of syringe.
 - Stop blood flow and close all ports of stopcock.
 9. Turn stopcock one-quarter turn. Remove syringe and discard in appropriate container.
 - Slow aspiration is important to prevent contamination of the mixed venous sample with arterial blood from PA capillary.
 - Stop blood flow and close all ports of stopcock.
 10. Connect syringe for blood sample to top port of stopcock. Turn stopcock off to pressure tubing. Slowly withdraw the necessary amount of blood. (Approximately 0.5-1cc for MVBG is sufficient.)
 11. Turn stopcock ¼ turn.
 12. Expel all air bubbles from syringe by capping syringe, hold syringe perpendicular to floor and depress plunger until cotton in cap is saturated and no air bubbles are visualized in syringe. Promptly deliver to blood gas lab.
 13. Attach a 10cc syringe to top of port of stopcock. Turn stopcock off to catheter. Fill syringe with approximately 5 ml of flush solution.
 14. Turn stopcock off to patient, open to pressure tubing. Flush residual blood from port into sterile 2x2 gauze.
 15. Place sterile Luer-Lock onto port.
 16. Turn stopcock lever upright to syringe port (open from patient to transducer/pressure tubing) and flush line to clear thus maintain patency.
 17. Evaluate for return of quality PA waveform.
 18. Waveform should not be dampened or absent. Troubleshoot as necessary. Never allow a change in waveform quality to go unaddressed.
 - Remove and discard gloves in appropriate receptacle.
 - Label specimen per OV-UCLA policy. Send MVBG to blood gas lab.
 - Perform hand hygiene.

DOCUMENTATION

Documentation in the patient record should include the date and time that the blood sample was taken, and the MVBG results.

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