

SUBJECT: ARTERIAL BLOOD GAS SAMPLING	REFERENCE #2107
DEPARTMENT: CARDIOPULMONARY SERVICES	PAGE: 1 OF: 6
APPROVED BY:	EFFECTIVE:
	REVISED:

**POLICY:**

- It is the policy of \_\_\_\_\_ Hospital Cardiopulmonary Services to provide sampling for arterial blood gas analysis, as ordered by a patient's physician.
- Blood shall be drawn anaerobically from the radial, brachial, femoral or dorsalis pedis artery via needle puncture. Blood for arterial gases may also be drawn from an indwelling arterial cannula or catheter for multiple samples.
- Arterial blood samples shall be obtained by trained healthcare personnel only who are approved by the Cardiopulmonary Services Medical Director. Healthcare personnel who perform arterial blood sampling shall be evaluated periodically.

**INDICATIONS:**

- To evaluate the adequacy of ventilatory (PaCO<sub>2</sub>), acid-base (pH and PaCO<sub>2</sub>), oxygenation (PaO<sub>2</sub> and SaO<sub>2</sub>) status, and the oxygen-carrying capacity of blood (PaO<sub>2</sub>, HbO<sub>2</sub>, Hbtot and dyshemoglobins)
- To determine the patient's response to therapeutic intervention and/or diagnostic evaluation (i.e., oxygen therapy, exercise testing)
- To monitor severity and progression of a documented disease process
- Preoperative assessment of high-risk patients receiving general anesthesia
- Smoke inhalation or suspicion of carbon monoxide poisoning

**CONTRAINDICATIONS:**

- Negative results of a modified Allen test
- DO NOT perform an arterial puncture through a lesion or through or distal to a shunt, i.e., dialysis patient
- Evidence of an infection or peripheral vascular disease in the selected extremity; choose an alternate site
- The patient is on a medium to high dose of anticoagulation therapy

SUBJECT: INTERMITTENT POSITIVE PRESSURE BREATHING (IPPB)	REFERENCE #2131
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DEPARTMENT: CARDIOPULMONARY SERVICES	EFFECTIVE:
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**DEFINITION:**

- IPPB is a technique used to provide short-term or intermittent mechanical ventilation to augment lung expansion, delivering aerosol medication or assisting ventilation.
- IPPB is not a therapy of first choice for aerosol delivery or lung expansion in spontaneously breathing patients when other less expensive and less invasive therapies can reliably meet clinical objectives, such as noninvasive positive pressure ventilation (NPPV).

**POLICY:**

- It is the policy of \_\_\_\_\_ Hospital Cardiopulmonary Services to provide intermittent positive pressure breathing, as ordered by patient’s physician.
- IPPB orders for critical care patients shall be reevaluated at least every 24 hours based on assessments during individual patient treatments; IPPB orders for acute care patients shall be reevaluated every 72 hours.
- Licensed Respiratory Care Practitioners may administer IPPB therapy; however, RNs may administer IBBP therapy after a RCP has established need for a specific device by patient assessment, and after the first administration has been completed. All staff administering IPPB therapy must demonstrate:
  - Ability to prepare, measure and mix medication
  - Proper technique for administration of medication
  - Proper use of equipment, including adjustment of machine settings to meet patient demands
  - Proper use and knowledge of limitations of IPPB equipment and aerosol device
  - Ability to fit mask and/or identify best application device for particular patient
  - Ability to assess patient condition and patient response to therapy
  - Ability to encourage effective breathing patterns and coughing techniques
  - Effective cleaning of equipment
  - Proper disposal of wastes
  - Ability to modify technique after speaking with the patient’s physician, in response to recognized complications and adverse reactions or change in severity of symptoms, as determined by observation and vital-signs determination
  - Standard Precautions

SUBJECT: PREVENTION OF TUBING/CATHETER MISCONNECTIONS	REFERENCE #2142
DEPARTMENT: CARDIOPULMONARY SERVICES	PAGE: 1 OF: 3
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**BACKGROUND:**

- Tubing and catheter misconnections errors occur with significant frequency as reported by the FDA, the Institute for Safe Medication Practices (ISMP), United States Pharmacopeia (USP), ECRI and JCAHO.
- The types of tubes and catheters involved in misconnection errors include:
  - Central intravenous catheters
  - Peripheral IVs
  - Nasogastric feeding tubes
  - Percutaneous enteric feeding tubes
  - Peritoneal dialysis catheters
  - Tracheostomy cuff inflation tubes
  - Automatic blood pressure cuff insufflation tubes

**POLICY:**

- \_\_\_\_\_ Hospital will establish, as a part of its Patient Safety Program, a plan that recognizes tubing and catheter misconnections, risk assessment of new tubing/catheters and equipment, acceptance testing of new tubing/catheters and staff, patient and family education.
- \_\_\_\_\_ Hospital, when possible, shall not purchase non-intravenous medical equipment that has connectors that can join with a female luer IV line connector.
- Before new tubing/catheters are placed into use in this facility, a risk assessment will be performed, along with acceptance testing (performance, safety and usability testing), to identify the potential for misconnections.
  - If a risk is identified, the appropriate preventive measures will be instituted.
- Clinical and non-clinical staff shall receive education regarding tubing/catheter misconnections. Education will be provided at orientation and inservices.

SUBJECT: ECHOCARDIOGRAMS	REFERENCE #2202
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## **PROCEDURE:**

- LV Function Protocol:
  - M-Mode Examination:
    - M-Mode through papillary muscle level, mitral valve level and aortic LA level for measurements of LV fractional shortening, left atrial size, LV posterior wall and interventricular septal thickness, aortic size and LA aortic ratio and EF slope
  - ZD/Doppler Examination:
    - Parasternal Long Axis Plane:
      - ◆ Five (5) or more beats in the parasternal long axis view, followed by three (3) or more beats of color to rule out aortic and mitral regurgitation
    - Parasternal Short Axis Plane:
      - ◆ Five (5) or more beats at the parasternal short axis at the mitral level and papillary muscle level
        - There is no need for color doppler on the short axis views, unless moderate or severe regurgitation of the mitral or aortic valves is noted.
      - ◆ Five (5) or more beats at the parasternal short axis at the great vessel level, then followed by several beats with color flow looking for tricuspid regurgitation and pulmonic regurgitation
        - If tricuspid regurgitation is visualized, then continuous wave doppler should be put through the middle of the jet to obtain maximal transvalvular gradient. This measurement is considered to be very important.
    - Apical Imaging Plane:
      - ◆ Five (5) or more beats from the apical four and five chamber views followed by color doppler to rule out aortic regurgitation, mitral regurgitation and tricuspid regurgitation
      - ◆ Five (5) or more beats from the apical long axis followed by a few beats of color doppler
      - ◆ It is critical that on each patient a Simpson's Biplane Ejection Fraction be calculated if images are adequate for quantitation

SUBJECT: TRANSESOPHAGEAL ECHOCARDIOGRAPHY (TEE)	REFERENCE #2218
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DEPARTMENT: CARDIOPULMONARY SERVICES	EFFECTIVE:
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**POLICY:**

Cardiopulmonary Services shall perform transesophageal echocardiograms.

**DEFINITION:**

- Transesophageal echocardiogram is an ultrasonic technique where a ultrasonic transducer is incorporated into a flexible gastroscope device.
- The imaging transducer is introduced into the patient’s esophagus and positioned directly posterior to the heart.

**EQUIPMENT/SUPPLIES:**

- Oxygen
- Oxygen delivery system, i.e., bag and mask
- Suction
- Crash cart/emergency medications
- Blood pressure cuff
- IV therapy supplies
- Video equipment
- Ultrasonic equipment, transducer

**PROCEDURE:**

- Verify the order.
- Wash hands.
- Assemble equipment and supplies.
- Identify the patient using two (2) patient identifiers.
- Explain the procedure to the patient.
- If the patient does not have IV access, an IV will be inserted by a trained individual.
- If sedation is used, a trained licensed nurse shall monitor the patient during the procedure.
- The physician will anesthetize the patient’s oropharynx with a topical agent.
- Position the patient in the left decubitus position, with the patient’s head flexed slightly forward.