

**WARREN GENERAL HOSPITAL****Service:** Respiratory Therapy Service**Category:** Invasive Procedure**Subject:** Arterial Punctures**Original Date:** 9/1/79**Revision Dates:** 1/22/82, 7/7/85, 10/16/92, 2/11/96, 6/6/01, 10/11/05\_\_\_\_\_  
Department Administrator\_\_\_\_\_  
Director of Laboratory Services\_\_\_\_\_  
Medical Director

Policy:

This policy establishes the proper method for Arterial Puncture for Arterial Blood Gas samples.

**Section 1**

Procedure:

Before Collection:

<b>Responsibility</b>	<b>Action</b>
Physician	1. Orders Arterial Blood sample (ABG's).
Ward Clerk/ RN / LPN	2. Notifies Respiratory personnel of order 3. Places order into Mednet computer system
Respiratory Care Practitioner	4. Checks patient's chart for the physician's order.

**Note:** Routine arterial blood sampling in neonates will consist of heel capillary sticks up until the age of 12 months. After that age, arterial punctures (radial or brachial) may be performed unless otherwise specified by the attending physician. Both of these sampling procedures are to be performed by an approved Respiratory Care Practitioner & selected Registered Nurses (see item #21).

Collection:

1. Checks to make sure all indicated ID labels, requisitions & forms have been properly completed.
2. Identifies the patient by use of the patient ID band
3. Explains the procedure to the patient
4. Selection of an artery for puncture.
  - a. 1<sup>st</sup> priority: radial
  - b. 2<sup>nd</sup> priority: brachial
  - c. 3<sup>rd</sup> priority: femoral

## 5. Allen's Test

- a. The Allen's Test is a simple clinical reliable maneuver for assessing collateral circulation in the hand. The Allen's Test is to be done on all patients prior to performing a radial puncture. Only those patients exhibiting a positive Allen's Test are to have radial punctures done with documentation of the positive Allen's Test being made on the laboratory's ABG requisition. Patients exhibiting a negative Allen's Test must have the sampling done from another puncture site.
  - b. It is the responsibility of Respiratory Care Practitioner and selected RN's\* to:
    1. Instruct the patient to close the hand tightly to form a fist. This maneuver will force as much blood from the hand as possible.
    2. Apply pressure directly at the wrist, compressing and obstructing both the radial and ulnar arteries
    3. Instruct the patient to relax the hand without fully extending it, revealing a blanched palm and fingers.
    4. Remove the obstructing pressure from the ulnar artery while observing the palm, fingers and thumb. They should become flushed within 15 seconds as the blood from the ulnar artery refills the capillary beds. This flushing of the entire hand demonstrates that the ulnar artery alone is capable of supplying the entire hand since the radial artery is compressed. This result is a positive Allen's Test. A patient exhibiting such results may have a radial puncture performed. It may be assumed that under these circumstances that the possibility of an arterial puncture causing an obstruction of the radial artery will not result in the diminution of the blood supply to the hand.
      - i. If the ulnar artery does not adequately supply the entire hand indicated by poor flushing, this constitutes a negative Allen's Test and the radial artery is not to be used as the puncture site.
6. Exposes & stabilizes the site selected for puncture so that there is easy access and that the area is stationary. If the puncture site is to be radial or brachial, then the particular are is to be stabilized by either (1) resting it comfortably on a flat surface, (2) by using an arm board, or (3) using a rolled towel to support the site selected.
  7. Palpates the pulse of the artery selected in order to accurately locate the path of the artery
  8. Observes universal precautions. Especially the use of gloves
  9. Cleans the site thoroughly by using alcohol and then treating the site as a sterile field
  10. Select appropriate size needle for the site selected (22/23/25).

11. Attaches needle protection device to the syringe if not already attached in the package then attach needle selected to the needle protection device
12. Palpates the pulse of the artery with the index finger of one hand while holding the skin over the artery taut. Carefully thrust the needle at about 30 to 40 degree angle just through the skin surface. If the puncture is done correctly the arterial blood will flow into the syringe without the need of aspiration.
13. Obtain up to 1cc of arterial blood collected into the syringe. Remove syringe and needle from the puncture site and apply digital pressure with a 2x2 inch gauze pad. A faint pulse should still be felt peripherally at the puncture site. Pressure is to be maintained for 5 minutes for radial or brachial punctures and 10 minutes for a femoral puncture.
14. Activate the needle protection device. Remove the protected needle from the syringe. Cap with the filter device, gently expel air-bubbles into the filter device. Label the syringe and place into ice.
15. Apply pressure dressing (adhesive tape, 2x2 inch gaze) to the puncture site
16. Properly discard all used equipment and supplies

\*Note: Selected Registered Nurses shall be trained by the Respiratory Care Practitioners to perform ABG's during call hours. The radial site is the preferred site when an RN obtains the specimen. The RN must complete 10 successful supervised drawings of ABG's before being allowed to draw independently.