# Blood Sampling:  
**Assisting with Arterial Puncture**

| Approved by: | Dr. Paul Byrne  
| Senior Director Operations, Maternal, Neonatal & Child Health Programs  
| Dr. Sharif Shaik  
| Medical Director, Neonatology  

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## Purpose
To provide guidelines for assisting a Neonatologist/Designate with arterial punctures.

## Policy Statement
Arterial puncture may be indicated when:
- Blood sampling is required for arterial blood gas determination
- Blood sampling for routine laboratory testing is required and venous or capillary sampling is either unobtainable or not suitable.
- To obtain a large quantity of blood.

## Applicability
All Covenant Health Neonatal Nursery staff.

## Equipment
- 3 mL syringe(s)
- 25 gauge short or long butterfly needle
- Heparinized syringe for ABG sample and filtered dead ender.
- Skin antiseptic pledgets
- Filtered dead ender
- Appropriate blood collection tubes and paperwork as required
- Technique gloves
- High intensity light for transillumination (optional)

## Procedure
<table>
<thead>
<tr>
<th>ACTION</th>
<th>RATIONALE</th>
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<tbody>
<tr>
<td>1. Verify order and verify patient by using two patient identifier.</td>
<td>Check availability of analyzer for blood gas sample.</td>
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<tr>
<td>2. Notify Respiratory Therapist of blood sample if necessary.</td>
<td>Aseptic technique and standard precautions.</td>
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<td>3. Perform hand hygiene, assemble equipment, and don non-sterile gloves.</td>
<td>1 mL heparinized syringes are available. A 3 mL syringe may be heparinized by drawing heparin into the syringe to coat the sides and then expelling all excess heparin. To obtain ionized Ca result, the heparin needs to be Lithium heparin.</td>
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<tr>
<td>4. If an arterial blood gas is required, obtain a heparinized syringe and filtered dead ender.</td>
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**Neonatal Policy & Procedures Manual**

**Policy Group:** Cardiovascular
5. Endeavour to have the infant quiet and stable before commencing the procedure. Use supportive care to help infant maintain control. Utilize sucrose administration if applicable. Allows for more accurate results. Sucrose may help the infant cope with the pain of the procedure.

6. Note the ventilation parameters and amount of oxygen the infant is receiving and mark on the blood gas requisition.

7. Attach a sterile 3 mL syringe to the butterfly needle the person performing the procedure has chosen to use. Physicians and neonatal nurse practitioners may perform arterial punctures.

8. Restrain the infant to allow the certified individual to cleanse the area, palpate the artery, and obtain the specimen. Utilize use of a transillumination light at the request of the Neonatologist/Designate. Suction helps to draw blood for the specimen. Excessive suction may cause the artery to go into spasm. The saturation reading is noted to check for correlation between the monitoring equipment and the blood gas.

9. Apply gentle suction on the syringe when the needle has been inserted into the artery. Note reading on oxygen saturation monitor. A 3 mL syringe is used to provide suction until the specimen is flowing. If necessary, the syringe is changed to a heparinized one.

10. After blood is flowing, change the 3 mL syringe to a heparinized syringe and withdraw 0.2 – 0.3 mL for the sample.

11. After the blood gas specimen is obtained, cap the syringe with the filtered dead ender and expel any air bubbles from the syringe. The filtered dead ender allows air to be expelled from the syringe without blood release. Air will invalidate blood gas results.

12. If additional blood tests are required, attach a sterile 3 mL syringe to the butterfly needle and draw until the required amount of blood is obtained. Pressure is applied to control bleeding. Arteries bleed longer than veins when punctured so 5 minutes is used. A hematoma may form when insufficient pressure is applied to the puncture site.

13. The butterfly needle is removed and pressure is applied to the site for a minimum of 5 minutes and until bleeding ceases.
14. Inspect digits located distally from the puncture site for circulatory compromise. Possible complications may include distal ischemia from arteriospasm, thrombosis or embolism.

15. Place additional blood in appropriate specimen containers. Label and co-sign all specimens and completed requisitions. ABG specimens are given to the Respiratory Therapist.

Related Documents
Adapted with permission from Stollery Children’s Policy and Procedure Manual:
Blood Sampling – Assisting Arterial Puncture – March, 2009

References

Revisions
November 2004
November 2015
Signing

Original signed
GAIL CAMERON
SENIOR DIRECTOR OPERATIONS
MATERNAL, NEONATAL & CHILD HEALTH PROGRAMS
COVENANT HEALTH
GREY NUNS & MISERCORDIA HOSPITALS

December, 2015
DATE

Original signed
DR. PAUL BYRNE
MEDICAL DIRECTOR
NEONATAL PROGRAM
COVENANT HEALTH
GREY NUNS HOSPITAL

December, 2015
DATE

Original signed
DR. SHARIF SHAIK
MEDICAL DIRECTOR
NEONATAL PROGRAM
COVENANT HEALTH
MISERCORDIA HOSPITAL

December, 2015
DATE