### Purpose
To provide guidelines for obtaining capillary blood samples that provide accurate laboratory results with minimal discomfort and potential for injury or infection.

### Policy Statement
Capillary heel sampling is a minimally invasive technique that is capable of providing laboratory results within acceptable limits when obtained with proper equipment and technique. This method of blood sampling preserves veins in those infants who may require intravenous access for fluids or medication administration.

Indications where heelstick sampling is acceptable include:
- When the amount of blood required is less than or equal to 0.5 mL.
- When a capillary blood gas is required.

Indications when a heelstick sampling is NOT acceptable include:
- Poor perfusion, local edema, infection, and damaged skin in the heel area.

Heelsticks are not the preferred method to obtain potassium or lactate samples since the values may not be accurate and because they are very painful compared to venipunctures.

If the specimen collection is unsuccessful after two attempts, the charge nurse is to be notified and another individual will be identified to perform blood collection.

### Applicability
All Covenant Health Neonatal Nursery staff.

### Equipment
- Antiseptic pledget
- Gauze or cotton balls
- Lancing device with a depth of 2mm or less
- Appropriate collecting device (example – capillary tube or microtainer)
- Non sterile gloves
- Requisition
- Patient labels to label specimen containers and requisition

### Principles
**ANATOMY**

To perform a heel stick, the anatomy of the heel is important to know. The lateral and medial areas of the heel are vascular with relatively few nerve endings. The centre of the heel should be avoided because of the nerve endings and since the distance to the bone is small and scar tissue formation could cause discomfort later. The blood is obtained from the vessels at the dermal subcutaneous junction so the lancet device should not penetrate more than 2 mm into the skin for larger babies and less for very low birthweight infants.
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 identifiers.</td>
<td>Heel lancing is a painful procedure. Supportive measures are used to minimize distress. Sucrose should be utilized in infants when not contraindicated.</td>
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<td>2. Explain procedure to parents if they are present, and provide appropriate comfort measures such as skin to skin, swaddling, soother, and/or sucrose to infant.</td>
<td>Ensure size of lancet chosen is appropriate for patient.</td>
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<td>3. Perform hand hygiene, gather equipment, don gloves, and protect bed under infant’s foot.</td>
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<td>4. Position the heel lower than the torso, and grasp the foot firmly without flexing the ankle severely.</td>
<td>This grasp prevents movement during the heelstick and controls “milking” of the foot.</td>
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<td>5. Cleanse heel with antiseptic and dry with sterile gauze after 30 seconds. Identify intended site on a side of the plantar heel avoiding previous puncture sites, or bruised heels.</td>
<td>Let antiseptic dry for at least 30 seconds to disinfect and wipe to prevent contamination of the blood sample. Residual alcohol can cause hemolysis and errors in blood glucose values. Petrolatum is not used because it is not sterile and it may contaminate blood specimen results.</td>
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6. Place the lancing device firmly on the skin over the intended collection site with the other hand. Activate the lancing device.

7. Wipe away the first drop of blood. First drop contains tissue fluid and possibly antiseptic which influences test results.

8. Hold the puncture site downward, and gently apply intermittent pressure to surrounding area and collect blood sample in appropriate container. A blood gas sample should be obtained first, if required. If blood stops flowing, wipe site to remove clot, allow time for capillary refill and then resume sampling if blood flows. Harsh squeezing will result in hemolyzed samples, bruising, and contamination of specimen with tissue fluid. Intermittent pressure allows for capillary refilling.

9. After blood collection is complete, elevate the foot above the body, and gently compress site with dry gauze until bleeding has stopped. Bandages are not be used as they can lead to skin maceration when removed.

10. Dispose of contaminated supplies appropriately. Place lancet in sharps container and blood soaked materials in biohazard container.

11. Observe the infant’s response, and provide comfort measures such as skin to skin, rocking, containment, or a soother.

12. Send labeled specimen to the lab or perform point-of-care testing. Ensure the specimen and requisition is both labeled with patient labels. Verify with two patient identifiers.

13. Document procedure including site, patient’s tolerance and complications.

Definitions

Lancing device – an encased, spring-loaded, retractable blade that provides a controlled and consistent width and depth of incision for blood testing.

Related Documents


Blood Sampling – Heelstick, August 2012
Corporate Policy & Procedure Manual V!-B-25 Identification of Patient, resident or client using 2 identifiers

References

Revisions
August 2002
January 2012
September 2015
### Signing

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<th>Original Signed</th>
<th>September, 2015</th>
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<tr>
<td><strong>GAIL CAMERON</strong>&lt;br&gt;SERIAL DIRECTOR OPERATIONS&lt;br&gt;MATERNAL, NEONATAL &amp; CHILD HEALTH PROGRAMS&lt;br&gt;COVENANT HEALTH&lt;br GREY NUNS &amp; MISERCORDIA HOSPITALS</td>
<td>DATE</td>
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<tr>
<td><strong>DR. PAUL BYRNE</strong>&lt;br&gt;MEDICAL DIRECTOR&lt;br&gt;NEONATAL PROGRAM&lt;br&gt;COVENANT HEALTH&lt;br&gt;GREY NUNS HOSPITAL</td>
<td>DATE</td>
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<tr>
<td><strong>DR. SHARIF SHAIK</strong>&lt;br&gt;MEDICAL DIRECTOR&lt;br&gt;NEONATAL PROGRAM&lt;br&gt;COVENANT HEALTH&lt;br&gt;MISERCORDIA HOSPITAL</td>
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