SPECIMEN COLLECTION
NEWBORN HEELSTICK

POLICY
Collecting blood from infants can be difficult primarily due to the infants’ size. Heel sticks, when performed accurately, are an acceptable method of specimen collection.

SUPPLIES
1. Antiseptic swabs, 70 percent alcohol.
2. Cotton balls
3. Microtainer blood collection tubes.
4. Tenderfoot instrument
5. Infant heel warmer
6. Disposable gloves
7. Band-aid (optional)

NURSERY ISOLATION TECHNIQUES
1. Place the phlebotomy tray on the counter just inside the Nursery Door and remove the equipment that will be needed. The tray should not be taken further into the nursery area unless otherwise indicated.
2. Remove lab coat and put on a clean coat or gown, provided by the nursery department.
3. Wash hands thoroughly.
4. Check the infants ID band against the lab test label. If the infant is not banded, have the nurse positively identify the infant for you.
5. Put on clean gloves at the bedside.
6. When in the nursery, touch ONLY the baby and necessary equipment.
7. If drawing more than one baby, remove gloves and discard them in an appropriate biohazard container. Wash your hands and put on clean gloves before you touch another infant.

COLLECTION PROCEDURES
1. Prewarming the infant’s heel (42°C for 3 – 5 min) is essential for capillary blood collection, as it increases the blood flow to the heel, for easier sample collection.
2. Put on gloves.
3. Select the incision site. Refer to diagram #1 (Selection of incision site). Avoid any edematous area or site within 2mm of a prior wound.
4. Clean the incision site with an alcohol swab. Allow the site to air dry. Do not touch the incision site or allow the heel to come into contact with any non-sterile item or surface.
5. Remove the tenderfoot device from its package, taking care not to touch or rest the incision end on any non-sterile surface.
6. Remove the safety clip (note: the safety clip may be replaced if the test is momentarily delayed; however, prolonged exposure of the tenderfoot to uncontrolled environmental conditions prior to use may affect its sterility.) Once the safety clip is removed, do not push the trigger or touch the incision slot.

7. Raise the foot above the baby’s heart level and carefully place the tenderfoot device on the heel with the blade slot surface flush against the heel so that the center point is vertically aligned with the desired incision area.

8. Ensure that both ends of the device have made light contact with the skin and depress the trigger. Excessive pressure or indentation of skin with the device will result in a deep and hazardous incision.

9. After triggering, immediately remove the tenderfoot device from the infant’s heel. Lower the infant’s heel to a position level with or below the baby.

10. Take the cotton ball and gently wipe away the first drop of blood. It is to be assumed that the first drop contains an excess of intracellular and interstitial fluid.

11. Newborns often do not bleed immediately. If the blood is not free flowing, use gentle massage to produce a rounded drop of blood. (Excessive or heavy massaging dilutes the blood with tissue fluid and may bruise the heel, so use gentle massage only.)

12. Collect the blood in the proper Microtainer collection tube to obtain the desired specimen(s).

13. When collection is completed, elevate the heel and gently place the cotton ball on the incision site. Hold the cotton in place until the bleeding stops. This step will help prevent a hematoma from forming.

14. Whether or not to bandage a neonate or infant is a controversial issue because of skin sensitivity and potential bandage aspiration. However, the incision should be noted by the primary care nurse to ensure that the heel can be monitored for bleeding and inflammation.

**DIAGRAM #1 Selection of Incision site.**

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  LATERAL
  YES

  NO

  YES

  MEDIAL
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1. When performing a heel stick, puncture the sides of the heel. (Most medial or most lateral portion of the planter surface).

2. Do not use the central portion or posterior curvature of the heel because you could cause injury to the underlying bone which is close to the skin surface at this point.
3. Do not use a previous incision site as these may be infected.
4. Do not use a heel that has any open wounds or sores.

LABELING SPECIMENS
All specimens are to be labeled according to laboratory Specimen Collection policy #25 (Routine Specimen Collection and Identification Procedures).

TENDERFOOT DEVICE
1. The Tenderfoot device makes an incision that is 1 mm deep and 2.5 mm in length.
2. This depth and width of incision are controlled, thereby eliminating the possibility of calcaneal puncture and osteomyelitis.
3. The device is sterile, reducing the possibility of introducing infection into the infant.
4. Once activated, the device cannot be reused and should be discarded in an appropriate biohazard sharps container.

PREWARMING HEEL (INFANT HEEL WARMERS)
1. Activation procedure
   - Locate the metal disc and grasp with the thumb and forefingers of both hands.
   - Flex (bend) disc rapidly.
   - Massage the pack to mix the chemicals and to soften.
2. Warming
   - Place the activated heel warmer promptly to the desired area of the heel.
   - To hold the warmer in place, carefully wrap the warmer around the heel and attach the adhesive tape provided to the other side.
   - Keep the warmer on for 3 – 5 minutes.
   - Just prior to performing the incision procedure, remove the warmer and discard into a biohazard bag.
3. Precautions
   - Do not lay warmer on a hard surface and strike.
   - Do not use warmer if there is any sign of leakage.
   - Do not move pack from one heel to another, as this will decrease effectiveness. If more than one heel needs to be warmed, use another warmer.
   - When used on premature infants or in warmer nurseries (75°F and up), knead the pack after activation for at least 30 seconds to disperse the heat evenly.
   - Warming the heel to 42-44°C will improve blood flow, but temperatures above 44°C will burn the heel.

LIMITATIONS
1. Heel sticks may be performed on infants up to 3 months of age. Any children three months of age or older shall have a Venipuncture performed when obtaining a blood sample.
2. The amount of blood obtained from an infant patient is limited and is based upon the patient's weight. The calculation is WEIGHT/2 = cc blood maximum. This volume
can be removed at a maximum of once every other day. If more blood is required for analysis the patient’s physician should be notified.

REFERENCES
1. Tenderfoot®, International Technidyne Corporation Insert. 9/00

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