Pediatric Blood Draws

HELEN MAXWELL
Special Considerations for Doing Pediatric Blood Draws

- Communication is a Must
- Positive Body Language (Relaxed/Cheerful)
- Soft Voice Tone
Special Considerations for Doing Pediatric Blood Draws

- Eye to Eye Contact
- Good Listener
- Sensitive to Child’s Wishes
Special Considerations for Doing Pediatric Blood Draws

- Get the Child Involved
- Be Honest
Challenges Dealing with Pediatric Patients

**Psychological**

- Fear of Strangers
- Separation Anxiety
- Limited Language Use
- Fear of Pain
Challenges Dealing with Pediatric Patients

Physiological

- Patient Allergies
- Lower Blood Volume
- Choking Hazard with Adhesive Bandages
Pediatric VP Complications

- Cardiac Arrest
- Hemorrhage
- Venous Thrombosis
Pediatric VP Complications

- Damage to Tissues
- Infection
- Cellulitis
Pediatric VP Complications

• Injury to the Child because of Restraints
• Decreasing in Total Blood Volume
Age & Procedures

• 0 – 6 months
  – Heel Sticks

• 6 months – 2 years
  – Finger Sticks
  – Hand Sticks & Venipunctures (doctor’s orders only)

• 2 years & older
  – Venipuncture
A dermal puncture can be performed on these areas of the foot.
NEVER:

- Puncture Deeper than 2.4–2.5 mm
- Puncture Through a Previous Site
- Puncture on the Posterior Curvature of the Heel or Arch
NEVER:

- Puncture Through a Bruised or Swollen Site
- Puncture the Heel More than Twice for any One Collection
- Use the Lancet More than Once
Heel Stick

1. Positively identify patient.
2. Wash hands & put on gloves.
3. Puncture the lateral medial part of the heel. NEVER puncture posterior curvature of heel! NEVER puncture the arch!
4. Make sure to inspect heel. Avoid areas with previous scarring or damage.
5. Warm the area for at least 3 minutes
   Warm tap water (39 – 42c) in towel or commercial heel warmer
6. Disinfect the area with a 70% alcohol prep pad. Scrub well.
7. Do NOT use betadine.
8. Dry the area with a sterile gauze.
   Do NOT use cotton balls – can interfere with blood flow.
9. Make sure the area is dry – Any alcohol left on the skin will cause the specimen to hemolyze.
10. Hold the foot with a firm grip.
    Grasp the foot so that the heel is exposed between thumb & index finger.
11. Puncture the site at a 90° angle, parallel to the bone.
    Stick across the heel prints.
12. Apply pressure to heel and activate the lancet.
13. Make sure the blade retracts.
14. NEVER puncture deeper than 1.2 - 2.2 mm - can cause osteomyelitis or sepsis – could injure bone, blood vessels, tendons, nerves, or cartilage.
15. Wipe off the first drop of blood, due to tissue fluid. Ease thumb pressure to the site and then apply intermittent pressure to obtain a good blood flow.
16. DO NOT MILK, SQUEEZE, OR MASSAGE THE AREA! It could cause the specimen to hemolyze and have excessive tissue fluid.
17. Collect the specimens in the proper tubes and correct order of draw. DO NOT SCOOP.
2. Wash hands & put on gloves.
3. Use only middle & ring finger for finger stick.
4. Clean finger with 70% alcohol prep pad. Scrub the area to remove dead cells. Rubbing the finger increases the blood flow. Let air dry or use a sterile gauze.
5. Apply pressure to the finger by wrapping your finger around the patient’s finger.
   Never go above the first crease of the finger
   Hold hand downward for better blood flow by the pull of gravity
6. Puncture the side of the fleshy pad area – it has less fluid and more capillaries to cut.

7. Puncture finger across (perpendicular) the fingerprint, so blood will bead up. If you puncture finger in line (parallel) with the fingerprint the blood will flow down fingerprint.
8. Wipe off the first drop of blood - it is contaminated with tissue fluid and therefore it will dilute the specimen.

9. A second drop will form and should be collected when touched by the tip of the micro-collection device.

10. Let the capillary blood flow freely down into the tube on contact. If blood becomes jammed in the collection top, gently tap on a hard surface to dislodge it so the blood can flow freely again to bottom of tube.

11. Gently apply pressure to finger and hold the puncture site in a downward position so the blood will free flow the tube.

12. DO NOT USE EXCESSIVE MILKING, MASSAGING OF THE FINGER, OR SCOOP THE BLOOD IN THE TUBE – This can contaminate the specimen with tissue fluid.
Order of Draw for S.P.

- Blood Gasses
- Slides
- Platelets
- EDTA Tubes
- Other Additive Tubes
- Serum (Clot) Tubes
## Quality Assurance for S.P.

- Make Sure Area is Completely Dry
- Do Not Squeeze Area too Tightly
- Document Blood Came from S.P.
- Document Any Problems
- Collect Platelets and Smears First
- Use Proper Collection Technique When Doing a Bilirubin
If the procedure must be performed on children under 2 years, then...

- Use a 23 – 25 gauge butterfly needle with a syringe (allows you to control the amount of vacuum applied)
- Use pediatric tubes for the transfer of the blood from the syringe method
- Use superficial veins on the back of the hand for all newborns and infants under 2

Remember never to use an area with edema, infection, or an IV line
Dorsal Hand Vein Procedures

1. Identify Patient.
2. Wash hands & put on gloves.
4. Select the hand that has visible veins. Warm the site if cold.
5. The phlebotomist’s middle and forefinger should encircle the infant’s wrist and are used to apply pressure to the dorsal veins. The phlebotomist’s thumb is placed against the infant’s fingers to flex wrist downward as the hand is examined.
6. Be careful bending the infant wrist. Bending the wrist too much can cause the vein to collapse. Lightly palpate the back of the infant’s hand to select the best vein and the direction.

7. Once the vein has been chosen, release the finger tourniquet so the blood can circulate. If you don’t see and feel a vein don’t attempt to draw blood.

8. Disinfect back of hand with 70% alcohol prep pad. Let air dry for 30 seconds or use a sterile gauze to dry.

9. Reposition the infant wrist, apply finger tourniquet and flex the infant’s hand.

10. Hold the needle with the wings of the butterfly wings bent together. The angle of the needle should be 5° angle. Be careful until the vein is punctured.
11. As soon as the blood appears in the tubing of the butterfly, let the wings of the needle unbend. The blood may flow slowly, because venous blood is low. If no blood appears, gently reposition the needle.

12. Pull the syringe plunger gently to fill with amount of blood required.

13. Microcollection tubes should be filled directly from the hub of the butterfly.

14. Release the finger tourniquet to allow the vein to refill. If the blood flow slows or stops, gently rotate the needle.

15. Release fingers from the infant’s wrist, quickly remove needle, and apply pressure to the site with a dry gauze.
16. Maintain direct pressure for 2 to 3 minutes or until the bleeding has stopped. Adhesive strips should not be used on neonates, because their skin is fragile.

17. Engage safety device from butterfly needle. Disconnect the blood-filled syringe form the butterfly.

18. Connect the syringe to transfer blood into vacuum tubes or use a Sarstedt devise. Discard the equipment in sharps container when you have finished.

19. Comfort infant & offer a sucrose nipple, if permitted.

20. Label tubes.


22. Let nurse know that you have finished.
High levels of Bilirubin cause...

- Jaundice (yellow skin coloring)
  - Infants are placed under special UV lamps to lower Bilirubin levels
- Brain Damage
- Death
- Transfusion may be needed
Proper collection procedure is CRUCIAL...

- Turn off UV lights to prevent breakdown of specimen
- Perform heel stick quickly to minimize exposure from light (must be protected during transportation & testing)
  - Amber-Colored Collection Tube
  - Aluminum Foil to Cover Collection Tube
- Be sure to collect specimen carefully to avoid hemolysis, which could falsely decrease Bilirubin results
- Collect specimen as close as possible to time ordered (the increase in Bilirubin levels depends on timing)
PKU Screening

High Levels of Phenylalanine Results in Brain Damage

• Proper collection procedure is CRUCIAL...
  • Perform heel stick collection
  • Collect in capillary tube
  • Apply blood to filter paper in pre-printed circles
  • Apply to one side of paper & allow to soak through
• Proper collection procedure is CRUCIAL...
  • Blood should not be smeared, touched, applied more than once, or layered with successive drops
  • Do not indent or scratch paper – causes inaccuracies
  • Transport to lab in biohazard bag or envelope
The Adolescent Wants to Know the “5 W’s”

1. WHO’S GOING TO DO THIS PROCEDURE?
2. WHAT’S GOING TO BE DONE?
3. WHEN ARE YOU GOING TO DO IT WHEN WILL IT BE OVER?
4. WHERE ARE YOU GOING TO STICK ME?
5. WHY ARE YOU DOING THIS TO ME?
Five Steps in Phlebotomy Procedures
Making Pediatric Draws Easier

#1. Have a Special Room/Cubicle

A. Quiet and away from large groups & noise
B. Decorate
C. Display Awards
#2. Build Trust

A. Reassure the patient that it is okay to be frightened

B. Allow the patient to scream or make faces, but instruct them NOT TO MOVE

C. Explain the procedure to the child, using words that can be understood
Five Steps in Phlebotomy Procedures
Making Pediatric Draws Easier

#2. Build Trust

D. Maintain eye contact
E. Answer questions the child/parent might have
F. Find out the child’s favorite song
G. Keep voice calm, but authoritative, yet friendly
#3. Have Assistant Hold Child

Holding Procedure as Follows:

The assistant places one hand palm up, under the child’s elbow, and other hand palm down, on the child’s wrist. The assistant’s fingers are placed in such a manner as to allow the child to squeeze the fingers.
Five Steps in Phlebotomy Procedures
Making Pediatric Draws Easier

#3. Have Assistant Hold Child

Holding Procedure as Follows:

For a Toddler: Lay him on an examination table on his back. From opposite side of the table, the assistant bends at waist, placing trunk gently, but firmly on that of the patient, placing hands as previously described.
Five Steps in Phlebotomy Procedures
Making Pediatric Draws Easier

#4. Do a “Quick Draw”

A. Have equipment close & check for problems
B. Know the type of vein & the device you will be using
C. Draw quickly & calmly, keeping the patient calm
#5. Finish with Finesse

A. Give promised rewards

B. Encourage school age children to share their experiences with classmates

C. Draw quickly & calmly, keeping patient calm

D. PRAISE! PRAISE! PRAISE!