



Memorandum

#14-108

TO: WIC Regional Directors
WIC Local Agency Directors

FROM: Amanda Hovis, Director
Nutrition Education/Clinic Services Unit
Nutrition Services Section

DATE: September 17, 2014

SUBJECT: Clarification of Blood-Collection Techniques

This memo is to clarify blood-collection techniques, particularly the step-by-step order of when to wash hands and when to put on disposable gloves. The following guideline should be shared with all staff who collect blood samples for hemoglobin and hematocrit values.

1. Begin with a clean work area.
2. Wash hands with liquid soap and water. Using hand sanitizer can take the place of hand washing.
3. Gather blood-collection equipment and supplies.
4. Put disposable gloves on both hands.
5. Cleanse the puncture site.
6. Puncture the skin using a sterile, disposable lancet. Dispose lancet into sharps container.
7. Wipe away first drop(s) of blood. (Per manufacturer's instructions)
8. Collect blood sample in a cuvette or capillary tube.
9. Place sample in hemoglobinometer or centrifuge.
10. Determine hemoglobin or hematocrit value.
11. Dispose cuvette or capillary tube into a sharps container; gloves and other waste into a biohazard or office trash receptacle.
12. Record results

Staff members should wash/sanitize hands before the first blood collection of the day, between participants (which includes family members), and after the last blood collection. Gloves provide protection for both staff and participants. Anytime there is blood contamination or damage to the gloves, such as a tear, staff should wash hands thoroughly and replace gloves.

If there has been some sort of delay in the blood collection process or obvious contamination, such as lunch break and/or any eating event, smoking/bathroom break, etc., then hands should be washed before collecting the next blood sample. The cold and flu season may also bring about a personal desire to wash hands more frequently. However when performing one blood collection directly after another, it is not necessary to wash hands twice consecutively between participants. In such instances, one hand-washing and a change of gloves between participants will suffice.

If staff members prefer to wear disposable gloves while obtaining a participant's height and weight, those gloves should be removed and disposed of *prior* to collecting blood. A new pair of disposable gloves

shall be put on immediately before blood collection procedures begin.

Future revisions of the Texas WIC Clinic Assessment Manual (CAM) and the WIC Certification Specialist (WCS) Manual will reflect these clarifications. The revised CAM procedural instructions are attached. WIC staff members should use the poster *Collecting Blood Samples: Do It Right the First Time* (stock #13-06-12908) which provides step-by-step blood collection instructions. The poster is a useful job aid to have in blood collection areas. It is available for ordering from the WIC online catalog.

If you have further questions or need additional information, please contact Liz Bruns, Nutrition Training Specialist at Elizabeth.Bruns@dshs.state.tx.us or (512) 341-4585.

Attachment

Hemoglobin and Hematocrit

Texas WIC Program Procedure Guidelines – CS: 17.0

Instructions for Determination of Hemoglobin / Hematocrit

1. All WIC staff performing hematological testing must be trained on the manufacturer's instructions for the particular brand(s) of equipment being used at the local agency.
2. Obtain a sample from the applicant's finger (preferably ring or middle) or heel. Because the heel has a larger surface area and is easy to grasp, it is recommended that the heel be used for infants and children who are less than 1 year of age and/or who are not yet walking.
3. For applicants who provide medical data from their health care source, including hemoglobin or hematocrit test results, refer to CS: 17.0.

For additional information on performing hemoglobin/hematocrit tests, refer to Texas WIC training resources and the manufacturer's instructions for the particular brand(s) of equipment being used at the local agency.

WIC Staff have the following training resources available:

Screening for Iron Deficiency Anemia Module (Stock no. 13-06-11477)

WCS Manual, Biochemical Data Collection Module 9

Collecting Blood Samples: Do It Right the First Time Poster (Stock no. 13-06-12908)

Collecting Blood Samples: Do It Right the First Time DVD (Stock no. DV0379)

Preparation:

1. Begin with a clean work area & testing equipment.
Note: *Sanitize the blood collection area before the first participant of the day and after any blood splatter or contamination events. Change surface paper between participants/families. If paper becomes contaminated between family members, change paper again.*
2. Have the participant sit comfortably. Gently restrain children as necessary.
3. Explain the blood collection procedure.
4. Wash hands with liquid soap and water.
Note: *Using hand sanitizer can take the place of hand washing. If hands become contaminated prior to putting on gloves (e.g. bathroom/lunch/break time, touching dirty equipment, handling another participant), then hands should be re-washed.*
5. Gather blood-collection equipment and supplies.
6. Wear disposable gloves on both hands.

Note: *Gloves should NOT be reused. Wear a fresh pair of gloves to collect blood samples for each applicant (including family members). Gloves should NOT be washed or disinfected for continued use.*

Obtaining Blood Sample:

1. Cleanse the puncture site with an alcohol prep pad or 70% alcohol and a gauze square. When determining whether to air dry or wipe dry, follow the manufacturer's instructions for the particular brand of hemoglobin or hematocrit equipment being used.
2. Using a sterile, disposable lancet, make a quick but firm jab that is deep enough to allow blood to flow freely. Follow manufacturer's instructions if a mechanical lancet, such as an autolet, is used. Mechanical lancets must have disposable lancets and platforms.
 - a. Dispose of used lancets and platforms in a puncture-resistant container (such as a Sharps container).
 - b. NEVER try to re-use a lancet.
3. When determining the number of drops of blood to wipe away with dry gauze, follow the manufacturer's instructions for the particular brand of hemoglobin or hematocrit equipment being used.
4. Wait for a spontaneous flow of blood and collect the blood. If blood does not flow freely, try lowering the applicant's hand. If lowering the hand doesn't help, puncture a different finger or site in the heel. Do not milk or squeeze the puncture as this may cause tissue fluids to mix with the blood and dilute the sample.
5. When obtaining a blood sample, place the end of a clean capillary tube or cuvette at the base of a blood droplet and fill with one continuous draw. The capillary tube or cuvette should maintain contact with the blood droplet to avoid air bubbles.
 - a. An uncalibrated capillary tube should be filled $\frac{1}{2}$ to $\frac{3}{4}$ full.
 - b. A calibrated tube should be filled from the far end of the calibration mark to the calibration mark. A calibrated tube should be about $\frac{2}{3}$ to $\frac{3}{4}$ filled. Whenever possible, fill two tubes.
 - c. A cuvette should be filled until full. Wipe any excess blood from the sides of the cuvette using gauze squares.
6. Use the following instructions for determining hematocrit or hemoglobin values depending on the type of equipment used at your local agency/clinic.

Determining Hematocrit Level:

- A. Rotate the capillary tube 5 to 6 times to mix the heparin-lining (anti-coagulant) with the blood.
- B. Seal the tube on the “collection” end with plastic clay sealant and place the tube in the centrifuge.
- C. When blood collection is complete, press a gauze square to the puncture site.
- D. Follow the manufacturer’s instructions for spinning the sample.
- E. If a capillary tube has air bubbles after spinning and a second sample was not collected, discard the tube and collect another blood sample.
- F. Use a hematocrit reading device. Do NOT use the ‘Readacrit’ on top of a centrifuge.

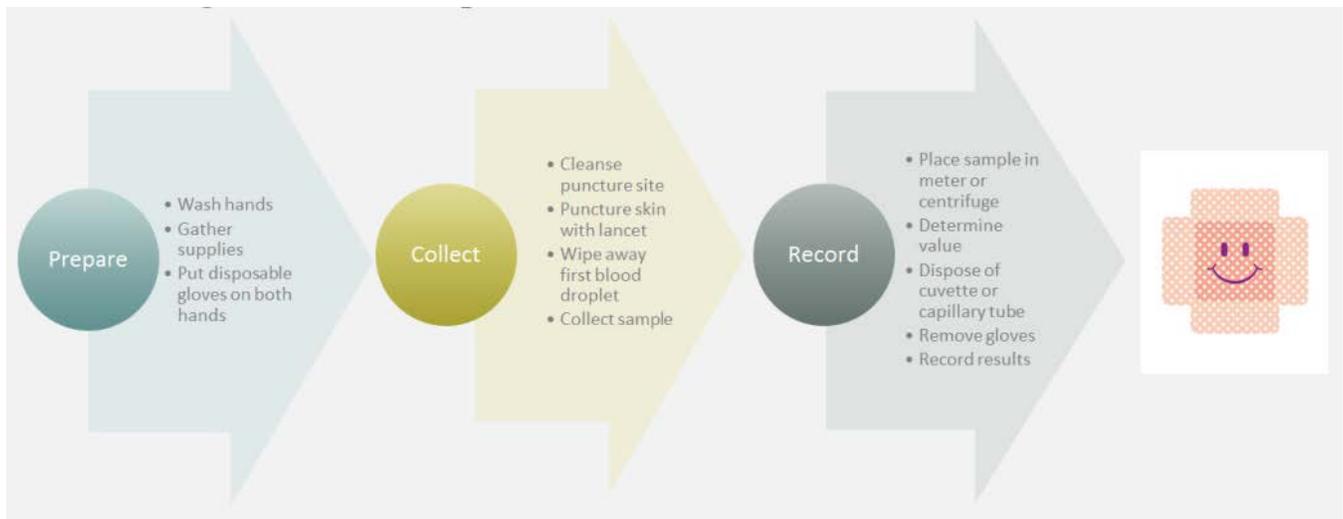
Note: *If using HemataSTAT equipment, it is acceptable to read hematocrit values with the built-in analyzer. Follow the manufacturer’s instructions carefully.*

- G. Dispose of capillary tube into puncture proof or sharps container.
- H. Remove and dispose of gloves.
- I. Record the value to the nearest whole number on the applicant’s assessment form.

Determining Hemoglobin Level:

- A. Obtain blood sample using procedures described above.
- B. Place the filled cuvette in a hemoglobinometer and follow the manufacturer’s instructions for operating the equipment.
- C. Dispose cuvette into puncture proof or sharps container.
- D. Remove and dispose of gloves.
- E. Record the value on the applicant’s assessment form. Hemoglobin values are not rounded.

Note: *When performing one blood collection directly after another (e.g. between family members), it is not necessary to wash hands twice consecutively between participants. In such instances, one hand-washing and a change of gloves between participants will suffice.*



Equipment for Determination of Hemoglobin and Hematocrit

Hemoglobin

1. Hemoglobinometer, also known as a photometer
2. Reagent cuvettes or microcuvettes

Hematocrit

1. Centrifuge or microcentrifuge, such as a HemataSTAT®
2. Capillary tubes
3. Plastic clay capillary tube sealant
4. Hematocrit reading device

Supplies – The following supplies are needed when obtaining blood samples regardless of the type of test being performed:

1. Disposable gloves
2. Alcohol (70% isopropyl) or alcohol prep pads
3. Gauze squares
4. Lancets
5. Sharps container and biohazard waste receptacle
6. Optional (not recommended): cotton balls and/or adhesive bandage strips (Band-Aids) to slow/stop blood flow

Calibration of Hemoglobin and Hematocrit Equipment – Equipment shall be calibrated and maintained according to Clinical Laboratory Improvement Amendments (CLIA) requirements in the Federal Regulations, 42 CFR PART 493.1215, 493.1217.

1. Equipment shall be calibrated in accordance with the manufacturer's recommendations and instructions in order to comply with CLIA regulations.

2. If the clinic has a certificate of moderate complexity, a quality control test shall be performed twice a day and results recorded in a maintenance log.
3. All preventive maintenance performed on equipment shall be recorded in a maintenance log.