



**Trainee Edition**

Arizona WIC Training

# Hematology Guidebook



ARIZONA DEPARTMENT  
OF HEALTH SERVICES

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## What Will You Learn?

In this guidebook, you will learn how to perform hemoglobin screening safely and accurately. You will also learn how to explain the risks of anemia to participants, and offer ways to improve iron status through dietary choices.

After completing the Hematology LMS Course and guidebook, you will be able to:

- Identify which participants require blood testing
- Describe important functions of hemoglobin
- Explain how anemia is associated with low hemoglobin
- Identify the appropriate lancet to use with different participants
- Identify proper safety precautions to take in order to obtain hemoglobin blood values
- Identify the steps to take to determine a participant's hemoglobin value

## Items Needed for This Course

- Pen or pencil
- Local Agency Referral List
- Access to the Arizona WIC Laboratory Procedure Manual, either a hard copy or on the website <https://azdhs.gov/documents/prevention/azwic/manuals/azwic-lab-manual.pdf>. [Navigate to azwic.gov: WIC Home → Local Agencies → WIC Manuals → Arizona WIC Laboratory Procedure Manual]. To save paper, you do not need to make copies of or print the policies or procedures.

## Recommended Time

- Approximate time it takes to complete the Hematology LMS course: 1-2 hours
- Approximate time it takes to complete the face-to-face activities and discussion: 2-3 hours

## Things to Remember

- This guidebook is yours to keep.
- You are encouraged to take notes, highlight, and write in the guidebook.
- As your trainer chooses, you may work in a group or as an individual.
- You are encouraged to ask your trainer(s) for help, ask questions about the information in the course, or ask any questions about additional topics related to hematology training.

## Hematology Course Instructions

- ☐ Log onto <https://az.train.org/DesktopShell.aspx>
- ☐ Open and complete all modules of the Hematology LMS course and the corresponding Hematology Activities in this guidebook.
- ☐ At your trainer's direction, complete the Hematology LMS course and guidebook, either individually, with other trainees, or with your trainer.
- ☐ Complete the Hematology Post-Test
- ☐ Meet with your trainer at their discretion to discuss each module of the Hematology LMS course and the associated activities in this guidebook, either after each module or after all modules have been completed.

## **Module 1: Hematology Introduction**

### MODULE 1 COMPETENCIES:

1. Trainees will be able to identify which participants require blood testing and when their next blood test will be required.
2. Trainees will be able to explain why the WIC Program tests its participants for iron-deficiency anemia.
3. Trainees will be able to describe what hemoglobin is and its most important functions in the body.
4. Trainees will be able to explain how anemia is associated with low hemoglobin.
5. Trainees will be able to explain what anemia is and the consequences of untreated anemia.

### **Module 1: Activity 1**

Directions:

Complete the following table to indicate if/when bloodwork is required for each situation.

Participant	Is Bloodwork Required Now?	When Will Next Hgb Test be Required?
8-month-old certifying infant		
11-month-old certifying infant		
16-month-old certifying infant		
2-year-old with below-normal Hgb recorded 3 months ago during Certification appointment		
3-year-old with normal Hgb recorded 1 month ago during Certification appointment		
Certifying pregnant woman		
Postpartum woman certifying her 7-day-old infant		

## **Module 1: Activity 2**

1. Why do we screen WIC participants for iron-deficiency anemia?
2. What is hemoglobin and what are its most important functions in the body?
3. How are low hemoglobin levels associated with anemia?
4. What is anemia and what are the risks associated with it?

## Module 2: Masimo Pronto

### MODULE 2 COMPETENCIES:

1. Trainees will be able to determine which participants require hematology to be completed via capillary sampling, and which can be tested using the Masimo Pronto.
2. Trainees will be able to identify the main features of the Masimo Pronto as well as interpret the messages it displays.
3. Trainees will be able to describe the steps to take when selecting and appropriately placing a participant's finger inside the Masimo Pronto.
4. Trainees will be able to identify the steps to take to determine a participant's hemoglobin value using the Masimo Pronto.

## Module 2 Questions

1. Complete the following table by identifying (with a checkmark) which participants are able to have their hemoglobin measured with the Masimo Pronto, and which will need to have their hemoglobin measured via capillary sampling.

Participant	Masimo Pronto	Capillary Sampling
Pregnant Woman	✓	
2-Year-Old Child		
10-Month-Old Child		
22-Month-Old Child		
Breastfeeding Woman		



2. Explain the main features of the Masimo Pronto device and how to interpret normal display messages seen during a test, including: PI, Hb, Low SIQ Indicator, Battery Level Indicator, Spot Check Progress Indicator.
3. Briefly describe the steps in choosing a finger and appropriate placement in the finger sensor when performing a hemoglobin blood test using the Masimo Pronto.

4. Order the following steps (Step 1 to Step 16) for obtaining a hemoglobin blood value using the Masimo Pronto. (Refer to the [AZ WIC Laboratory Procedure Manual](#).)

Step__	Position the participant comfortably seated with their arm extended, (but lower than their heart), with their palm facing down.
Step__	Explain the procedure to the Authorized Representative in simple terms.
Step__	Immediately record the value obtained, so that it can be entered into the HANDS medical screen.
Step__	Measure the participant's finger using the sensor size gauge.
Step__	Press power button to activate the Masimo Pronto.
Step__	Prior to any lab testing, have the AR read and sign the "Consent" signature type using the signature pad.
Step__	If necessary, disconnect the sensor, remove the patient cable, and connect the correct size sensor.
Step__	Remove anything from the participant's arm that can impede blood flow. Select the participant's testing finger. For adults, you may use the middle, or ring finger of either hand. For children, you may use the middle, ring finger or thumb of either hand.
Step__	Remove the sensor from the participant's finger.
Step__	Place the participant's selected finger inside the sensor. Make sure the fingertip is inserted all the way and touching the finger stop inside the sensor.
Step__	Cleanse the site thoroughly with an alcohol pad.
Step__	Cover the sensor with a hand, or cloth to shield the sensor from excessive light.
Step__	Turn off the Masimo Pronto by holding down the Power Button for 2 seconds.
Step__	The selected location for using the Pronto device should be a comfortable area, free of excessive noise or distractions, such as a private office space.
Step__	Perform Hand Hygiene (either by washing hands or using an alcohol-based hand sanitizer).
Step__	Press SpHb button when ready to view SpHb results.

## Module 3: Capillary Sampling

### MODULE 3 COMPETENCIES:

1. Trainees will be able to determine appropriate lancet sizes to use for fingersticks.
2. Trainees will be able to determine appropriate lancet sizes to use for heelsticks.
3. Trainees will be able to identify the steps to take to determine a participant's hemoglobin value via capillary sampling.
4. Trainees will be familiar with what to do in the event that a microcuvette doesn't completely fill or there are air bubbles present.

### Module 3 Questions

1. A woman has dark fingernail polish and you are unable to get a reading with the Pronto. When you complete the screening using the HemoCue, which lancet does your agency recommend using? (Refer to the [AZ WIC Laboratory Procedure Manual](#).)
2. You decide to perform a heel puncture on a 9-month-old child to complete the anemia screening. Which lancet does your agency recommend using? (Refer to the [AZ WIC Laboratory Procedure Manual](#).)

3. Order each of the following steps (1-18) for performing a capillary sampling hemoglobin test based on its description. (Refer to the [AZ WIC Laboratory Procedure Manual](#).)

Step__	Wash hands with soap and water. If a sink is unavailable, cleanse with an alcohol-based hand cleanser or hand wipes.
Step__	If any blood spills on the Hemoglobin Analyzer, work surfaces, or skin, clean with a 10% bleach solution or disinfectant spray immediately.
Step__	When performing a fingerstick, apply gentle pressure near the participants finger joint. When performing a heelstick, grasp the heel between your thumb and forefinger with your other fingers underneath the infant's calf. Apply a small amount of pressure to flex the foot back.
Step__	Choose a work area to complete the capillary sampling test.
Step__	The finger should not be cold, blue, swollen, or calloused. If cold, warm the finger by holding it in your hands, rubbing it for a minute, or by having the participant wash their hands vigorously with warm running water and soap or gently shake their hands.
Step__	Discard all contaminated materials (i.e., lancets and cuvettes) in a special receptacle usually referred to as a "sharps" container. Throw away other potentially-infectious trash that is saturated with blood in a red, plastic biohazard bag. Waste, such as lint-free tissue, alcohol preps, gloves, bandages, and wrappers that contain blood but are not dripping can be discarded in a regular trash bag.
Step__	If performing a fingerstick, puncture off the centerline of the participant's fingertip using a lancet. If performing a heelstick, puncture only on the medial or lateral side of the bottom surface of the heel using a lancet.
Step__	Discard gloves and wash hands after each client and after handling contaminated waste.
Step__	To ensure accuracy, wipe away the first two drops of blood and collect the third drop. Ensure the drop of blood is big enough to fill the entire cuvette, including the tip. Avoid "milking" the finger.
Step__	Place dry gauze or lint-free tissue over the puncture site and apply gentle pressure until the wound has stopped bleeding. Elevating the hand or foot above the level of the heart will help to stop the blood flow. Apply the bandage. Do not use bandages on the finger of a child less than two years old to prevent potential ingestion and choking.
Step__	In simple terms, describe to the participant the steps you will be taking to measure their hemoglobin.
Step__	Clean the finger or heel with an alcohol pad or warm water and soap. Wipe the site with a tissue or lint-free wipe. Be sure the skin is dry.

Step__	Choose the finger (middle or ring, but choose a finger that doesn't have a ring on it or have the participant remove the ring). The heel may also be chosen for infants 9-11 months of age that have not yet began to learn to walk.
Step__	Gather all necessary supplies (i.e., hemoglobin analyzer, lint free wipes or gauze, alcohol prep pad, cuvette, bandage, lancet, 10% bleach solution or disinfectant spray, sharps container, etc.).
Step__	Measure the hemoglobin value in the microcuvette by following the manufacturer's directions for the hemoglobin analyzer used in your local agency's clinic. Immediately record the value obtained, so that it can be entered in to the HANDS medical screen.
Step__	When performing a fingerstick, position the participant comfortably seated with their arm extended and palm facing up. When performing a heelstick, position the infant laying comfortably on their back.
Step__	Prior to any lab testing, have the AR read and sign the "Consent" signature type using the signature pad.
Step__	Wipe off the flat outside surfaces of the microcuvette using gauze or a lint-free wipe. Avoid wiping the open slit of the microcuvette.

4. What do you do if the cuvette does not fill completely on the first try, or if air bubbles are visible?

## Module 4: Required Actions and Referrals

MODULE 3 COMPETENCIES:

1. Trainees will be able to describe what steps they would take for participants assigned Risk Code 201.2.
2. Trainees will be able to describe what steps they would take for participants assigned Risk Code 201.2.
3. Trainees will be able to describe what steps they would take for participants with a very low hemoglobin value.

## Module 4 Questions

1. What steps would you take for a participant assigned Risk Code 201.2?
2. What steps would you take for a participant assigned Risk Code 201.1?
3. What steps would you take for a participant with a very low hemoglobin value?

## **Supplemental Hematology Training**

**You will receive Supplemental Hematology Training from your trainer to ensure your confidence when obtaining hemoglobin blood values using both a Hemoglobin Analyzer and Masimo Pronto.**

**After you've completed all modules of the Hematology LMS course and the associated activities in this guidebook, speak with your trainer to determine when they would like to facilitate Supplemental Hematology Training with you.**