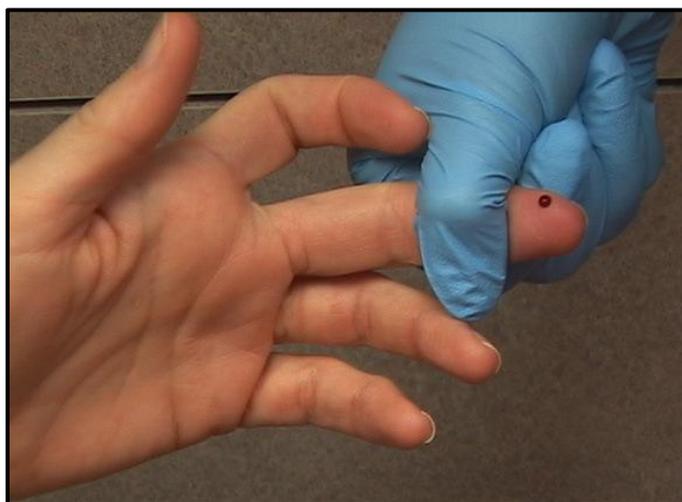


Arizona WIC Training Hematology Course



Nutrition Educator Guidebook

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What Will the Nutrition Educator Learn?

Testing and assessing hemoglobin levels for WIC participants is important for helping WIC nutrition educators determine if a WIC participant has a possible health risk(s). The nutrition educator will learn how to perform a hemoglobin test correctly and accurately.

The Hematology course consists of two Modules:

Module 1: Hematology Introduction

Module 2: Hemoglobin Blood Test

After completing the Hematology course, the nutrition educator will:

- ◆ Summarize the role of hemoglobin in red blood cells.
- ◆ Define anemia.
- ◆ Explain potential causes of anemia.
- ◆ Explain the symptoms of anemia.
- ◆ Explain the consequences of untreated anemia.
- ◆ Explain blood testing exemptions per the AZ WIC Policy and Procedure Manual.
- ◆ Identify the appropriate lancet to use on different participants.
- ◆ Explain the steps and demonstrate two hemoglobin measurements for a finger stick.
- ◆ Explain the steps and demonstrate two hemoglobin measurements for a heel stick.

Instruction Level

Prerequisite for taking the Hematology course: None

Items Needed for this Course

- ◆ Pen or pencil
- ◆ Access to the Arizona WIC Laboratory Procedure Manual, either a hard copy or on the website, www.azwic.gov. 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

Module 1: Hematology Introduction

Nutrition Educator's Steps:

Begin the LMS Hematology Course

- Log onto <https://az.train.org/DesktopShell.aspx>
- Complete the Hematology Pre-Test.
- Open the Hematology Online Course.
- Optional: open the Hematology Course Companion Manual to reference throughout the course. Locate the Course Companion Manual by clicking on the "Resources" button within the LMS course.
- Complete Module 1: Hematology Introduction.
- Complete Hematology Activities 1, 2, and 3, either individually or with the other nutrition educator(s). Some activities may require the presence of your trainer. Please meet with your trainer prior to these activities.
- Meet with your trainer to discuss the Hematology Introduction Module and activities 1, 2, and 3.

Trainer's Steps:

- Have the nutrition educator complete each activity either individually or as a group with the other nutrition educators.
- Some activities in the Hematology module require the trainer to observe the nutrition educator performing specific tasks. Observation is mandatory for determining competency.
- Once finished, the nutrition educator(s) shall meet with the trainer to review the answers to the activities. Please answer all questions the nutrition educator may have and clarify any incorrect answers.
- Verify the nutrition educator fully understands the information and procedures.



Hint: If needed, each activity identifies a specific slide(s) within the course in which you can find the information necessary to complete the activity.

Hematology Activity 1

COMPETENCIES:

1. Nutrition educator is able to summarize the role of hemoglobin in red blood cells.
2. Nutrition educator is able to explain potential causes of anemia.

Mock Scenario: You are preparing the items needed for a hemoglobin blood test for a non-smoking, pregnant participant in her 2nd trimester. She asks you what the test is for.

- a. Explain to her the purpose of the hemoglobin test. (Module 1, Slide 4)

- b. Explain to her what hemoglobin is. (Module 1, Slide 5)

Mock Scenario, continued: You proceed to check her hemoglobin and the results show 8.0 g/dL, which is well below the normal range. She asks you what the causes of low hemoglobin/anemia are.

- c. In a conversational manner, address the concerns she has about the possible causes of low hemoglobin/anemia. (Module 1, Slide 10, 11, 13, 14, 15, 16, and 17)

- d. What are three ways the WIC program addresses iron with participants? (Module 1, Slide 19)

Hematology Activity 2

COMPETENCIES:

1. Nutrition educator is able to define anemia.
2. Nutrition educator is able to explain the symptoms of anemia.
3. Nutrition educator is able to explain the consequences of untreated anemia.

Mock Scenario: As you are certifying a 3 year old boy, his mother tells you she thinks he might be anemic, but she has not had him tested.

- a. What can you tell her about anemia? (Module 1, Slide 6)

- b. What are the symptoms of anemia you can tell her about? (Module 1, Slide 7)

Mock Scenario, continued: The mom is concerned about her son and asks, “What are the consequences of untreated anemia?”

- c. What do you tell her about potential consequences? (Module 1, Slide 7) Explain whether it is appropriate to use the Masimo Pronto or HemoCue to complete the hemoglobin screening.

DID YOU KNOW?

When a WIC employee conducts a hemoglobin test, the results of the test are used to screen for **(not diagnose)** anemia.

Hematology Activity 3

COMPENTENCY:

1. Nutrition educator is able to explain blood testing exemptions per the AZ WIC Laboratory Procedure Manual.

Mock Scenario: Prior to testing a child's hemoglobin, the mother tells you her child has hemophilia.

- a. What is the protocol for documenting this situation? (Module 1, Slide 25)

- b. What are the other blood testing exemptions for the Arizona WIC program? (AZ WIC Laboratory Procedure Manual, Appendix A)

- c. Which 99.X code is used when hemophilia or a religious reason is present that prevent blood from being collected?

- d. When is code 99.5 used as a placeholder in the "Hgb" field in the Medical screen of the WIC computer system?

- e. When is code 99.7 used as a placeholder in the "Hgb" field in the Medical screen of the WIC computer system?

- f. When is code 99.8 used as a placeholder in the "Hgb" field in the Medical screen of the WIC computer system?

Module 2: Hematology Blood Test

Nutrition Educator's Steps:

Return to the LMS Hematology Course

- If necessary, log back onto <https://az.train.org/DesktopShell.aspx>
- If necessary, re-open the Hematology Course.
- Complete Module 2: Hematology Blood Test
- Complete Hematology Activities 4 and 5, either individually or with the other nutrition educator(s). Some activities require the presence of your trainer. Please meet with your trainer prior to these activities.
- Meet with your trainer to discuss the Hematology Blood Test Module and activities 4 and 5.

Trainer's Steps:

- Have the nutrition educator complete each activity either individually or as a group with the other nutrition educators.
- Once finished, the nutrition educator shall meet with the trainer to review the answers to the activities. Please answer all questions the nutrition educator may have and clarify any incorrect answers.
- Verify the nutrition educator fully understands the information and procedures.

Hematology Activity 4

COMPETENCIES:

1. Nutrition educator is able to identify the appropriate lancet to use on different participants.
2. Nutrition educator is able to verbally explain the steps involved in a hemoglobin finger stick test.
3. Nutrition educator is able to demonstrate two hemoglobin measurements for a finger stick.

Mock Scenario: A postpartum mom comes into the clinic one month after certification. She is due for her postpartum hemoglobin test.

- a. Explain the hemoglobin test procedure to the participant in simple terms. Reassure them.
- b. Mom 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 for a finger stick? (refer to [AZ WIC Laboratory Procedure Manual](#), and lancets vary by agency)
- c. **Verbally, explain to your trainer** the steps of a hemoglobin finger stick test. (Module 2, Slide 9 and 10)

Step One: Wash Hands with soap and water. If a sink is unavailable, cleanse with an alcohol based hand cleanser or hand wipes. Put gloves on now or after supplies are assembled.

Step Two: Assemble Supplies (ie: lint free wipes or gauze, alcohol prep pad, cuvette, band aid, lancet, 10% bleach solution. or disinfectant spray, sharps container, HemoCue machine)

Step Three: Turn on the HemoCue Machine

Step Four: Check if error messages are displayed

Step Five: Position the WIC participant, 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)

Step Six: Warm the Finger. 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 Seven: Cleanse the Finger with an alcohol pad or with warm water and soap.

Step Eight: Hold the Finger

Step Nine: Puncture the Finger

Step Ten: Fill the Cuvette. 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 Eleven: Place the Cuvette in the HemoCue Machine to Measure the Hemoglobin Value

Step Twelve: Seal and Bandage the Finger. Do not use bandages on the finger of a child less than two years old to prevent potential ingestion and choking.

Step Thirteen: Cleanse the Work Area

Step Fourteen: Discard all contaminated sharps (ie: 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 Fifteen: Remove Gloves and Wash Hands

Hematology Activity 4, continued

- d. What do you do if the cuvette does not fill completely on the first try, or if air bubbles are visible? (AZ WIC Laboratory Procedure Manual)

Discard the cuvette, wipe the puncture site and allow a new, larger bead of blood to form before collecting into the cuvette again. If additional blood is not available, a new finger stick must be performed.

Hematology Activity 5

COMPETENCIES:

1. Nutrition educator is able to verbally explain the steps involved in a hemoglobin heel stick test.
2. Nutrition educator is able to demonstrate two hemoglobin measurements for a heel stick. (in the case that infant participants requiring a heel stick are not available before the completion of the training timeline).

Mock Scenario: A 1 year old is being certified today. Mom has signed the Rights and Obligations form and now it is time to check hemoglobin.

- a. What type of hemoglobin test should be performed on this participant? (AZ WIC Laboratory Procedure Manual)
- b. Which lancet does your agency recommend using for a 1 year old child? (AZ WIC Laboratory Procedure Manual, and lancets vary by agency)

- c. **Verbally, explain to your trainer** the steps of a hemoglobin heel stick test.

Step One: Fill out the Rights and Obligations Form and have the participant sign.

Step Two: Wash Hands with soap and water. If a sink is unavailable, cleanse with an alcohol-based hand cleanser or hand wipes. Put gloves on now or after supplies are assembled.

Step Three: Assemble Supplies (ie: lint free wipes or gauze, alcohol prep pad, cuvette, band aid, lancet, 10% bleach solution. or disinfectant spray, sharps container, HemoCue machine)

Step Four: Turn on the HemoCue Machine

Step Five: Check if Error Messages are displayed

Step Six: Position the WIC participant. For a heel stick, a seated adult holds the child over the adult's shoulder or child lays face-down across the adult's lap. Use either side of the plantar (bottom) surface of the heel when the child is held over the caregiver's shoulder. Never puncture the back curvature of the heel.

Step Seven: Warm the heel, if necessary. The site should not be cold, blue, swollen or calloused. If cold, warm the site by holding it in your hands, rubbing it for a minute, or by warming the site with a warm paper towel.

Step Eight: Cleanse the Heel

Step Nine: Hold the Heel. Position the foot below the child's heart. Encircle the heel by wrapping the index finger around the arch and the thumb around the bottom of the heel. Grasp the heel firmly between your thumb and index finger using your thumb in a gentle rocking movement.

Step Ten: Puncture the Heel only on the medial or lateral side of the bottom surface of the heel.

Step Eleven: Fill the Cuvette. 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.

Step Twelve: Place the Cuvette in the HemoCue Machine to Measure the Hemoglobin Value.

Step Thirteen: Seal and Bandage the Heel

Step Fourteen: Cleanse the Work Area

Hematology Activity 5, continued

Step Fifteen: Discard all contaminated sharps (ie: lancets and cuvettes) in a special receptacle usually referred to as “sharps” containers. 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 Sixteen: Remove Gloves and Wash Hands

Hematology Post-Test Completion

Nutrition Educator’s Steps:

Return to the LMS Hematology Course

- If necessary, log back onto <https://az.train.org/DesktopShell.aspx>
- Complete the Hematology Post-Test.
- Share the results of your Post-test with your trainer.

Other Training Topics related to Hematology

Training Topic	Trainer’s Initials
Hemoglobin Assessment	
Anemia Referral presentation  OR an equivalent anemia referral training.	
How to determine when to check hemoglobin for each category. (AZ WIC Lab Manual, Appendix A)	
How to determine conditions appropriate to use the Masimo Pronto or the HemoCue to conduct hemoglobin screening.	
Lead Screening	
Lead screening policy and procedure. (Refer to Chapter 6 in the Arizona WIC Policy and Procedure Manual)	
Requirements for documenting Lead in AIM.	
Lead literature available for WIC participants.	
Hemocue Quality Control Testing – CLIA	
Policy and Procedures	
Hemocue Hemoglobin Monitor Competency Checklist	
Quality Control Log	
Review Factors Responsible for poor results.	



Indicates a training presentation is available on Arizona WIC’s website.

Competency Achievement Checklist / Hematology Curriculum

Nutrition Educator's Name _____

Local Agency _____

Hematology Competency Achievement Checklist			
At this checkpoint:	Evaluate this:	Competency Achievement Date	Initials
LMS Pre-test	Nutrition educator completed the LMS Pre-test.		
Learning Activities	All activities for the Hematology course were <i>discussed</i> with the nutrition educator and reviewed for accuracy.		
Competencies	Nutrition educator is able to summarize the role of hemoglobin in red blood cells.		
	Nutrition educator is able to define anemia.		
	Nutrition educator is able to explain the causes of anemia.		
	Nutrition educator is able to explain the symptoms of anemia.		
	Nutrition educator is able to explain the consequences of untreated anemia.		
	Nutrition educator is able to explain blood testing exemption reasons per the AZ WIC Policy and Procedure Manual.		
	Nutrition educator is able to identify the appropriate lancet to use, depending on the participant.		
	Nutrition educator is able to verbally explain the steps involved in a hemoglobin finger stick test.		
	Nutrition educator is able to accurately demonstrate two hemoglobin measurements for a finger stick.		
	Nutrition educator is able to verbally explain the steps involved in a hemoglobin heel stick test.		
	Nutrition educator is able to accurately demonstrate two hemoglobin measurements for a heel stick.		
LMS Post-test	Nutrition educator has achieved a score of 80% or better.		

I verify _____ has achieved the learning objectives of the *Online Hematology Course* and is competent to continue with WIC training.

The learner meets the criteria set by the State to receive a *Certificate of Completion* for this course.

Trainer(s) Signature _____ Date _____

***File this signed competency achievement checklist in the appropriate employee training file, in accordance with WIC policy.**