



PhenX Measure: Complete Blood Count (CBC) (#220500)

PhenX Protocol: Complete Blood Count (CBC) (#220501)

Date of Interview/Examination (MM/DD/YYYY): \_\_\_\_\_

### Exclusion Criteria

Persons will be excluded from this component if they:

- Report that they have hemophilia; or
- Report that they have received cancer chemotherapy in the last 4 weeks

*SP = Sample Person.*

1. Do you have hemophilia?

1  Yes

2  No

7  Refused

9  Don't Know

If the SP answers, "Yes," the SP is excluded from the blood draw.

If SP answer "No" or "Don't Know," blood is drawn from the SP.

2. Have you received cancer chemotherapy in the past four weeks or do you anticipate such therapy in the next four weeks?

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1  Yes

2  No

7  Refused

9  Don't Know

If the SP answers, "Yes," the SP is excluded from the blood draw.

If SP answer "No" or "Don't Know," blood is drawn from the SP.

### **Venipuncture Procedures**

Editor's Note: Please review chapter 4 of the Laboratory Procedures Manual from the 2009-2010 National Health and Nutrition Examination Survey for a full description of Phlebotomy procedures.

Venipuncture should generally be performed using the median cubital, cephalic, or basilic veins in the left arm unless this arm is unsuitable. If the veins in the left arm are unsuitable, look for suitable veins on the right arm. If the veins in the antecubital space on both arms are not suitable, then look for veins in the forearm or dorsal side of the hand on the left arm/hand and then the right arm/hand.

Fill a 3 or 4 ml K<sub>3</sub> EDTA tube with blood.

### **Recording the Results of the Venipuncture Procedure**

Immediately after completing the venipuncture, record the results of the blood draw, the reasons for a tube not being drawn according to the protocol, and any comments about the venipuncture.

### **Perform CBC Analyses**

*Note: a full description of this procedure is found in the 2009-2010 NHANES Lab Procedures Manual. If the Coulter® HMX Hematology Analyzer is utilized, it should be calibrated per the manufacturer's recommendations. NHANES performs the test in duplicate, but this may not be necessary.*

The following parameters and units are measured in the CBC panel test.

White blood cell count (1000 cells/uL)

Lymphocyte (%)

Monocyte (%)

Segmented neutrophils (%)

Eosinophils (%)

Basophils (%)

Lymphocyte number (1000 cells/uL)

Monocyte number (1000 cells/uL)

Segmented neutrophils number (1000 cells/uL)

Eosinophils number (1000 cells/uL)

Basophils number (1000 cells/uL)

Red cell count (million cells/uL)

Hemoglobin (g/dL)

Hematocrit (%)

Mean cell volume (fL)

Mean cell hemoglobin (pg)

MCHC (g/dL)

Red cell distribution width (%)

Platelet count (1000 cells/uL)

Mean platelet volume (fL)

### **Interpretation of the CBC Results**

The 2009-2010 NHANES Laboratory Procedures Manual includes several tables of normal ranges for the CBC tests, see Chapter 7, pg 125.