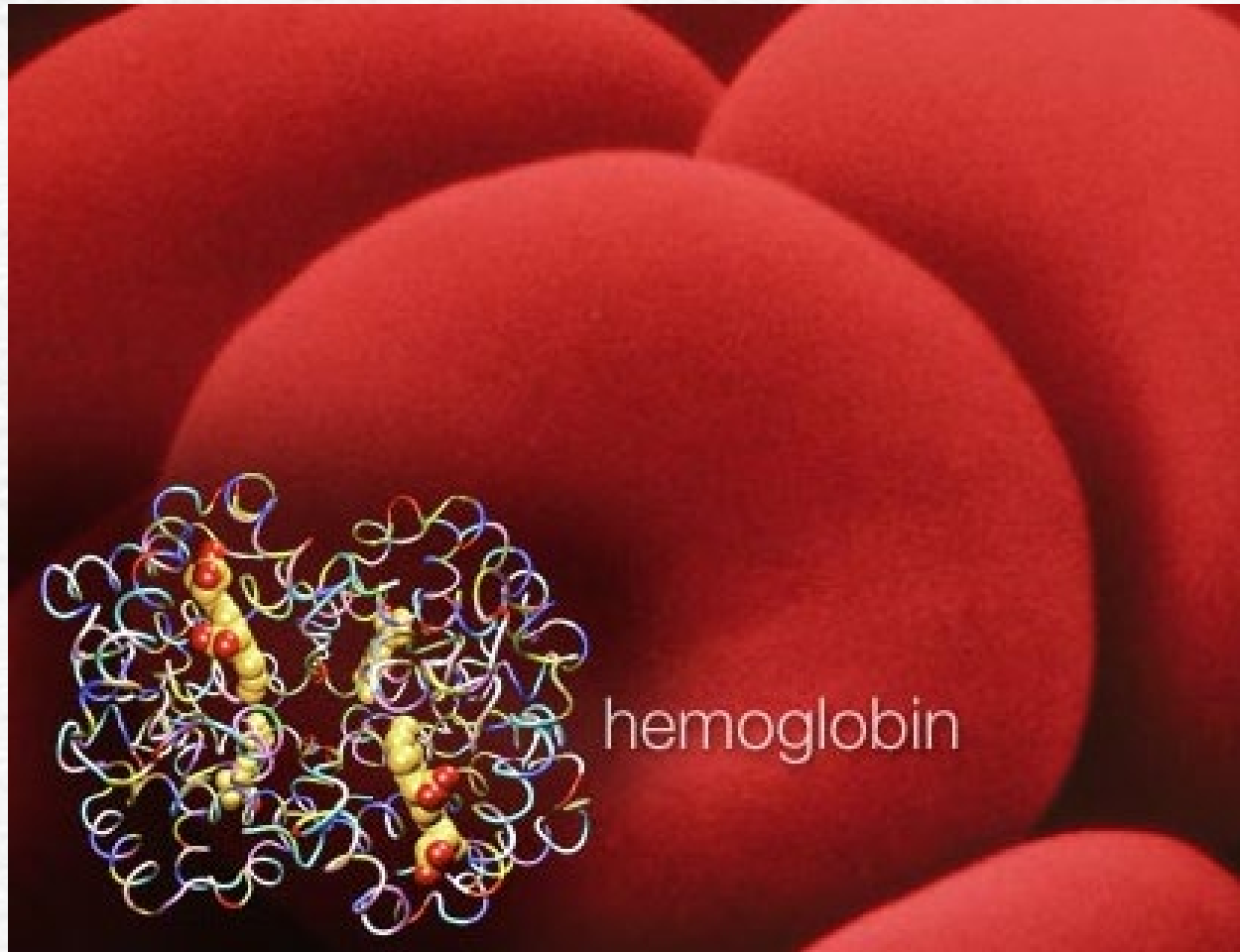


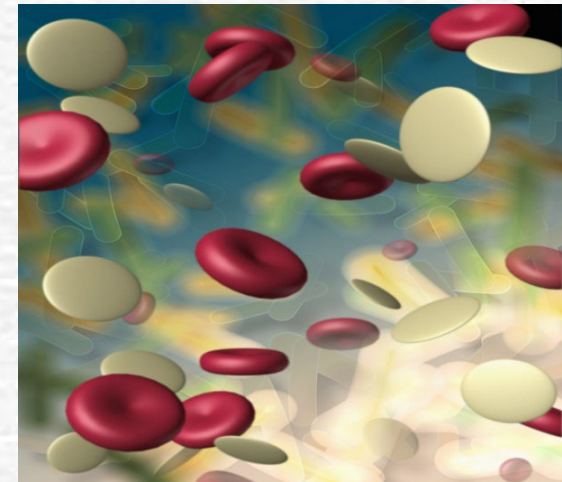
# Anemia



# Anemia

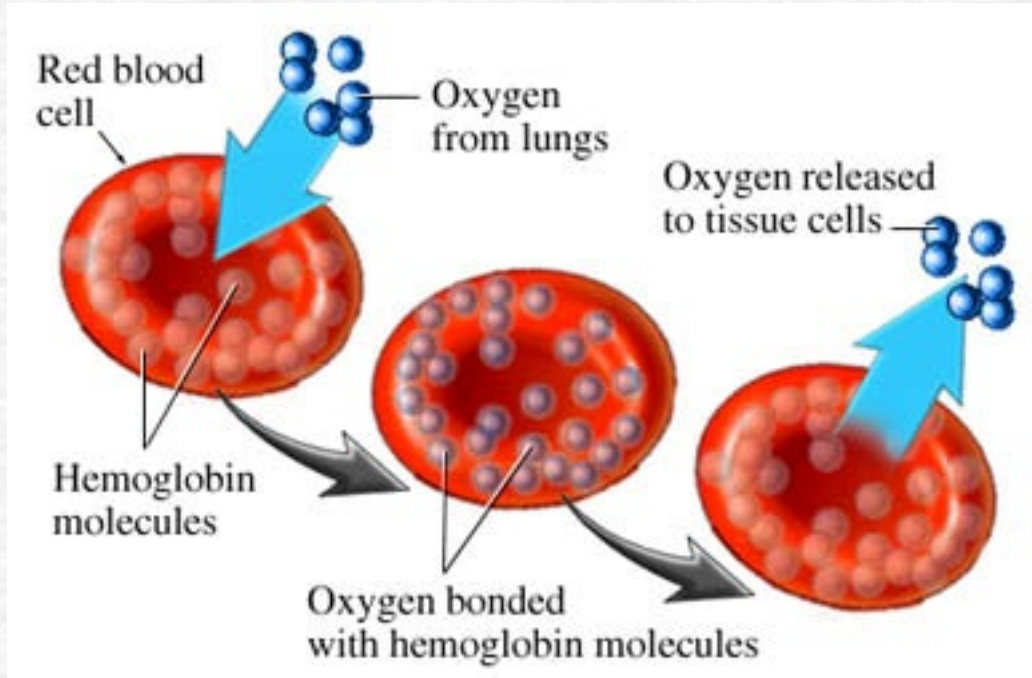
**A condition where blood is deficient in:**

- **Healthy Red Blood Cells (RBC)**
  - Carries oxygen
- **Hemoglobin (HGB)**
  - Iron needed to make HGB
  - Gives blood red color



# Hemoglobin (Hgb) Function

- Transports **O<sub>2</sub>** from the lungs to the tissues



- Transports **CO<sub>2</sub>** back to the lungs & exhaled

# Causes of Anemia



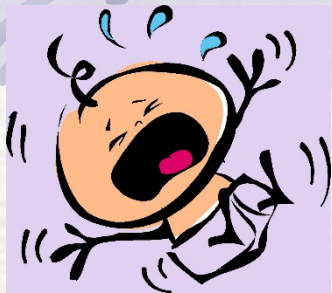
- **Blood loss** from the body
  - surgery, ulcers, **Menstruation**
- **Diet**
  - Lack of iron-rich foods
  - Vegans
- **Growth spurts**
- **Pregnancy**
  - Increased blood volume
  - Increase RBC production for the growing fetus
  - Iron supplement (**30mg of iron per day**).





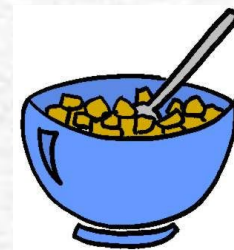
# Other Causes of Anemia

- Chronic illness or infection can cause the body to make fewer red blood cells
- GI disorders or diseases
- Some drugs & medical treatments
- Aplastic anemia: the inability for bone marrow to produce enough RBC



# Infants at Risk for Iron Deficiency

- **Not adequate iron in diet**
  - Watered down formula
  - Drinking cow's milk
- **Infants at 6 months require dietary iron**  
(iron stores have become depleted from birth)
- **Premature infants may require supplementation –**  
Iron absorption during the 3<sup>rd</sup> Trimester interrupted



# Children at Risk for Iron Deficiency



- Not receiving adequate iron in **Diet**
- Drinking more than **24 oz. of milk/day**
- **Rapid growth spurts** where iron available cannot keep up with RBC production



# Symptoms of Iron Deficiency

## Mild

- Pale or yellowish skin
- Tired, weak or fatigued
- Chills







# Symptoms of Iron Deficiency

## Moderate

- Faintness—Dizziness—Tinnitus (ringing in the ears)
- Increased thirst, sweating
- Weak and rapid pulse
- Fast breathing





# Symptoms of Iron Deficiency

## Severe

- Cardiac-related symptoms:
  - Fast heartbeat
  - SOB/shortness of breath
  - Chest pain
- Leg cramps while exercising
- Headache & dizziness



## Other Symptoms

- Crave to eat unusual substances such as ice or dirt called "**Pica**"
- Chronic anemia
  - Permanent brain damage
  - Delayed growth and development

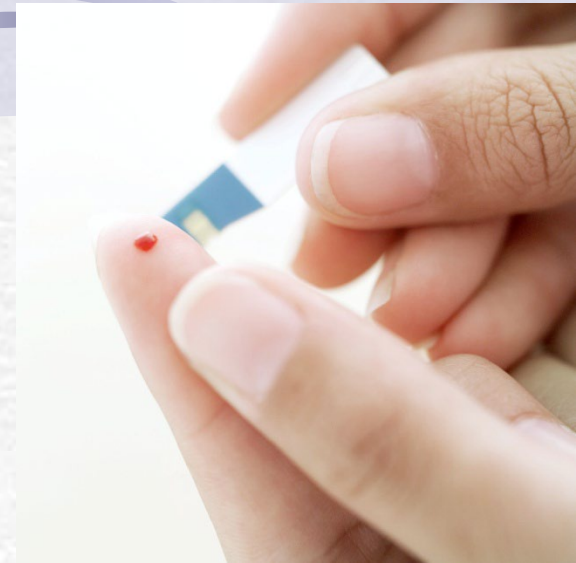
# Lead Toxicity

**Anemia increases the risk of lead absorption**





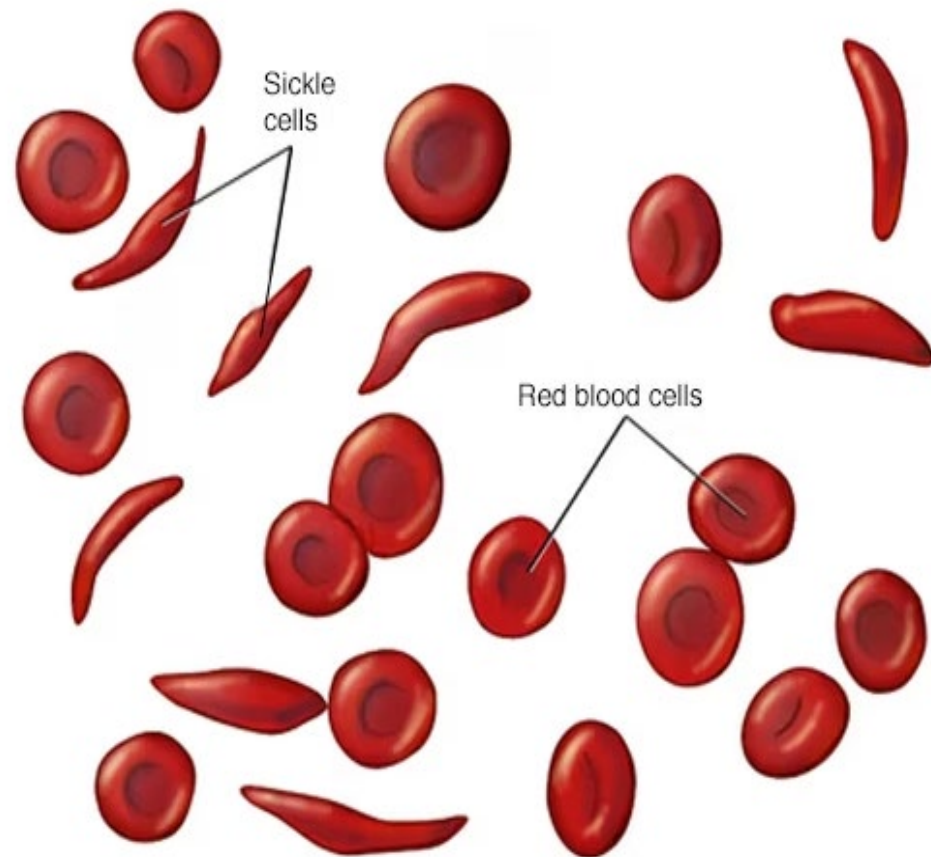
# Testing



- Hemoglobin (Hgb)
- Refer to HCP when low (risk)
  - Diagnosis by Complete Blood Count (CBC)
  - Find underlying cause and treat it

# Sickle Cell Anemia

- Sickling from mutation of the hemoglobin gene
- Occludes small bv and causes tissue damage
- **RBC lifespan** is shortened from 120 days to **20 days**



# Problems with Anemia

- Energy Metabolism
- Temperature regulation
- Immune function
- **Work Performance**

# Problems with Anemia

- Pregnancy
  - Risk Prematurity, LBW, Poor maternal wt. gain, Infant Mortality
- Infants & Children
  - Delay in Mental & Motor Development
    - Even with mild anemia



## Bloodwork

	Date of Bloodwork	Non-WIC Data	HGB	Hct	Re-Test	Notes	No Blood
	8/2/2017	<input type="checkbox"/>	10.5		<input type="checkbox"/>		<input type="checkbox"/>
	4/13/2017	<input type="checkbox"/>			<input type="checkbox"/>		<input checked="" type="checkbox"/>

Add

Remove

Hgb/Hct Reference

MCIR Report

## Hemoglobin/Hematocrit Reference Values

Risk Category Criteria

201 PG, BE, BP  
NPP, IBE,  
IBP, IFF,  
C1 – C4

Low hematocrit (hct.)/ low hemoglobin (hgb.) cutoff value: *At the time the blood test was taken, any value less than (<) the blood values listed in the following chart.*

Note: For any woman who smokes the blood value criterion must be based on the number of cigarettes smoked and the trimester of pregnancy (if appropriate).

- One pack of cigarettes equals 20 cigarettes.

Status	Non-smoking		Any smoking up to 19 cigarettes/day		Smoking 20 to 39 cigarettes/day		Smoking 40 or more cigarettes/day	
	Hct. %	Hgb. gm.	Hct. %	Hgb. gm.	Hct. %	Hgb. gm.	Hct. %	Hgb. gm.
BE, BP, NPP - at/over age 15	<36.0	<12.0	<37.0	<12.3	<38.0	<12.5	<38.0	<12.7
BE, BP, NPP - under age 15	<36.0	<11.8	<37.0	<12.1	<38.0	<12.3	<38.0	<12.5
PG First trimester (0 thru 13 weeks)	<33.0	<11.0	<34.0	<11.3	<35.0	<11.5	<35.0	<11.7
PG Second trimester (14 thru 26 weeks)	<32.0	<10.5	<33.0	<10.8	<34.0	<11.0	<34.0	<11.2
PG Third trimester (27 weeks or more)	<33.0	<11.0	<34.0	<11.3	<35.0	<11.5	<35.0	<11.7

Cut-off values are available for reference from this button

# When Do I Need To Do Bloodwork?

## Infants

- Test between 9 and 12 months of age
- If added before 9 months of age, test at the ONE YEAR Recert visit
- If added after 9 months, test at the INITIAL certification visit



# Guidance for Infant Testing

A hematological test prior to the 9-12 month age is permitted if there are indications that infant is at risk for anemia:

- Preterm infant.
- Has not been fed iron-fortified formula or breastmilk.
- Breastfed infant who has not had iron-containing complementary foods for age.



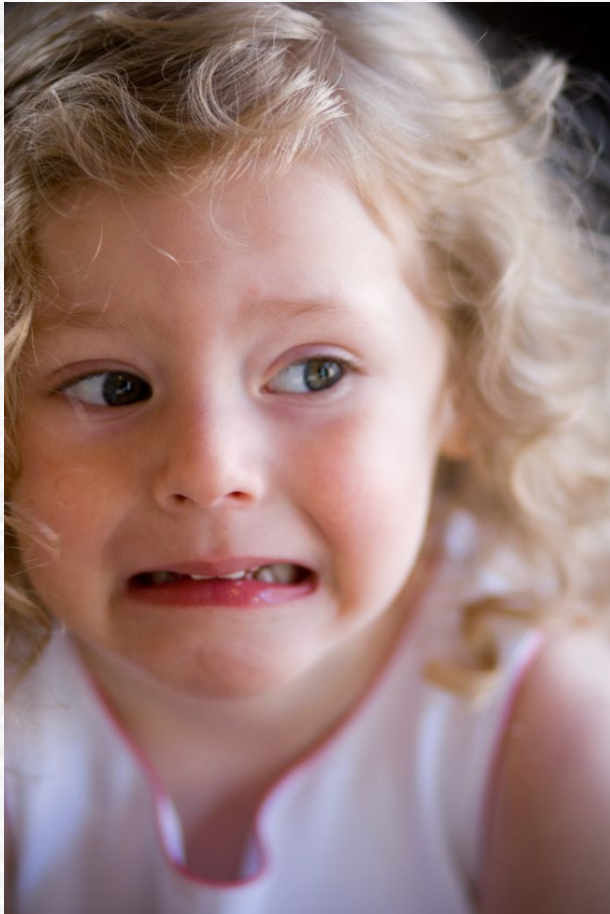
# When Do I Need To Do Bloodwork?

- **Children Under 2**
- Once between 13 and 24 months (prefer 6 mos. after first test)
- For most C1's, this will be at the 18 month mid-cert evaluation
- **Two Before Two**
  - 9-12 months
  - 13-24 months





# When Do I Need To Do Bloodwork?



## Children 2 – 5 yrs

- Once every 12 months if the previous result is above the cutoff level
- Once every 6 months if the previous result is below the cutoff level

# When Do I Need To Do Bloodwork?

## Pregnant Clients

- **Once** during pregnancy

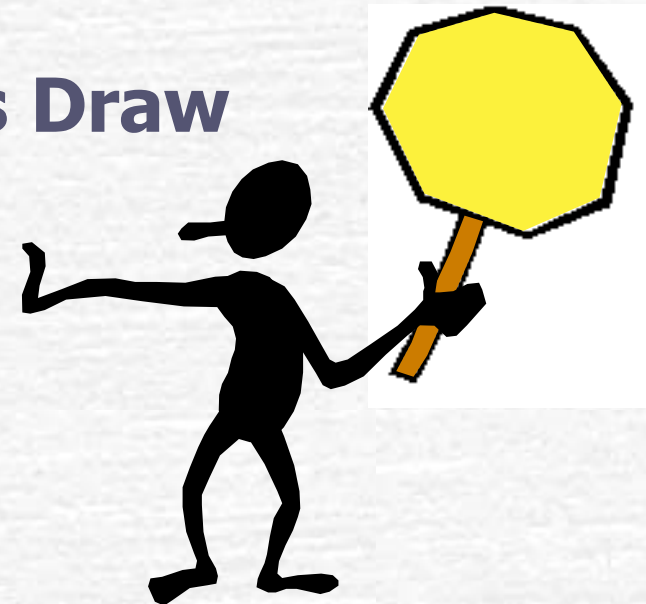
## Postpartum Clients

- **Once** after delivery



# Exemptions to Hematological Testing

- **Not Required by Policy**
- **Medical Condition Prohibits Draw**
- **Religious Objections**
- **Severe Risk to Staff**
- **Pending**



Date	MCIR STATUS	Imms Status*	Referral/Action*
4/13/2017	Record Not Found	Other documented record: Imms UTD	Referred to private Dr

Add

Remove

Has child had a blood lead test?

☐ No ☐ Yes ☐ Don't Know

Lead

Date of Lead Test	SIGN	Number	WIC	Method
No Records Exist in Data Source				

Add

Remove

Bloodwork

Date of Bloodwork	Non-WIC Data	HGB	Hct	Re-Test	Notes	No Blood	Exemption Reasons
8/2/2017	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>	
4/13/2017	<input type="checkbox"/>			<input type="checkbox"/>		<input checked="" type="checkbox"/>	

Add

Remove

Hgb/Hct Reference

MCIR Report

Save

Cancel

Next

Not required by Policy  
Medical Condition Prohibits Draw  
Religious Objection  
Severe Risk to Staff.  
Pending

Adding a row is NOT required for infants less than 7 months of age



# Client Agreement

## **Consent to WIC health screening:**

I will allow a WIC health screening for all WIC applicants in my family. WIC health screening includes answering health and diet questions, measuring height, weight and head size, and testing blood for iron level.

# Referral Data

- Must be within specified time period for the client's category
- Must be received and documented within 90 days
- The date of the test must be recorded in MI-WIC

MEDICAL CENTER

NAME \_\_\_\_\_ AGE \_\_\_\_\_  
ADDRESS \_\_\_\_\_ DATE \_\_\_\_\_

**Rx**

\_\_\_\_\_  
SIGNATURE

☐ LABEL  
REFILL 0 1 2 3 4 5 PRN NR

# Non-WIC Data

enter the date blood work was done

**Bloodwork**

	Date of Bloodwork	Non-WIC Data	HGB	Hct	Re-Test	
▶	11/1/2017	<input checked="" type="checkbox"/>	12		<input type="checkbox"/>	
	8/2/2017	<input type="checkbox"/>	10.5		<input type="checkbox"/>	
	4/13/2017	<input type="checkbox"/>			<input type="checkbox"/>	

# Form to Capture Referral Data

WIC ANTHROPOMETRIC AND LABORATORY INFORMATION REQUEST			
Michigan Department of Health and Human Services			
Medical Provider: Please complete the information below based on most recent visit.			
Client 1 Full Name		Date of Birth	Parent/Guardian Name
Length/Height (in/cm)		Date Taken	
Weight (lb/kg)		Date Taken	
Head Circumference (in/cm) (<24 months)		Date Taken	
Hemoglobin or Hematocrit		Date Taken	
Lead Test/Method		Date Taken	
<input type="checkbox"/> Infants Only (if checked, complete)			
Birth Length	Birth Weight	Birth Head Circumference	Weeks' Gestation
Client 2 Full Name		Date of Birth	Parent/Guardian Name
Length/Height (in/cm)		Date Taken	
Weight (lb/kg)		Date Taken	
Head Circumference (in/cm) (<24 months)		Date Taken	
Hemoglobin or Hematocrit		Date Taken	

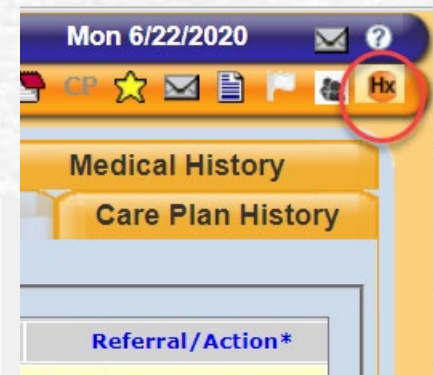


# Retesting

## State WIC Policy 2.16

- A critical hemoglobin result **<8 mcg/dL**
- Use another finger
- Document both tests in client record and log

# MI-WIC: Lab Hx screen



Pregnancy History	BF Assessment History	BF Statistics History	Medical History
Nutrition History	NE History	Anthro History	Lab History

### Immunization

Date	MCER STATUS	Imms Status*	Referral/Action*
7/5/2018	Record Not Found	Other documented record: Imms UTD	

### Lead

Date of Lead Test	SIGN	Number	WIC	Method
No Records Exist in Data Source				

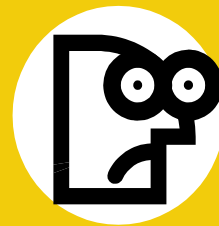
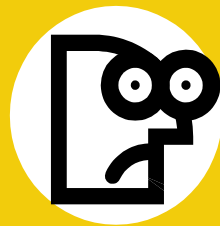
  

### Bloodwork

Date of Bloodwork	Non-WIC Data	HGB	Hct	Re-Test	Notes	No Blood	Exemption Reasons
7/5/2018	<input type="checkbox"/>	4	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	

**Cancel**



**It's QUESTION TIME!!**