**JHS RN/LPN/MA Annual Lab Competency Training**

**Topics Covered are:**

Blood Glucose, Fecal Occult blood, Rapid Strep, Urine Pregnancy, Urine Dipstick, Urine Drug Screen, PT/INR, Hemocue and INSTI HIV test procedures.

**Blood Glucose**

**TRUEMetrix**

⧠ Perform hand hygiene, use PPE

⧠ Select and prepare puncture site

O Lateral side of finger, avoiding central tip of finger

O Clean site with alcohol swab, allowing it to dry completely

⧠ Insert test strip into the test port and verify that the “drop” symbol appears on the display

⧠ Obtain blood sample

O Hold lancet perpendicular to puncture site

O Allow drop of blood to be drawn into the strip until the dashes appear on the display screen. When testing is complete, result will be displayed and the strip release button will flash.

* When blood glucose is over 400 per Clinical Practice 2018, urine is required to check for ketones. Meter flashes HIGH for glucose over 600

⧠ Hold the meter with test strip down over hazardous waste container and press strip release button to discard the strip

⧠ Document result in Epic Lab Entry under Enter/Edit result after releasing the order under open orders.

**Fecal Occult Blood (*Hemoccult)***

⧠ Provide materials and education to patient regarding specimen collection

* Apply thin smear from bowel movements collected on 3 different days to 3 different, labeled Hemoccult cards
* Instruct patient of process for having samples picked up by triage or treatment nurse

⧠ Perform hand hygiene, use PPE

⧠ Develop and read the test

* Open back of slide and apply 2 drops of Hemoccult Developer directly over each smear
* Read test within 60 seconds. Any trace of blue on or at the edge of the smear is positive.

⧠ Perform quality control

* Apply 1 drop of Hemoccult Developer between the positive and negative Performance Monitor area.
* Read results within 10 seconds

⧠ Document result in Epic under Enter/Edit result after releasing the order in open orders.

**Rapid Strep Immuno/STREP A Detector**

**⧠** Perform hand hygiene, use PPE

⧠ Collect the specimen by swabbing the posterior pharynx, tonsils and other inflamed areas.

⧠ Add 3 drops of Reagent A (1) (pink solution) and then 3 drops of Reagent B (2) (colorless solution) to an extraction test tube. This will change the color of the solution from pink to a light yellow.

⧠ Immediately put the throat swab into the tube of pale-yellow solution and rotate swab vigorously 10 times in the tube and then leave in for 1 minute. Remove the swab while pressing it firmly against the side of the tube and discard.

⧠ Place the dipstick (arrows pointing down) in the tube of solution and read the result at 5 minutes.

⧠ Interpret results

* Positive: 2 Distinct Lines one red and one blue lines
* Negative: 1 red line appears in the control region (C)
* Invalid: Control line fails to appear

⧠ Document result in Epic under Enter/Edit result, after releasing the order under open orders.

**Urine Dipstick**

**Chemstrip**

**⧠** Perform hand hygiene, use PPE

⧠ Obtain urine specimen from patient.

⧠ Immerse end of test strip into urine and wipe off excess on rim of container.

Hold strip in horizontal position.

⧠ Compare reagent areas to corresponding color chart on the bottle label at 1 minute.

o If leukocytes indicate a trace result, it should be read again at 2 minutes.

⧠ Document results in Epic Lab Entry.

**Urine Drug Screen QuickTox**

**⧠** Perform hand hygiene, use PPE

⧠ Detach the bottom cover

⧠ Dip tips of uncovered sample pads straight into the urine sample for at least 20 seconds. Dip down to but not beyond the tip of the arrows.

⧠ Re-attach bottom cover and lay on a flat surface

⧠ Read and interpret results for each test independently

* Wait 1 minute, and then read the results of the “Adulteration Tests” by comparing to the color chart card. Do not read after 2 minutes.
* After a total of 5 minutes, read drugs of abuse test results. Results are stable and may be interpreted for up to 1 hour after control bands form.
  + Negative: presence of a colored band red or pink at the control

(C) region and a colored band at the specific test region, regardless of intensity

* + Positive: presence of a colored band at the control region (C) and absence of a colored band at the test region for that particular test
  + Invalid: no band appears at the control region (C). The test is inconclusive even if there is a band in the test region.

⧠ Document results in Epic under Enter/Edit results, after releasing the order under open orders.

**Urine Pregnancy Urine Immuno/hCG Detector Premier**

⧠ Perform hand hygiene, use PPE

⧠ Pipette 3 full drops of urine sample into the rounded well marked with an “S”

⧠ Wait 3 minutes and then read results. Do not interpret results after 5 minutes

* Negative: only one red/purple band appears in the control area (C) and none in the test window (T).
* Positive: in addition to the band in the control area (C), a distinct red/purple band appears in the test area (T).
* Invalid: after 5 minutes, if neither a control band (C) nor a test band (T) appears, or only a test band appears, the test should be voided.

⧠ Document result in Epic under Enter/Edit after releasing the order in open orders.

**Hemoglobin**

***HemoCue Hb201+***

**Equipment Check**

⧠ Pull the cuvette holder out to the loading position. Press and hold the left button until the display is activated.

⧠ The display will show the program’s version number, followed by an hourglass and “Hb”. The instrument will automatically perform a self-test.

⧠ After 10 seconds, the display will show 3 flashing dashes and the HemoCue symbol indicating that the self-test was successful and the instrument is ready to use.

* If the self-test fails, an error code is displayed. Refer to your User’s Manual.

**Procedure**

⧠ Perform hand hygiene, use PPE

⧠ Remove the appropriate number of cuvettes from the vial. Place the cap back on the vial promptly.

⧠ Obtain the blood sample by finger-stick:

* Make sure the patient hand is warm and relaxed. Use only the middle or the ring finger for sampling. Avoid using a finger with rings on it.
* Clean with an antiseptic wipe and allow to air-dry.
* Using your thumb, lightly press the finger from the top of the knuckle towards the tip. This stimulates the blood flow towards the sampling point.
* For best blood flow and least pain, sample at the side of the fingertip, not in the center.
* While lightly pressing towards the fingertip, prick the fingertip with the lancet.

⧠ Obtain blood sample

O Wipe away the first 2 or 3 drops of blood with sterile gauze.

O Reapply light pressure towards the fingertip until another drop of blood appears.

O When the blood drop is large enough, hold the cuvette by the winged end and insert the tip into the middle the blood drop and allow the cuvette to fill in a continuous process. DO NOT refill.

O Wipe off excess blood on the outside of the microcuvette tip. Make sure that no blood is drawn out of the microcuvette during the procedure.

O Look for air bubbles in the filled microcuvette. If present, take a new sample. Small bubbles around the edge can be ignored.

⧠ Place the filled microcuvette in the instrument’s cuvette holder. This should be performed within ten minutes after filling the microcuvette.

⧠ Push the cuvette holder to its measuring position (stop point).

⧠ During measurement “ “ will be shown on the display.

⧠ After 15-60 seconds the hemoglobin value of the sample is displayed. The result will remain on the display as long as the cuvette is in the measuring position. When operating on battery power, the analyzer will automatically turn off after 5 minutes.

⧠ Remove and discard the cuvette into a bio-hazard container.

⧠ Document result in Epic under Enter/Edit result, after releasing the order in open orders.

**INSTI HIV-1/HIV-2**

**Antibody**

⧠ Perform hand hygiene, use PPE

⧠ Tear open pouch and carefully remove membrane unit so that the tab of the membrane unit is toward you

⧠ Obtain the blood sample by finger-stick

* Clean with an antiseptic wipe and allow to air-dry.
* Using your thumb, lightly press the finger from the top of the knuckle towards the tip to stimulate the blood flow towards the sampling point. Sample at the side of the fingertip, not in the center.
* While pressing towards the fingertip, prick the fingertip with the lancet.
* Immediately dispose of the lancet into a sharp’s container

⧠ Collect blood sample

* Squeeze finger to create a solid bead of blood.
* Place the tip of the pipette horizontally into the blood bead. Do not squeeze the pipette bulb. Capillary action will draw the blood to the black fill line.

⧠ Transfer blood to Solution 1 by squeezing pipette bulb. Re-cap Solution 1 and invert a few times to mix well.

1. Pour all of Solution 1/blood sample mixture into the center of the membrane unit well within 5 minutes of adding the blood to Solution 1. Allow at least 30 seconds for the solution to absorb completely.
2. Pour Color Developer Solution 2 into the well and allow it to absorb completely.
3. Pour Clarifying Solution # into the well and read the result while the membrane is still wet. Do not read if more than 5 minutes have passed after adding the Clarifying Solution.

**⧠ Interpret results**

* Only the control spot appears blue.
  + This result is Non-Reactive (HIV antibodies were not detected in sample).
* Both the control spot and the test spot appear blue. One spot may be darker than the other.
  + This result is Reactive (preliminary positive)
* Neither the control spot nor test spot turns blue, the test spot is blue but control spot is not, only blue specks appear.
  + This result is Invalid and test must be repeated using a fresh blood sample and a new test kit.

⧠ Label tests below either Non-Reactive, Reactive or Invalid Result

⧠ Document results in Epic under Enter/Edit results, after releasing the order under open orders.