Glucose

Point-of-Care Testing (POCT)

Staff Training

Glucose Meter

- At this time, the Abbott Precision Xceed Pro glucose meter is being used.

Limitations that affect accuracy

IMPORTANT: Doing the finger stick is only one part. *You also need to ensure the number/result is accurate*. Please see below:

- **Never** test body fluids, serum or plasma.
- Results are falsely decreased in patients with excessive water loss or dehydration, shock, or hyperglycemic-hyperosmolar state.
- High hematocrits (above 70%) can cause erroneously lower results and low hematocrits (below 20%) can cause falsely elevated results.
- Testing in an environment with a temperature below 15°C (59°F) or above 40°C (104°F), or a relative humidity below 10% or above 90%, may skew results.

Procedure

- Please do HAND HYGIENE before reaching into a glucometer case.
- Turn glucometer on.
- Select either “Control Test” or “Patient Test.”

Once you have chosen “control test” or “patient test,” scan the “operator i.d.”

What is an Operator ID?

Your Mad River Hospital unique ID is your Operator ID and is used to identify you as the person performing a glucose test.

Scan the barcode on the back of your badge.

Would you let someone borrow your credit card or Social Security number?

This is why you never allow anyone to use your badge.

- If a co-worker's badge does not work, there is a valid reason, and they should address this with the POCT coordinator.
- Remember you are legally responsible for all tests performed using your ID.
- Your name is tied to every glucose test performed using your ID.
- It is a work rule violation (can be grounds for dismissal).
- But how can you help a co-worker who does not have current glucometer access?

CONTROL TEST

- **Always check the controls' expiration date**.
  Expires 90 days from date opened or manufacturer's outdate, whichever comes first.
- If expired: discard. Open and date a new QC set.
- Write on new QC bottle (or on a label affixed to bottle that does NOT cover barcode):
  date opened, date of expiration, initials.
- Scan barcode on bottle and follow prompts.
- QC must be performed every 24 hours; meters have QC lockout.

PATIENT TESTING: Always identify the patient.

Per MRCH "Patient Identification" Policy (accessed February 2020) all patients must be identified with two identifiers:

- "Identification of patients . . . is verified by *name and date of birth*."
- "Licensed caregivers will not administer medication, blood or blood products or *obtain blood samples* from patient who has not been identified using the name and date of birth."

Scanning Patient Armband

- Remember to SCAN patient's armband.

We would like to GREATLY underscore the importance of scanning the patient's armband, and STRONGLY DISCOURAGE inputting a patient's Medical Record #, birthdate, or any random string of numbers for the patient ID ("1234" etc.). The glucometer is set up to link to the patient's account number via CPSI. If other numbers are input, it could erroneously link to the wrong account.

Attached armbands should always be used!

NEVER USE ARMBANDS NOT ATTACHED TO PATIENT:

- Found lying in the patient's room
- Taped to the bed
- Found in chart
- Or at the nursing station
- Barcoded labels lying around

Remember --

Scanning is everything

- Scanning prevents manual entry errors and results going to the wrong patient chart.
- If you must manually enter a number, double-check it before you press the enter button. This should be a rare issue unless you work in the outpatient areas. Use the number on the patient's armband that begins with 10 . . . .

5150

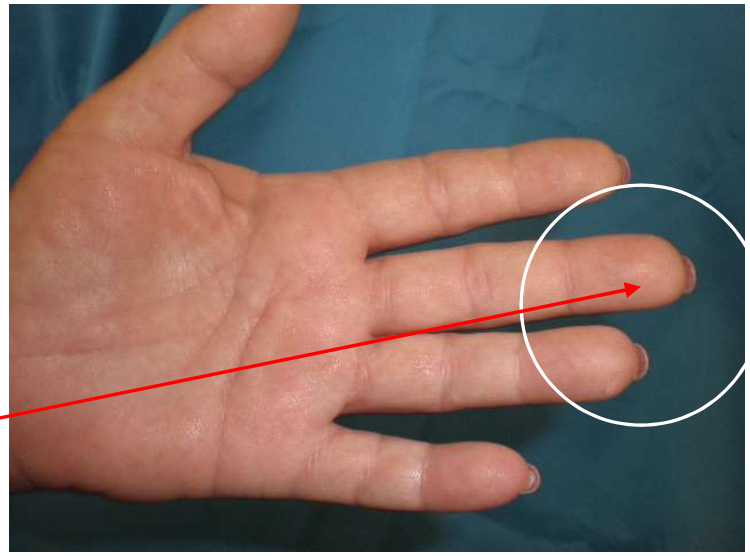
- This number is used exclusively in OB and ER for trauma or emergency cases where an armband is not available.
- Patient identification must be documented on the 5150 log located in these departments.

Test Strip

Scan the barcode on the test strip.

Choose the finger carefully.

- Best locations for a finger stick is the 3rd and 4th fingers of the non-dominant hand.
- Avoid the 2nd and 5th fingers if possible.
- Perform the stick off to side of the center of the finger, on the *side of the finger* ***pad***.
- NEVER use the tip or center of the finger.



Massage or warm the site.

- Avoid fingers that are cold, cyanotic, swollen, scarred, or covered with a rash.
- Massage to warm the finger and increase blood flow by gently squeezing from hand to fingertip 5-6 times.

Clean the site and allow alcohol to dry.

- Cleanse fingertip with 70% isopropyl alcohol -- ***scrub vigorously.***
- Allow alcohol to dry thoroughly before testing. Do not fan, blow on, or wipe off.
- ***Caution:*** *Wet alcohol can falsely elevate or lower blood glucose results.*

Finger Stick

- Using a sterile lancet, make a skin puncture just off the center of the finger ***pad***.
- Wipe away the first drop of blood (which tends to contain excess tissue fluid).

Do not milk the finger.

- The drop of blood must be big enough to fill the strip completely.
- **If necessary, apply light** pressure to the surrounding tissue until another drop of blood appears.
- **Avoid "milking":** Do NOT squeeze or apply strong repetitive pressure to the site. This may result in hemolysis or increase tissue fluid in the blood, causing incorrect glucose results.
- ***Caution:*** *Free flowing blood is necessary to obtain reliable results. Increased pressure beyond that necessary to hold the finger can result in inaccurate results.*

Apply the sample.

- If strip was not placed into meter previously, place strip into meter.
- Apply sample to the target area of the strip – let the end wick up the blood.

Protect the glucometer.

Always keep the meter flat when running a test. This prevents solutions from running into the port and damaging the meter.

If you are getting strip reading errors and it appears liquid may have run into the port, bring glucometer to lab for a new sample port.

Alert Values

Alert Values: <40 or >400 mg/dL

- Alert Values must be confirmed by repeating the test.
- Any values <40 or >400 MUST be checked or confirmed by laboratory, *venous* blood draws. Venous draws continue until patient's BG is >40 or <400.

Error Messages

- "Last Upload Incomplete, Redock Meter" -- you may continue to use meter, but then *redock*.
  If this does not resolve the issue, *reboot the computer* that the docking station is connected to (and check the connecting cable).
  If error message persists, *contact IT*.
- And note: When docking glucometer, please watch for a few seconds to make sure it says it is uploading the information.
- Also, if it says "Strip Error, Wet or Damaged Strip" -- start over. Be sure to add sample only when instrument reads to apply the sample.

Cleaning the Glucometer

- The glucometer must be cleaned before each patient test, after each patient test, and every 24 hours.
- Glucometers must be cleaned with PDI germicidal Super Sani Cloth disposable wipes. Pay special attention to the end of the glucometer with the test strip port and any areas of obvious blood contamination.
- If you are having trouble scanning, try cleaning the scanning window (e.g. with a dry 2x2). (The window can get a film build up from repeated PDI cleaning.)

Testing Yourself or Co-Workers

- It is a work rule violation to test yourself or co-workers.
- Exception to this is an emergency -- and the person will need to go to the Emergency Room.

Docking

Dock glucometers once a day.

Glucometers usually are docked when controls are run, but not during the 0300 hour.

Docking daily is important -- in part, to upload employee competency information to individual glucometers and thus provide access.

Competency Renewal

Per Clinical Laboratory Improvement Amendments (CLIA) federal regulations, all staff using POC blood glucose monitors must re-do their competencies annually.

In addition at MRCH, new employees who use the glucometer re-do their competency at the 6-month point.

Feel free to contact lab personnel who deal with glucometer competencies, or Staff Development, if you have questions.

Where to Find Information

- Information can be found in the lid of the carrying case.
- Glucometer user manual can be found on the internet.

Per “Diabetes Standard of Care” MRCH Policy
(accessed February 2020 -- please consult entire policy):

Overall, strive for capillary BG of 80-140 before meals and 100-140 at bedtime, or as ordered.

Hypoglycemia: BG less than 70.

- If BG 40-70, or if there are s/s of hypoglycemia, give glucose (juice or gel) (if patient is able to swallow safely).
- With symptomatic Hypoglycemia, ensure there is IV access; and notify MD immediately.
- (If patient is unable to swallow, call physician and be prepared to administer IV dextrose or inject glucagon.)
- After treating, re-check BG in 15 minutes; goal is to get BG greater than 80 – then treatment may be snack/meal.

Questions/Concerns

If you have problems with your meter that you could not resolve,
please call the Lab if possible.

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