Point of Care Testing

Bedside Glucose Meter
Regulatory Overview

- Bedside glucose is a point of care lab test and **YOU** are performing this lab test under the Lab’s CLIA license.
- All lab tests are regulated by the government.
- Point of care testing is inspected during the hospital inspection process.
- Lab Point of Care Staff monitors for compliance and serves as technical resources.
- Unit educators and PCS are resources.
- Yearly re-certification in February is required for everyone.
Glucose Meter System Parts

Provided by lab:
- Glucose Meter Carrying Case
- Docking Station or Cable

Provided by testing area:
- Testing supplies
- AA Batteries
**Meter Parts**

1. **Display screen** – prompts action and displays information.
2. **Test Strip Port** – where test strip is inserted for testing.
3. **Connector Pins** – connects with docking station or cable to relay information.
4. **Battery compartment** – holds 2 AA batteries.
5. **Display screen** has battery icon to indicate charge.
Meter Keypad
ON/OFF

- Press once to turn on meter
- Press and hold for 3 seconds to turn meter off
- Meter will turn off automatically after 4 minutes to preserve battery power.
METER KEY PAD

- **Enter**
  Use to enter information into the meter after typed into the keypad

- **Meter Keypad Menu**
  Will toggle you back and forth between testing menu and review results menu
Meter Keypad Clear
- Will back up one space while entering numbers
- Will delete a barcode
- Will return you to a previous screen
- Used to delete info entered incorrectly

Backlight
- Press and HOLD lower left key (under 7) for 2 seconds to activate the backlight then release.
Scanner Use

- **Used to scan the barcode of the item you will be using.**
- Press and hold scan key to activate digital camera scanner
- Hold still to activate the green light over the barcode approx. 3-12 inches away to allow meter to take a picture of the barcode
- Listen for beep
Troubleshooting Scanner

- Check battery power
- Clean scanner window with soft cloth
- Scanner works best if test strips and armband barcode is flat
- Meter will turn off scanner if scanner key depressed too long.
Patient ID’s and Glucometers

Remember you **have to scan the patient’s armband**, not their sticker. Look for EITHER the Chinese square or Larger Linear Barcode.

![Chinese square](image1.jpg)

![Larger Linear barcode](image2.jpg)
**METHOD ONE:** Hold down scan button and review account number on the screen immediately after scanning.

*If the scanned ID is incorrect, press clear to delete the ID and try scanning again.*

**METHOD TWO:** Review the account number at top of the screen when result is viewed.

*If the ID is incorrect use the POC Corrected Report form to get the patient ID corrected.*
Battery Replacement

- To remove the battery cover
  - Using both hands, press down firmly on the cover.
  - Position one thumb on rubber tab and other on raised lines.
  - Push to slide the cover down, then lift up and away from the meter.
  - Remove old batteries and position new batteries in meter following ‘+’ and ‘-’ guides.
Battery Compartment Cover

- Reinsert the battery cover:
  - Align battery cover with the slots on the meter, then slide up and into place.
  - Do not snap it down as it will break off the tab.
GLUCOSE CONTROL EXPIRATION DATE

Controls expire 90 days after opening

1. Write Revised Expiration date

   Write 90 day expiration date with permanent marker. If manufacturer’s expiration date is sooner than the 90 day expiration date – use manufacturer’s date and circle it. Do not write over barcode.

2. Place Tape over the expiration date

   The expiration dates get rubbed off, even if permanent marker is used. Use tape to protect the expiration date.
RUNNING CONTROLS

- Press ON/OFF
- Press 2 Control Test
- Scan or enter Employee ID
- Scan Control Barcode
- Scan Test Strip Barcode on wrapper
- Insert Test Strip from the wrapper you scanned
- Mix controls by gently inverting prior to use. Do No Shake.
- Apply drop of control solution – Keep meter flat! Do not allow liquid to enter strip port. It will damage the meter.
- 5 second countdown
- PASS or FAIL
- Both levels (LO & HI) must be run each day of patient testing after 0100 (has to be the time on the meter)
Reasons Controls Fail

- Controls are expired – check date on vials
- Wrong level of control was run
- Controls not mixed
- Air Bubbles in nozzle of vial
Prior to performing a patient test:

- Verify the patient using two patient identifiers.
- Verify that you have the correct patient using the patient armband.
- Verify that the armband is for the correct facility with current MRN and Financial ID number (FIN #)
- Verify the patient using two patient identifiers.
- **If patient is transferred from another facility, the wristband must be updated.** Test results will not be transmitted if wrong FIN # is used.
- Always scan the barcode, when available, to ensure correct visit number entry into meter. **Scan if you can.**
Fingerstick Collection

- Choose a spot that is on the bottom side of the tip of one of the center fingers of either hand.
- Clean finger with alcohol prior to poking and allow to dry.
Fingerstick Collection

- Gently squeeze across the entire finger at the last joint.
- Do not ‘milk’ finger.
- Always wipe off the first drop of blood after poking finger and apply second drop to test strip.
Applying sample to test strip

- Apply sample to top or end of application area until you hear a ‘beep’ indicating enough sample has been applied.
- If no beep, remove the test strip and depress the ‘clear’ key to start over with new test strip.
- **You may not add more sample to the test strip!**
- If using a syringe, apply blood sample to the test strip with the syringe pointing **away** from the meter.
- Remember to keep the glucose meter **flat** when running controls or patient tests, so sample does not flow into meter.
Patient Testing

- Press ON/OFF
- Press 1 - Patient Test
- Scan or enter your employee ID
- Scan or enter patient Financial ID Number (FIN#) from armband
- Use all 9’s if no FIN# (do not make-up numbers)
  Only use when patient is not yet admitted, so no FIN# available. e.g: new babies, ER urgent situation
- Confirm patient Financial ID number, if prompted
Patient Testing - continued

- Scan barcode on test strip wrapper and insert test strip into glucose meter
- Collect blood sample and apply to target area on test strip. Keep meter flat!
- “Sample Accepted” will display and 5 second countdown
- Test results will be displayed with patient information
- Review patient information and test result for accuracy
Critical Values

High Critical Values (greater than 399) will have an arrow pointing up ▲ before the result.
Example: ▲ 425

Low Critical Values (less than 40) will have an arrow pointing down ▼ before the result.
Example: ▼ 35

ACTION:
Repeat if questionable and follow critical value notification process. Treat for hypoglycemia, if appropriate.
Out-of-Range Results

- Results that are **too high** for the meter to read will appear as **>500**. (greater than 500)

  **ACTION**: Recheck if questionable and order lab test to confirm result.

- Results that are **too low** for the meter to read will appear as **<20**. (less than 20)

  **ACTION**: Recheck if questionable and treat patient for hypoglycemia.
Comment Code #4

- If you made an entry or testing error, enter “4” while the patient result is on the screen.
- Entering “4” will stop the results from going to the patient record.
- If you do not enter a comment code, be sure to press ENTER to complete the test cycle.

Don’t 4-get to use code 4 to 4-get that result.
Troubleshooting Patient Results

- If the blood glucose result appears to be inconsistent (lower or higher than expected), there may be a problem with the test strip, collection technique, or patient condition.
- Repeat the test using a new test strip.
- Results that are incorrect may have serious medical consequences.
- Order a lab performed glucose if bedside glucose is questionable.
Neonatal Glucose

- As a matter of good clinical practice, caution is advised in the interpretation of neonatal glucose values below 50 mg/dL.
Disease States which lower results

- Severe dehydration
- Severe hypotension
- Edema of draw site
- Shock
- Hyperglycemic-hyperosmolar state
  - With (DKA) or without ketosis
- Alcohol remaining on the puncture site.
- Samples with hematocrit levels that exceed stated range (15%-65%) may give erroneous glucose results.
- Results in Critically ill patients may be inaccurate. Consider getting a lab draw.
Repeating a patient test

1. If you question a test result, run the test again on the same glucose meter.

2. Run the second test within 5 minutes of the first test.

3. Do not download the glucose meter between tests.

4. Only the second test will be sent to the patient record if 1-3 points are followed.
Meter Cleaning/Care

- Clean the meter after **each patient use** to prevent spread of disease.
- Clean the supply case if blood is visible.
- Wear gloves when cleaning the meter.
- If blood is visible on gloves, change them before cleaning the meter.
- Use only hospital approved disinfectant wipes and allow meter to air dry.
- Do NOT write on the meters.
Review Patient Results

- Press MENU
- Choose 1 – Data Review
- Enter Employee ID Number

  Choose 1 – ‘Patient by OperID’ to review previous patient results by current operator

  Choose 2 – ‘Patient by Pat ID’ to review previous patient results by patient ID #

  Choose 3 – ‘All Patient Data’ for all previous patient records

- After selecting review option Press 1 - Previous
- Press 2 - Next to review more recent results
Result Documentation

- Electronically transmit results into Electronic Medical Record (EMR) by placing glucose meter onto the docking station or docking cable.
- The rotating circling arrow indicates transmission.
- Do Not remove meter from docking area while the arrows are circling.
- The glucose meter will automatically turn off when docking is completed.
- If download is unsuccessful “Last Upload Incomplete Re-dock Meter” will display.
- Download meters after each patient test or group of patient tests as appropriate.
- Manually document results into Electronic Medical Record during downtime.
- “Test Memory Upload Required” displays when meter has not been downloaded for 24 hours.
Docking station

- Place the glucose meter gently into the docking station sliding into place. Meter will turn on when properly positioned. Do not force it on. These are very costly to replace.

- Docking stations are located in nursing station areas.
Docking Cable Instructions

- Insert the cable connector into data port on the bottom of the glucose meter. Guide it in gently, Do Not Force.
- Meter will turn on.
- Lay on a flat surface while downloading.
- Some units may have multiple docking cables available.
Troubleshooting Downloading

If the circling arrows do not rotate, test results are not transmitted.

- Check battery power by turning on meter and observe battery icon. If low, replace batteries.
- If problem continues, take meter to closest docking station to download.
- Contact IT Service Desk (7070) to report problem with downloading and to receive assistance.
Results not in EMR after docking

- You may have scanned a wrong barcode or one from another facility. Document manually.
- If you manually entered FIN number, you may have entered it incorrectly. Document manually.
- If Lab Information System or EMR is down, or if there are network problems, results will not transmit. Document manually.
- Results will usually populate into EMR within 5 minutes, unless patient sticker was scanned.
- Contact IT Service Desk (7070) to report problem and receive assistance, if needed.
Meter Replacement

- Clean meter with disinfectant wipe
- Return meter to lab and state problem
- Lab will issue you replacement
- DO NOT send meters through the pneumatic tube!
You must fill out the POC Corrected Result form and send it to the Laboratory whenever:

- You enter all 9’s as the patient ID
- You need patient results corrected for any reason.

Complete all sections of the form. Include patient information once the visit number has been assigned. Forward to laboratory when completed. This process must be completed to ensure patient glucose results are in the EMR.
QUESTIONS?

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