NOVA STATSTRIP Glucometer Training Course for SRMC

Vocabulary

- **Nova meter** = The Nova meter the glucose testing is performed on.
- **Accessory Case** = The black case containing the strips, control material etc. This should be used when transporting the meter to the bedside for testing.
- **Base Unit** = For charging and data transfer. The meter should be kept in the base unit when not in use.
- **QC** = Quality Control
- **Operator ID** = Your unique barcode on your badge
- **Patient ID** = The 9 digit primary CSN barcode. DO NOT use the medical record number or the HAR.
- **Connectivity** = The system that keeps the meters updated and carries the information from the meters to the patient's record.

Glucose Test Strips

- Store strips in their original vial at room temperature. Keep vial tightly closed when not in use.
- Test strips are stable at room temperature for up to **6 months** or until the printed expiration date, *whichever is first.*
- **Write the new open and discard date on the vial with a Sharpie. Cover written date with tape to prevent smearing.**
- **Strips come in a box of two. Write the 6 month expiration date on both vials.**

Quality Control (QC) Solutions

- Two levels of Quality Control are used to run QC.
- Store controls at room temperature.
- Keep the vials tightly closed when not in use.
- Expiration date is printed on the control vials.
- Once opened, Quality Control is stable for up to **3 months** or until the expiration date, *whichever is first.*
- **When opening a new vial, remove plastic, use fine tip Sharpie marker & write the 3 month expiration date on the vial. Cover written date with tape to prevent smearing!**

Quality Control Responsibilities:

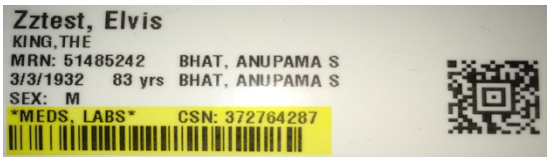
- Both levels of Quality Control are run each day the meter is used for testing. (High and Low)
- Controls must be run if you drop or bang the meter, you find the strip bottle was left open, or patient result does not match clinical condition
- When performing the QC testing, SCAN the barcode on the correct QC bottle.
- All Quality Control test results which fail must be repeated AND an appropriate comment entered. Follow steps on the top of the Troubleshooting Shortcuts for QC problem resolution.
- Scan your Employee ID badge barcode to identify yourself as the user, when performing **Quality Control** tests.

Scanning the Primary CSN on the patient's armband - Key Points:

- All testing must be ordered by a doctor and the patient must be correctly identified ONLY by scanning the primary CSN barcode on the patient's armband.
- When scanned correct, the patient name appears on the meter screen.
- If "Not Valid Patient" – visually confirm the CSN number on the armband matches the number on the screen and select "Override".
- If CSN does not match what is on the screen – replace armband.
- **"**ALL LOANER METERS WILL SHOW "NOT VALID PATIENT"** as they are not mapped for the temporary use.
- Using any other barcode for the patient ID is unsafe practice that may result in a serious patient care error.
- Scanning your employee ID badge barcode as the patient's ID will cause a delay in result reporting.

Patient Identification & Patient Safety - Numbers must Match!

- To verify the scan of the correct patient, compare the primary CSN number on the patient armband to the number in the meter window.

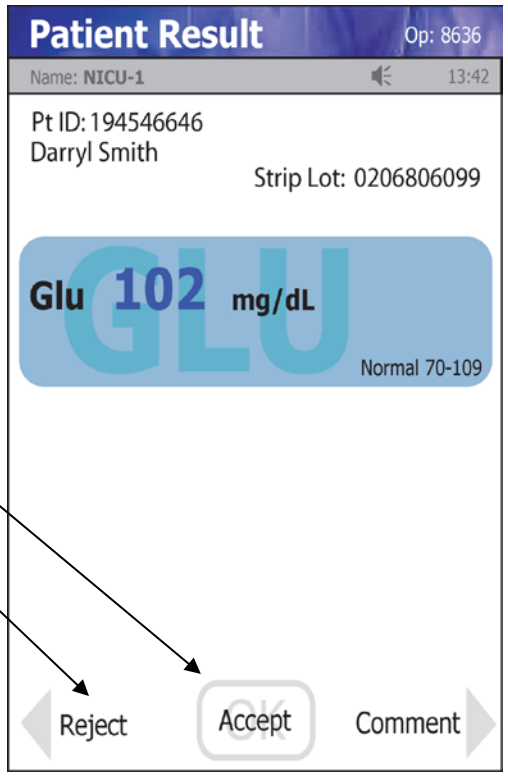


Patient Results

- When the patient results appear, a blue screen indicates normal glucose value.
- **Always press Accept or REJECT to store result in memory and send to the EHR**

Press **Accept** to **Accept** result

Press **REJECT** to **REJECT** result

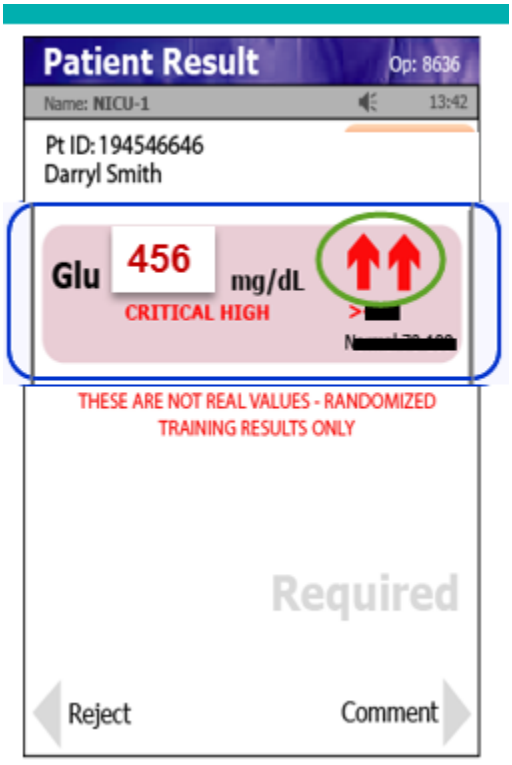


Reject results if you suspect a procedure error or question the result.

- Rejected results must be accompanied by a comment.
- **Rejected results are never to be charted or entered into notes**.

Critical Results

- A **red** screen indicates abnormal glucose value.
- A single up arrow displays Abnormal High results.
- **Two (2) up arrows** display **Critical High** results.
- **Adult Critical Range:**
  Critical High > 450 mg/dl and Critical Low <50 mg/dl
- **Neonate (0-6 days) Critical Range:**
  Critical High >200 mg/dl and Critical Low < 40 mg/dl
- Enter appropriate Critical Value action comment in meter.



One (1) critical comment must be added to all critical results! Review the critical comment codes below:

COMMENT:	WHEN TO USE:
Ran Wrong QC	When wrong QC is used
QC Out Will Repeat	QC solution result is out of range, or strip failure, etc.
Venous Sample	Central Line draw or IV start draw
Arterial Sample	Arterial line draw, dialysis Arterial sample
Neonate	Neonate patient tested with results from 40-49 (not critical results)
0 to 6 days Crit Low	Neonate critical value comment used when values are below 40
Unexpected result	When test result does not match clinical condition; reject and repeat glucose test
Lab Glucose ordered	Critical Value result—will order Lab glucose stat
Crit within 2 hr	Last Stat Lab glucose within prior 120 minutes (2 hours)
No lab per MD	Critical value but MD specifies no lab draw to confirm
Pt refused lab draw	Patient or family/surrogate with DPAHC/POA rights refuses additional Stat lab draw
Performed by student	Observed student for acceptable test performance

When to use "Unexpected Result"

- You feel the result is questionable.
- You realized you scanned the wrong patient.
- The meter was moved during testing.
- Improper finger prep.
- Line not cleared properly.
- **ALL "UNEXPECTED" results require choosing "REJECT" on the meter, followed by a repeat test.**
- **All UNEXPECTED/REJECTED results are not to be charted.**

When Test Results Don't Match:

- If you obtain a blood glucose result that does not match the patient's clinical condition, before you repeat the glucose test
- Run both high and low QC tests to validate that the meter is accurate.
- Then repeat the patient test.
- *Still puzzled by the glucose result? Reject the result & Order a lab draw immediately!*

Use of Emergency Barcode ID form

A green emergency barcode ID form should be used for all patients who do not have a functioning armband or are not yet registered. ****Please not that lab loaner meters will not display the patient name. It is not necessary to use a green form when testing on a lab loaner. Verify that the CSN number on the patient armband matches the patient ID number on the meter and proceed with testing.****

- Scan the Emergency Barcode ID Form.
- Write the date, time and result directly off of the glucose meter's screen onto the form.
- Print your initials
- Stick a patient registration ID label on the form as soon as one is available.
- Deliver the form to the Lab ASAP! If lab does not receive the form, unidentified patient information will be sent to lab manager.
- Note: Forms are available in packs from Tully Whir print shop. USE THE GREEN FORMS.

Applying Blood Sample to Test Strip

- Always **hold the meter upright or level** when touching test strip to blood. *Blood seepage into the test port can damage the meter!*
- Fill the test strip completely **- DO NOT REAPPLY BLOOD TO STRIP.**
- If the well of the test strip does not fill, discard the strip and begin test again with a new strip.

Patient Testing – Obtaining Blood Sample

- Insert test strip into strip port, make sure that the Nova label is facing upwards.
- Gloves must be worn during sample collection and testing procedure.
- Gently massage/apply warming device to site to stimulate blood flow.
- Clean site **thoroughly** with soap and warm water or alcohol pad. Dry thoroughly.
- Select appropriate lancing device, perform puncture.
- Gently squeeze to expel drop of blood – wipe off first blood drop.
- Use the second drop of blood for testing.

Our Blood Glucose testing system is fully connected. This means that:

- Results go to the patient's permanent electronic medical record.
- Meters can receive updates (e.g. badge ID, new lot reagents) at anytime without leaving the department, each time they are placed back in the base unit.
- Meters need to stay on the base unit when not in use. Ensure the green light on the base unit lights up after placing a meter in the base unit.
- As we see problems with processes and technique, they can be addressed in a timely manner.
- When a meter is not downloading, you might get a call to check it, and if needed, you may be asked to call IT.

Docking Station & Batteries

- When the meter is not in use, always keep it in the Docking Station.
- Docking charges the meter and battery.
- Connects the meter to a data management system.
- Sends test results to the patient's EHR.
- Patient admits, discharges and transfers updates every 15 minutes.
- Typical life of fully charged battery is 8 hours or 40 tests (when not docked).

Docking Station Light Indicators

- Left: Power green = on
- Middle: IT Connection blinking green = connection working
- Right: Battery green = battery charged amber = battery charging

Tips for Scanning Operator ID Badge

- Hold meter 4-6 inches from badge, with beam steady on barcode.
- Clean scanner window on meter with a damp cloth to remove any hazy build up
- When operator ID appears on the top of the screen, select "accept". The barcode has been successfully scanned and then part of the operator name appears in the upper right hand corner of the meter.
- For "**Invalid Operator**" Error Messages:
- Replace badge if barcode is smudged or worn
- Is your Glucose Meter Competency current? If not, you need to complete the recertification by completing QC.
- Were you issued a new badge for any reason? If so the barcode digits on your badge may have changed.

Troubleshooting Meter Download Problems:

- When you place the Meter in the base unit, the display should immediately read **"Connecting"** then read **"Transmitting"** and after a few minutes, it should read **"Complete"**. If you don't see this, remove the meter and re-seat it properly in the base unit.
- If the meter still will not connect, check to see that the base unit is connected to both power, and to network port.
- If all cables and cords are secure, the computer may have "lost" its connection to the server. You may need to call IT.
- If still not downloading, open a ticket with the Help Desk.

Standard Operating Procedure (S.O.P.) Review

- Review the current Lab/Nursing procedure for Bedside Glucose Testing. Knowing the correct procedure will help reduce or eliminate operator errors.

Maintenance: Cleaning the Meter

- **The meter must be cleaned and disinfected after each patient test.**
- Put on clean gloves.
- Keep meter in horizontal position. Clean external surface of meter thoroughly with a damp Sani-Cloth wipe. Ensure that any visible contamination is removed.
- Gently wipe the surface area of the test strip port. No fluid should enter the port. Do not disturb the black temperature sensor.
- Ensure the meter surface remains wet for 3 minutes.
- Do not dock the meter when base is wet!
- Wipe off any residue on the display screen with a clean dry paper towel or gauze.
- Check that the barcode read window is not hazy or otherwise dirty. Clean with a damp cloth.

Use of Comments: Arterial or Venous = A Patient Safety Issue

- When an arterial or venous blood draw is used to run a Nova glucose test, you MUST enter a comment to identify the type of specimen.
- WHY? Glucose results may vary according to the source of the specimen.
- That specimen type must then be used for any future glucose tests. Consistently using the same source of specimen ensures more reliable results trending and safer patient care. Do not use venous blood from phlebotomy draws as samples.
- When doing fingerstick capillary blood for testing, no comment is necessary. **The meter and strips are calibrated for capillary blood**.

Avoiding Procedure Errors

- **I**mproper preparation of a sample site may cause inaccurate blood glucose test results that do not match the patient's condition or appearance.
- When doing a fingerstick to obtain blood, the fingerstick site should be clean and dry. Patients, especially children, may have handled sugary food items, fruit or candy.
- Cleanse the patient's hand, and wipe the target puncture site with alcohol. Allow the alcohol to dry, or wipe it off with a clean dry 2X2 gauze, cotton ball or tissue.
- Wipe away the very first drop of blood with a clean, dry 2X2 gauze or cotton ball, THEN apply the second drop of blood to the side of the curved area on the test strip at the indentation point. The test strip will wick the blood in until the test strip yellow window is full.
- Do not allow blood to drop on top of the test strip window.
- When a patient handles high-sugar food items and you do not effectively clean off the fingerstick site, sugar on the skin can mix in with the fingerstick blood sample and mislead you with a false result.

Patient Testing Responsibilities – Comments for Critical Values

- *ALL* critical value results require a comment.
- Comments are part of the permanent record.
- You must accurately choose the comment that is applicable to the result.
- All critical value results from bedside point-of-care testing require one or more comment(s) and appropriate follow-up EVERY TIME.

Testing Error Reporting

User errors can be serious, resulting in patient harm or even death! For all Point-of-Care testing, any user error resulting in a *patient safety issue* or *near-miss* requires completion of an incident report form/PSR risk report form. This form is online in some hospitals.

You may also receive a corrective action form from the Lab which requires follow-up of either you or your manager. If you continue to make user errors, action will be taken; for example, your certification as a user may be suspended until attendance at a formal training course has been completed. Continued errors may result in disciplinary action.

Examples of Patient Safety Issue ERRORS:

- Failure to match scanned Patient ID number in the meter window to the ID band number on the patient.
- Failure to validate a Critical Value with a Lab draw verification for the first critical value within 2 hours.
- Testing on a non-patient (employee or visitor)

More Tips and Reminders: Meter not working?

- Instruments can be returned to the lab for a loaner ONLY if an attempt has been made to correct the problem and the log has been filled in. When returning a meter for a loaner, it must be returned in the accessory case.

Can we use a patient's meter they bring in from home?

- NO. Do not use a patient's home glucose meter for testing for hospital results. A patient may use their home meter along side the hospital's meter; however, you cannot use results from any meter other than the approved hospital meters for patient treatment or medication decisions here in the hospital.

Patient Testing: When Bedside Point-of-Care Testing is NOT Safe!

You must know when bedside/fingerstick testing is appropriate and when it is not. Certain patient situations require lab testing instead. Using NOVA glucose test results for these situations may result in false results that may mislead the nurse and physician. Patients in the following categories must have lab venipuncture glucose testing to obtain accurate results.

Bedside glucose testing is *NOT appropriate* for:

- Capillary blood glucose testing may not be appropriate for persons with decreased peripheral blood flow, as it may not reflect the true physiological state. Examples include, but are not limited to: severe hypotension, shock, hyperosmolar-hyperglycemia (with or without ketosis) and severe dehydration.
- Patient with edema in extremities = NO finger sticks or heel sticks since you will get more fluid than blood.
- For patients with a Hematocrit greater than 65% or less than 20%