Point of Care (POC) Glucose Testing

Revised on: December, 2018
Reference: Policy LAB 23-A; Point of Care Nova Stat Strip Glucose Meter

- The Nova Stat Strip Blood Glucose meter is UHB’s approved Glucometer for patient testing
- Operator certification status must be kept current
- Use **Universal Precautions** when testing as per hospital policy
- Follow **patient identification procedures** when testing as per hospital policy
- Run two level of **Quality Control** on every 24 hours
- **Clean and Disinfect** meter after every patient testing
Nova StatStrip Meters are assigned to nursing units by the Point of Care Lab.

Staff should NOT move meters from their assigned units.

If a meter is needed in a particular unit, contact the Point of Care Lab immediately.
Nova StatStrip Test: Strip Vials

STATSTRIP VIALS:

- Contain a desiccant to **protect against humidity**
- Must be **CLOSED** with its lid when not in use
- **Store at room temperature** between 15 to 40 degrees Centigrade (59 to 104 degrees Fahrenheit)
- **When opening a new vial** of strips, **write** on vial:
  - Date **Opened AND Date Expired**
  - Expiration date is **180 days from opening** or label expiration date, whichever is first
  - Initials **do not need** to be written on vial
When To Perform Quality Control Testing?

• **Every 24 hours** for each Meter (2 levels of Control – Level 1 and Level 3)
• When a **NEW VIAL** of test strips is **OPENED**
• **After** major maintenance or repair of the meter, i.e. **battery change**.
• When the **meter is dropped**
• When a **new meter** is used
• When **results are questionable** based on clinical signs & symptoms
• Whenever **problems** (storage, operator, instrument) are identified or anytime there is a concern
Control Solutions and Testing

- Store at room temperature, 15-30°C (59-86°F)
- Control vials must be covered with their lids when not in use
- When opening a new Control Solution write on bottle:
  - Date Opened AND Date Expired
  - Expiration Date is 90 days from opening or label expiration date - whichever is first
  - Initials do NOT need to be written on vial
- Run Level 1 and Level 3 controls each 24 hour period on each meter
- To test Gently Mix control solution vial before using
  - Discard 1st drop of Control Solution
  - Use 2nd drop of solution for testing
- After Control Testing select “Meter Cleaned” comment
Control Test Troubleshooting

• If a control level test is out of range:
  ➢ **REPEAT CONTROL** level test

• If control level test results are **AGAIN** out of range:
  ➢ **OPEN** a **New Control vial** and run test

• If control test results **CONTINUE** to be out of range:
  ➢ Open a **New Strip vial** and run test

• If control test results are **STILL** out of range:
  • Call Point of Care at ext. 1679 or the Bay Ridge Laboratory at 718 567-1158 for assistance **during the day**
  • **Off hours**: Go to Lab (2nd floor) and obtain a new meter
Patient Testing

**Starting a Test**
- Enter patient 7 digit identifier (Financial #)
- Identify specimen source (capillary, venous or arterial)

**Applying Blood Sample to Strip**
Maintain meter in a horizontal position to keep blood out of the meter
- Discard 1st drop of blood. Use 2nd drop of blood.
- Allow blood drop to touch the tip of the strip. Fill strip completely
- Do not move finger from strip until meter countdown begins
- NO re-application of blood once the testing has started

**Enter Comments After Each Patient Test**
- Can choose up to 3 comments
- Highlight ALL desired comments AT ONCE and ‘Accept’
- MUST select ‘Clean /Disinfect Meter’ as a comment
- Always verify comments display on patient result screen and Accept again.
Patient Testing

If Results Are Outside Unit Specific Action Range
- Select Comment “Repeat test”
- Test MUST be repeated to confirm results.
- After confirmed repeat select needed comment(s) such as:
  - Clean/Disinfected
  - Initiate Hypoglycemia Protocol
  - Caregiver Notified
  - Send to lab
- Follow appropriate protocol
Unit Specific Action Ranges

- **Pediatrics**: Less than 70 mg/dL – more than 200 mg/dL
- **NICU**: Less than 45 mg/dL – more than 150 mg/dL
- **Newborns on L&D and Mother/Baby Unit**
  - Less than 25mg/dL: birth to the 1st 4 hours of age
  - Less than 35 mg/dL: 4 to 24 hours of age
- **Ambulatory**: Less than 70mg/dL – more than 450 mg/dL
- **CTICU**: Less than 60 mg/dL – more than 120 mg/dL
- **Adult Medical/Surgical**: Less than 70 mg/dL – 450 mg/dL

<table>
<thead>
<tr>
<th>Action Range</th>
<th>Comment Code</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Out of Instrument Reportable Range</td>
<td>Repeat Test</td>
<td>Repeat test to confirm result</td>
</tr>
<tr>
<td>&lt; 10 or &gt; 600 mg/dL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confirmed Result</td>
<td>Caregiver Notified and Send to Lab</td>
<td>Send specimen to Laboratory</td>
</tr>
</tbody>
</table>
## Use of Common Codes for Action Ranges

<table>
<thead>
<tr>
<th>Unit</th>
<th>Action Range</th>
<th>Comment Code</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult – Inpatient</td>
<td>&lt; 70 or &gt; 450mg/dL</td>
<td>Repeat Test</td>
<td>Repeat test to confirm result</td>
</tr>
<tr>
<td>Confirmed Result</td>
<td>Caregiver Notified</td>
<td></td>
<td>Initiate Inpatient Hypo/Hyperglycemia Protocol</td>
</tr>
<tr>
<td>NICU</td>
<td>&lt; 45 or &gt; 150mg/dL</td>
<td>Repeat Test</td>
<td>Repeat test to confirm result</td>
</tr>
<tr>
<td>Confirmed Result</td>
<td>Caregiver Notified</td>
<td></td>
<td>Initiate NICU Hypo/Hyperglycemia Protocol</td>
</tr>
<tr>
<td>Newborn</td>
<td>&lt; 25 or &gt; 150mg/dL 0 - 4 hrs</td>
<td>Repeat Test</td>
<td>Repeat test to confirm result</td>
</tr>
<tr>
<td></td>
<td>&lt; 35 or &gt; 150mg/dL 4-24 hrs</td>
<td></td>
<td>Initiate Newborn Hypo/Hyperglycemia Protocol</td>
</tr>
<tr>
<td>Confirmed Result</td>
<td>Caregiver Notified</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pediatric</td>
<td>&lt; 70 or &gt; 200mg/dL</td>
<td>Repeat Test</td>
<td>Repeat test to confirm result</td>
</tr>
<tr>
<td>Confirmed Result</td>
<td>Caregiver Notified</td>
<td></td>
<td>Initiate Pediatric Hypo/Hyperglycemia Protocol</td>
</tr>
<tr>
<td>CTICU</td>
<td>&lt; 60 or &gt; 120mg/dL</td>
<td>Repeat Test</td>
<td>Repeat test to confirm result</td>
</tr>
<tr>
<td>Confirmed Result</td>
<td>Caregiver Notified</td>
<td></td>
<td>Initiate CTICU Intensive Insulin Infusion Protocol</td>
</tr>
</tbody>
</table>
Clean Meter

- Wear protective gloves
- Make sure test strip is removed from meter
- Lay meter on flat surface
- Obtain a fresh germicidal wipe or Clorox Bleach (hospital approved)
- Wipe external surface of meter thoroughly with the fresh wipe
- Discard used wipe & gloves into appropriate container

Disinfect Meter

- Use fresh Clorox bleach germicidal wipe, thoroughly wipe surface of the meter (top, bottom, left & right sides)
- Avoid the bar code scanner & electrical connector when wiping
- Ensure meter surfaces stay wet for a minimum of 3 minutes and is allowed surfaces to air dry for an additional 1 minute
- Dispose gloves into appropriate container
Isolation Precautions

- Use Universal Precautions

- Clean and Disinfect Statstrip Glucometer \textit{AFTER EACH PATIENT} use

- Use a separate Statstrip meter based on clinical situations (e.g. Hemodialysis)
Results & interventions are documented in HealthBridge Flowsheet /Point of Care Testing.
Critically Ill Patients
For the Purposes of Glucose Point of Care Testing

*CAPILLARY sample testing (finger stick blood) may be used*

For the Purposes of Glucose Point of Care Testing:

“Critically Ill” patients are those with:

- **Unstable hemodynamics** — low perfusion index, use of vasopressor, presence of edema and low mean arterial pressure
- **Decompensated heart failure** New York Heart Association Class IV
- **Severe Dehydration** as a result of diabetic ketoacidosis or hyperglycemic hyperosmolar non-ketotic syndrome
- **Arterial occlusive disease**

However, for FS >600 mg/dL a serum sample must be drawn
Check ‘Critically Ill’ Patients: Option One

Using the Nova Stat Strip Meter

- Collect **Capillary, Arterial or Venous** blood sample
- Perform glucose on the Nova Stat Strip

**Procedure:**
- Collect blood in a **lithium heparin collection device** (ABG syringe)
- Draw **appropriate discard sample** to clear the arterial or venous line before drawing a blood sample for testing.
- Sample must be tested **within 30 minutes** from collection.
- **Identify specimen source** as **Capillary, Arterial or Venous**
- Place blood sample on Nova Stat Strip and follow testing procedure
Send a whole blood specimen to the Lab

Procedure:

• Collect blood in a **grey top tube** or **add on a glucose** test to an arterial or venous **blood gas** sent to lab.

• Draw **appropriate discard sample** to **clear the arterial or venous line** before drawing a blood sample.
Morning fingerstick glucose is checked at or after 7:00 a.m., unless clinically indicated or per unit policy or prescriber’s order (Rehabilitation, OB, Critical Care, etc.).

**Finger stick glucose must be checked:**
- Within 1 hour prior to administering prandial or correction insulin.
- If it is more than 1 hour since the time of the test and insulin administration, test again.
Care of Visitors and Employees

- Use of the Glucose Meter is **Not** for Screening
- Do **NOT** use the Glucose Meter to check a visitor’s or employee’s blood glucose
  - Employees or visitors who are **ill** **MUST be Referred** to the **ED immediately**
All Operators must follow the re-certification schedule and recertification test performance requirements:

1. Initial Certification
2. Renew in 6 months, and then again in 6 months, then....
3. Annually

Re-certification Steps - Go to: [http://www.downstate.edu/ogm/](http://www.downstate.edu/ogm/)

**Step 1:** Review the Re-certification presentation  
**Step 2:** Complete the Post Test  
**Step 3:** Upon successfully completion of the Post test, print your Certificate of Completion for your records.  
**Step 4:** Complete two levels of controls and one patient test on your unit immediately after completing the exam
## Troubleshooting Meters and Patient Identification

<table>
<thead>
<tr>
<th>Possible Problem</th>
<th>Recommended Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scanning of barcode or manual entry of strip lot number, QC lot number or Operator ID number in error</td>
<td>Check and re-scan or manually re-enter Patient Financial Number</td>
</tr>
<tr>
<td>Scanning or manual entry of Patient Medical Record Number instead of Patient Financial Number</td>
<td>Check and re-scan or manually re-enter Patient Financial Number</td>
</tr>
<tr>
<td>Glucometer did not obtain patient registration information from Hospital Registration System because meter was not docked (wired) or battery low preventing communication (wireless).</td>
<td>Dock meter to allow glucometer to obtain updated patient registration and financial identifier information.</td>
</tr>
<tr>
<td>Error in manual entry of Patient Financial Number</td>
<td>Check and re-scan or manually re-enter Patient Financial Number</td>
</tr>
<tr>
<td>Use of an unreadable or damaged Patient Financial Number barcode</td>
<td>Check, reprint Patient ID barcode and re-scan or manually re-enter Patient Financial Number</td>
</tr>
<tr>
<td>Glucometer testing must be performed prior to patient registration because of an Emergency situation</td>
<td><strong>Applies ONLY to ED, NICU, L&amp;D and CATH Lab areas.</strong> Non-Registered Patient Procedure to be followed.</td>
</tr>
<tr>
<td></td>
<td><strong>ALL other units may NOT perform testing with INVALID, NEW or NOT IN SYSTEM patient financial numbers.</strong> Operator MUST investigate and correct before testing.</td>
</tr>
</tbody>
</table>
Thank you for viewing the POC Glucose Training presentation

Click here to take the Post-Test