Nova Stat Strip Glucose Meter Training

Training and Development
October 2013
Waived Testing

• Waived testing is lab testing that has been “waived“ by the lab for other non-laboratory personnel to perform

• It is also called “Point of Care Testing” (POCT) because it is performed at the patient’s bedside or directly at the POINT of patient care rather than being sent to a lab. Waived testing differs from regular lab testing in that the specimen is not only collected, but also tested and results interpreted by non-laboratory personnel
Waived Testing

• Physicians base their treatment and plan of care on these results, so accuracy is crucial!

• Waived testing is both highly monitored and highly scrutinized
Training and Competency

Only those operators who have completed training and have demonstrated competency may perform POCT blood glucose testing.

• Initial competency
  – Attending training session on the glucose meter
  – Successfully completing a written examination
  – Demonstrating competence through the proper performance and interpretation of quality control

• Maintaining competency:
  – Annual online education
  – Demonstration of competence in the use of the meter as above
Blood Glucose Monitoring

May be necessary for patients:

– who have Diabetes Mellitus
– who are receiving TPN or PPN
– who are receiving medications which affect blood glucose concentration
– who have undergone liver or pancreatic procedures
– with post-op or post procedure elevations in glucose secondary to stress
– with infection
– undergoing renal dialysis
Quality

• To insure that results obtained are accurate, quality control testing (QC) using solutions with known values is performed on waived testing supplies and equipment prior to testing patient specimens.

• A general rule of thumb –
  – If it is a machine, QC must be performed **EVERY day** of patient testing.
  – If it is a supply, QC is performed when boxes or vials are first opened
Quality Control (QC)

• Two QC samples, Level 1 (Low) and Level 3 (High) **MUST** be performed satisfactorily, once every 24 hrs.
  – If this is not done, the meter will lock out users until QC is performed
• All test strips and control bottles must be dated with the open date and expiration date and initials.
• This is a Laboratory Regulatory Requirement!

Open Date: 03/11/13
Exp Date: 06/11/13

AB
QC Procedure

• Log-in by scanning your CFV badge
• Choose QC
• Scan the vial of test strips
  – Press “Accept”
• Scan Control solution Level 1
  – Press “Accept”
• Place the test strip into the meter
  – There will be a feeling of resistance as you insert the strip
QC procedure

• Gently mix control solution and apply drop to strip
• After 6 seconds, view results (PASS/FAIL)
  – **FAIL** requires a comment
• Discard test strip
• Repeat procedure with Level 3 control solution
QC Procedure – Troubleshooting

• If QC fails, the following troubleshooting steps should be taken
  – Check your Strips and QC solution expiration date
  – Make sure the QC solution has been mixed thoroughly
  – Repeat control test, record comment on meter
  – Open new set of controls and repeat test
  – Open new test strips and repeat test
QC Procedure – Troubleshooting

If QC continues to fail after these steps...

• **STOP TESTING**

• Take the meter out of service

• Contact the POCT Office for assistance

  Ashley Shortridge, RN
  Point of Care Coordinator
  910-615-6145
Nova Stat strips®

- Once opened, test strips are good for 180 days (6 months minus 4 days) or manufacturer’s expiration date
- Store at room temperature and tightly capped as these strips are sensitive to both light and moisture
Control Solutions

• Once opened, control solutions are good for 3 months or until expiration date on the vial
Patient Testing
Specimen Collection

• Capillary, venous, neonatal (including cord blood), and arterial whole blood specimens may be used

• Remember to use Standard Precautions when obtaining blood samples and performing patient testing
Capillary Blood Collection
(Finger stick/Heel Stick)

• (Important: only trained staff may use the glucose meters. Access to the meter is by scanning personal Trust ID badge. Use of someone else’s badge may result in disciplinary action)

• Verify the patient’s ID with 2 unique identifiers:
  – FULL Name & DOB

• Remove meter from docking station

• Don Gloves

• If an isolation room, place glucometer into clear Specimen bag
Capillary Blood Collection
(Finger stick/Heel Stick)

• Select an appropriate sampling site
  – Palm side of the finger tip
  – Lateral or medial plantar surface of the infant heel

• Warm the site if needed.
• Clean site with 70% alcohol and ALLOW TO AIR DRY.
Capillary Blood Collection
(Finger stick/Heel Stick)

• Holding hand downward, massage finger with thumb toward tip to stimulate blood flow
• Press “Login”. Press “Scan” while pointing barcode reader at ID badge barcode
• From the Patient Test screen press “Accept”
• “Enter Strip Lot” screen is displayed. Scan the strip lot number from the side of the strip container. Press “Accept”
Capillary Blood Collection  
(Finger stick/Heel Stick)

- Enter the patient’s ID by scanning their arm band barcode,
- Press “Accept”
- Insert Strip

There will be a feeling of slight resistance as the strip is inserted into the meter
Safety Lancets

TWIST, do not pull the lancet needle cover off

Hold the lancet against skill surface, do not press into skin

Trigger the lancet by pressing on the lever-like trigger
Lancets will immediately "safety" the needle
Capillary Blood Collection

• Wipe off the first drop of blood, using gauze or cotton ball

• Allow a small drop of blood to form by gently applying intermittent pressure. Do Not Milk the site.

• Hold the meter in a horizontal position
  – This will prevent blood from entering and contaminating the meter
Capillary Blood Collection

• Touch the end of the test strip to the drop of blood. Capillary action will cause the blood to flow in the 4 wells on the test strip.
Capillary Blood Collection

- The strip must fill completely upon touching the blood droplet.
- If the test strip wells do not fill completely, discard the test strip and repeat the test with a *new strip*.
  - Do not attempt to add more blood.
- The Result will appear in 6 seconds.
Capillary Blood Collection

- You must ACCEPT or press OK to complete and transfer the data to the patient’s record. Results will not transfer to the medical record if you do not press ACCEPT or OK.
- To accept/reject the result, press the Accept/reject soft key.
- To add a comment before accepting or rejecting the result, press the “Comment” key. Accept your comment and then accept or reject the result.
- A comment must always be added if rejecting a result.
Capillary Blood Collection

- The nurse enters the results in the patient’s notes, and the appropriate action taken if any.
- Discard the test strip and repeat with a new strip.
- Discard all contaminated patient materials in appropriate biohazard containers.
- Dispose of used lancets into sharps container.
Results

• The Nova Stat Strip glucose meter reads results between 10-600 mg/dL
  – A result reading higher than 600 will read as “HI”
  – A result reading lower than 10 will read as “LO”
• Any out-of-range result will be displayed in red
• Results within normal range (65>115) will be displayed in blue
• If results are inconsistent with the clinical presentation, consider retesting, performing quality control testing or sending a blood specimen to the lab
Reporting of Values

• Notify the LIP immediately for blood glucose levels greater or less than the parameters specified in the written orders.

• Document in the patient’s record:
  – Name of the provider that was notified
  – Orders that were received
Cleaning the Meter

- Wipe meter with a Sani-Cloth® wipe
- The meter must remain visibly wet with the disinfectant for 2 full minutes.
- Immediately follow with a dry tissue cloth to remove all cleaning residue
- If meter screen develops a light film, wipe a gauze moistened with water.
Cleaning the Meter

For patients on “Special Enteric Contact Isolation” meters are to be placed in clear specimen bags for use at the bedside

• Once out of the room, the meter must be cleaned with Clorox Bleach wipe.
  – The meter must remain visibly wet with the bleach for 5 minutes. Wipe with a damp cloth afterwards to remove any bleach residue.

• Do not spray solutions on the meter!
  – This could damage the meter
Batteries....

• The meter should ALWAYS be docked when not in use
• The Nova Stat Strip glucose meter is powered by a rechargeable lithium battery
  – Do not throw them away
• If the battery in the meter is dead, swap it with a battery from the dock
Battery Replacement

• Replace battery when “Red battery – switch batteries” message appears.
  – Press “Power” button to enter Sleep Mode
  – Push down on 2 cover latches on the back of the meter
  – Push up on the battery latch to release the battery
  – Remove old battery and replace with charged battery
  – Insert new battery into the meter bottom first
Battery Replacement

- Replace cover
- Place drained battery into docking station to recharge with the battery label facing forward
  - The light on the charger station should be lit
  - If you don’t see the light, the battery is in backwards
  - Make sure there are always batteries in the dock – LED light shows yellow for charging and green for fully charged
Safety

• The battery used in this meter may present a fire or chemical burn hazard if mishandled
• Do not disassemble, heat above 100 degrees C (212 degrees F) or incinerate
• Do not stare into the Laser light or point it towards anyone’s eyes while scanning a barcode
Transmission of Results

• Push meter firmly into tote docking station until you see an hourglass appear.

• Make sure that the yellow light on the tote is lit indicating that there is a connection.
Docking the Nova Stat Strip Glucose Meter

- When the meter has successfully connected you will see the screen to the right

- The meter has sent results to the Valley link and to the lab and received back updates on operators and reagents and new patients
Trouble shooting

• Steps to resolve a problem may include:
• Repeating controls, mixing before retesting.
• Repeating a control with a new bottle of control material.
• Clean the glucometer with a saniwipe.
• Remove and place back into the meter the battery.
• Redock the glucometer. If the glucometer docking device does not show lights on in front, check the electrical connectedness of the docking site.
• If the meter freezes, remove the battery and place back in again.
## Factors Influencing Accuracy of Test Results

<table>
<thead>
<tr>
<th>Problem</th>
<th>Potential Impact</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using a previously punctured site</td>
<td>Accumulated fluid will contaminate the blood specimen (decreases glucose)</td>
<td>Obtain blood specimen from a fresh, non-punctured site</td>
</tr>
<tr>
<td>Improperly cleaning the puncture site with alcohol</td>
<td>Residual alcohol causes rapid hemolytic and adversely affects glucose results (increases glucose)</td>
<td>Allow puncture site to air dry after cleansing with alcohol</td>
</tr>
<tr>
<td>away the first drop of blood</td>
<td>Excess tissue fluid in blood specimen (decreases glucose)</td>
<td>Wipe away first drop of blood after the puncture is performed</td>
</tr>
<tr>
<td>Milking the puncture site to obtain the blood drop</td>
<td>Hemolysis and /or contamination of blood with tissue fluids</td>
<td>Hold the puncture site downward and apply gentle, intermittent pressure proximal to the puncture site</td>
</tr>
<tr>
<td>Edema at the puncture site</td>
<td>May give a falsely low glucose result</td>
<td>Finger stick collection not recommended</td>
</tr>
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<tr>
<td>Not enough blood applied to the test strip</td>
<td>Strip must be fully inserted into the meter before dosing with a sample</td>
</tr>
<tr>
<td>Test strips/ Controls stored at temperature extremes</td>
<td>Test strip and controls must be stored according to manufacturer’s instructions</td>
</tr>
</tbody>
</table>
| Test strips left uncapped                                     | Use test strips immediately after removal from vial.  
• Recap vial immediately after removing strip.  
• Vials found uncapped should be discarded.               |
# Common Nova StatStrip Glucose Meter Error Codes/Alerts

<table>
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<tr>
<th>Error Code/Alerts</th>
<th>Possible Cause</th>
<th>Solutions</th>
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<tbody>
<tr>
<td>Memory Full</td>
<td>Has not been docked</td>
<td>Dock Meter Immediately</td>
</tr>
<tr>
<td>Battery Low</td>
<td>Has not been recharged</td>
<td>Charge/Replace Battery</td>
</tr>
<tr>
<td>QC Due: xx:xx hrs</td>
<td></td>
<td>Run QC after time has lapsed</td>
</tr>
<tr>
<td>LOCKED</td>
<td>QC not run</td>
<td>Perform QC before Patient Testing</td>
</tr>
<tr>
<td>Test Strip Was Removed</td>
<td></td>
<td>Test cancel, insert new test strip</td>
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<tr>
<td>Temperature</td>
<td>Meter outside temperature range of 59°F-104°F or (15°C-40°C)</td>
<td>Move meter to correct temperature range and run QC</td>
</tr>
<tr>
<td>Bad Sample</td>
<td></td>
<td>Insert a new strip and rerun the test</td>
</tr>
<tr>
<td>Replace Strip</td>
<td></td>
<td>Insert another strip</td>
</tr>
<tr>
<td>Flow Error</td>
<td>Insufficient sample or sample applied incorrectly</td>
<td>Rerun test with a new strip</td>
</tr>
<tr>
<td>Transfer Failed</td>
<td>Connection to server broken</td>
<td>Contact POCT Office</td>
</tr>
<tr>
<td>Transfer Failed</td>
<td>Meter removed from dock before data transfer was complete</td>
<td>Re-dock the meter</td>
</tr>
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