Freestyle Precision Pro (FSPP) Glucose Meter

Regulatory Overview

- All lab tests are regulated by the government
- Bedside glucose is a Point of Care (POC) lab test
- **You** are performing this lab test **under** the lab's CLIA license
- It is scrutinized during the hospital inspection process
- Yearly re-certification in February is **required** for everyone

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Glucose Meter System Parts

Provided by Lab:

- Glucose meter
- Carrying case
- Docking station

Provided by Testing Area:

- Testing supplies
- Glucose strips
- Control solutions
- AA batteries

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Glucose Control Expiration Date

- Quality Control (QC) must be performed each day of patient testing with both LO & HI levels after 0100 (has to be the time on the meter)

- Controls expire **90** days after opening
  - Write the 90-day expiration date on the testing solution with a permanent marker
    - If manufacturer's date is sooner than the 90- day expiration date, use manufacturer's date and circle it. Do not write over bar code
 - Place tape over the expiration date

Manufacturer's expiration date
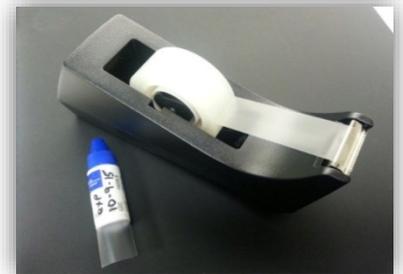
Running Quality Controls

- Turn the meter on using the power button to display the main menu

- From the display screen, press 2 to run a control test and follow prompts

- Use the scanner to scan the employee ID

- Scan control barcode

- Scan test strip barcode on wrapper

Scanner

Display Screen

Power Button

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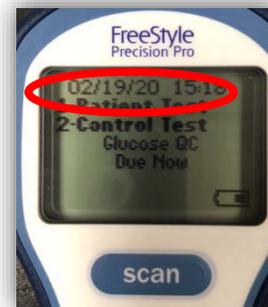
Running Quality Controls

- Open test strip (use the strip that was scanned)

- Insert test strip into the test strip port

- Mix controls by gently inverting prior to use. <u>Do not shake.</u> Air bubbles will cause it to fail

- Apply a small drop of control solution onto test strip making sure to **<u>keep the meter flat!</u>** Do not allow liquid to enter strip port. It will damage the meter.

- 5 second countdown: PASS or FAIL

Tear down diagonally

Test strip port

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Reasons Controls Fail

- Controls are expired
  - Check date on vials
    - Is it past the manufacturer expiration date?
    - Is it past the 90-day handwritten date?
- Wrong level of control was run
- Controls were not mixed
- Air bubbles in the nozzle of the vial

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Running a Patient Test

- Verify the patient using two patient identifiers using the patient armband

- Use an alcohol wipe to clean the finger and allow to air dry

- Choose a spot that is on the bottom side of the tip of one of the center fingers of either hand

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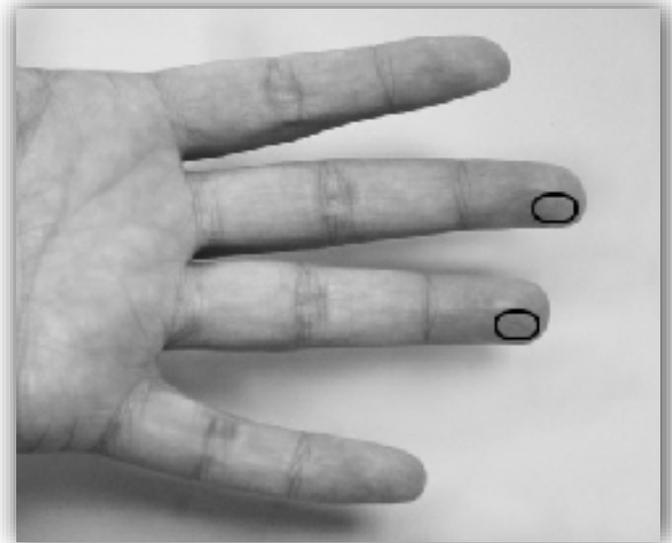
Running a Patient Test

- Turn the meter on
- Press 1-Patient Test
- **SCAN** or enter your employee ID
- **SCAN** or enter patient Financial ID Number (FIN) from armband
- If a patient is transferred from another facility, the wristband must be updated
- Test results will not be transmitted if wrong FIN is used

Scan if you can!

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Running a Patient Test

- Make sure it is a McLaren St. Luke's armband

- Hold down the scan button and review account number on the screen immediately after scanning

- If the scanned number on the screen is incorrect, press clear to delete the ID and try scanning again

ZZTEST, DAN–DONOTUSE
MRN: 121111984   FIN: 116529475

Scan here
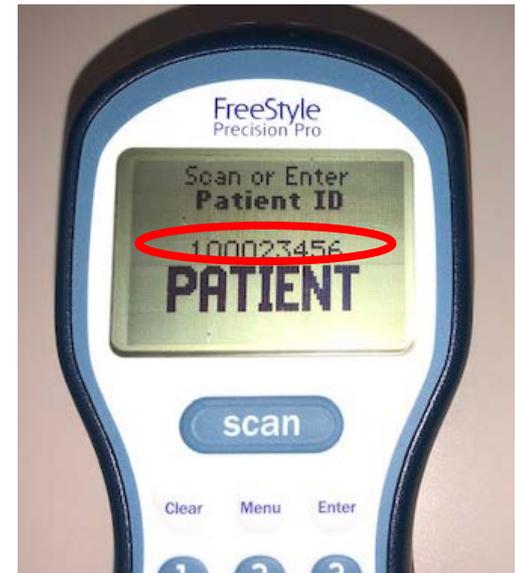
Running a Patient Test

- Scan barcode on test strip wrapper

- Insert test strip into test strip port

- Gently squeeze across the entire finger at the last joint

- Do not "milk finger"

- Use lancet to collect blood sample

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Running a Patient Test

Target Area

- Always wipe off the first drop of blood after poking finger and apply second drop to target area until you hear a beep

- If no beep, remove the test strip and press the 'clear' key to start over with new test strip

- **You may NOT add more sample to the test strip!**

- If using a syringe, point blood sample **away** from the meter

Running a Patient Test

- Keep the meter flat

- "Sample accepted" will display

- After 5 second countdown, test results will be displayed with patient information

- Review the FIN at the top of the screen and test result for accuracy

- If the ID is incorrect, use the POC Corrected Report form to get the patient ID corrected
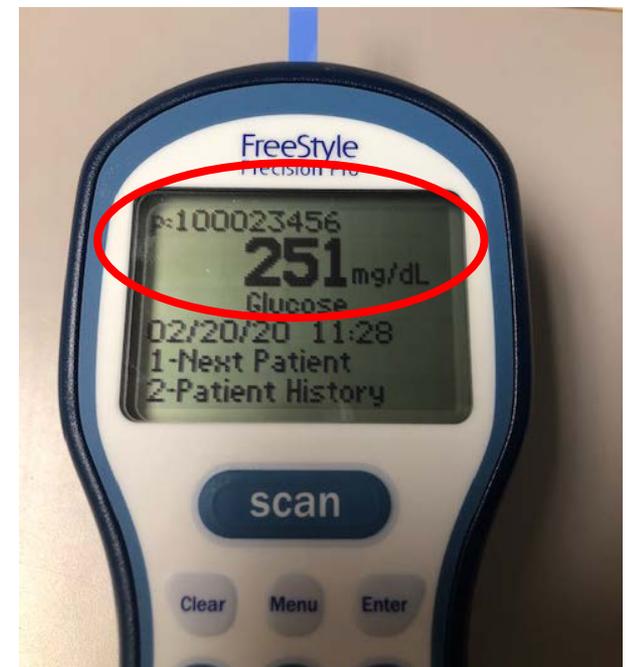
Comment Code #4

- Entering "4" will stop the results from going to the patient record in the event of an error

- 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!

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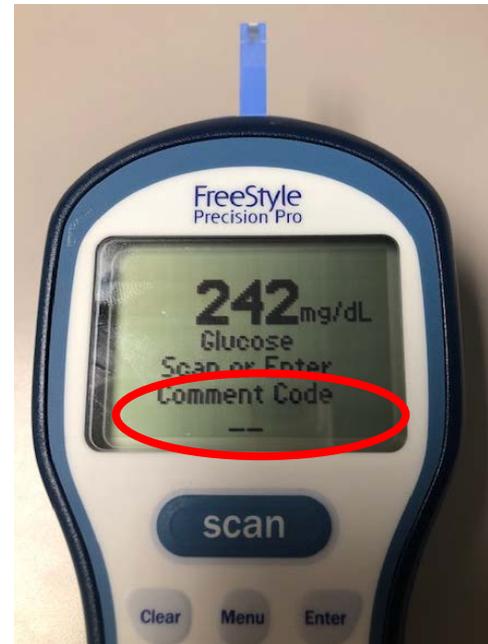
Result Documentation

- For results to appear in the EMR, place the meter into the docking station
  - Do not remove it while the arrows are circling
  - This must be done after each patient test or group of patient testing
- If download is unsuccessful "Last Upload Incomplete Re-Dock Meter" will display

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Docking Station

- The meters and docking stations are **<u>very</u>** costly to replace

- Place the glucose meter <u>gently</u> into the docking station, sliding the connector pins into place

- Meter will turn on when properly positioned. Do not force it in!

- Docking stations are located in nursing station areas

Connector Pins

Analyzing Results

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 "glucose level" if Point of Care (POC) Glucose is questionable

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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.

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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 <u>order lab test to confirm result</u>

- 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

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Review Patient Results

- Press MENU

- Choose 1 - Data Review

- Enter Employee ID number

- Select "All Patient Data" for all previous patient records

- After selecting review option, Press 1 – Previous

- Press 2 – Next to review more recent results

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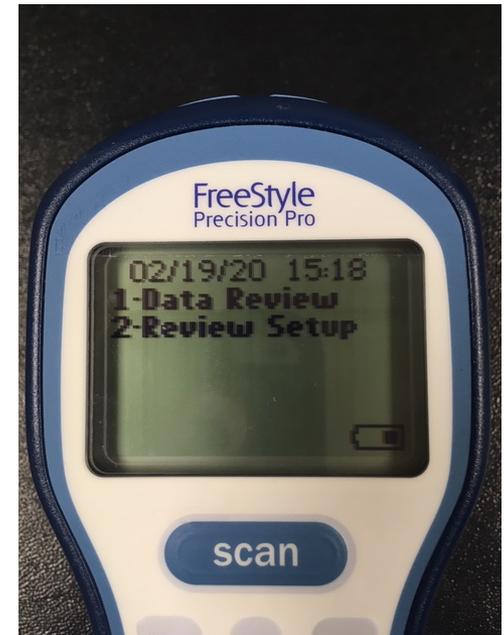
Troubleshooting and Maintenance

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Battery Replacement

- To remove the battery cover
  - Press down firmly on the cover
  - Push to slide the cover down
  - Lift up and away from the meter
- Remove old batteries and position new AA batteries in meter following "+" and "-" guides
- 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

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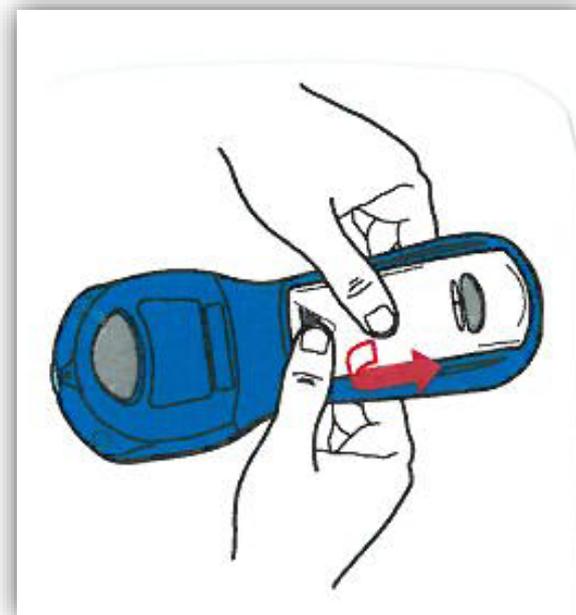
Meter Cleaning and Care

- Clean the meter after **each patient use** to prevent the spread of diseases

- Clean the supply case if blood is visible

- Always wear clean gloves when cleaning the meter

- Use only hospital approved disinfectant wipes and allow meter to air dry

- Do NOT write on the meters

KEEP CLEAN AND CARRY ON

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Troubleshooting Download

- 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 AA batteries
- If problem continues, take meter to closest docking station to download
- You may need to reboot the computer that the docking station is connected to

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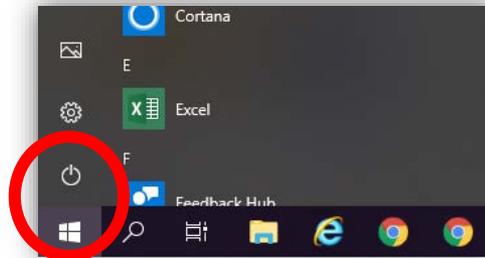
Top Reasons Results Do Not Transmit to EMR

1. You may have scanned a wrong barcode or one from another facility

2. If you manually entered the FIN number, you may have entered it incorrectly

3. If EMR is down, there are network problems, results will not transmit

Results will usually populate into the EMR within 5 minutes unless patient sticker was scanned. Scan the patient's armband to avoid this issue. If the results are not in the EMR, document manually!

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IT Support

- Contact the IT Service Desk (7070) to report a problem and receive assistance, if needed

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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 is depressed too long

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Meter Replacement

- Clean meter with disinfectant wipe
- Walk meter to lab and state problem
- Lab will issue you a replacement
    - Lab is open 24/7
- Do not send meters through the pneumatic tube!

FIN # Tips

- Use all 9's if no FIN#
  - Do not make up numbers
  - Only use when patient has not yet been admitted
    - No FIN# available
    - Examples: New babies, ER urgent situation
  - When manually entering a FIN number, enter it twice

KEYPAD TIPS

- Clear
  - Will back up one space while entering numbers
  - Will delete a barcode
  - Will return you to a previous screen
  - Use to deleted information entered incorrectly

- Backlight
  - Press and hold lower left key (under 7) for 2 seconds to activate the backlight, then release
  - Helpful for nightshift!

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Scanner Tips

- The scanner is used to scan the barcode of the item you will be using
  - Test strips
  - Control bottles
  - Employee badge
  - Patient armband

- Press and hold the scan key to activate the digital camera scanner
  - Hold still to activate the green light over the barcode
  - Need to be approximately 3-12 inches away from barcode to allow the meter to take a picture
  - Listen for beep to indicate capture

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POC – Corrected Result Form

- Use corrected result form whenever:
  - You entered all 9's as the FIN#
  - You need the patient result corrected

- ✔ Complete all sections of the form
- ✔ Provide patient and test information
- ✔ Forward to LAB

- This process must be completed to ensure patient glucose results are in the EMR

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Please provide the WRONG patient information: (fill in or apply patient sticker)

Name _____

Visit # _____

Medical Record # _____

Point of Care Testing – Request for Corrected Patient Report Form

Date/Time of error: _____   Floor/Unit: _____

For bedside glucose enter result here _____

For all other testing, attach a copy of incorrect patient test results to this form

Reason corrected report requested: (Check appropriate choice)

_____ All 9's entered as patient ID

_____ Incorrect patient ID entered into instrument

Please provide the CORRECT patient information: (fill in or apply patient sticker)

Name- _____

Visit # - _____

MRN #- _____

_____ Test(s) performed in error (List WRONG tests) _____

_____

_____ Other _____

Describe how incident occurred: _____

_____

_____

Name of patient caregiver notified of the error: _____

PRINT Name of person filling out corrected report form: _____

*Forward this form ASAP to the LAB via pneumatic tube

The following section is to be completed by laboratory (POC):
Corrective Actions:
_____
_____

Signature: _____   Date: _____

Lab: Put in POC Office mailbox for correction

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Critically Ill Glucose Testing

Freestyle Pro Limitations

- Point of Care (POC) glucose testing on critically ill patients must follow compliance standards required by CMS, CLIA, and CAP, which state that use of glucose meters outside of the FDA approved intended use is not permitted

- The FDA has enacted labeling changes specific to the use of waived whole blood glucose devices
  - The limitation clause: "This systems has not been evaluated in the critically ill" has been added

Critically Ill Patient Examples

- Severe dehydration
- Severe hypotension
- Shock
- Hyperglycemic-hyperosmolar state (with or without ketosis)

- Receiving an IV infusion of Ascorbic Acid or Xylose absorption testing
- Hematocrit range outside 15%-65%
- Neonatal patients with glucose values below 50mg/dl

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Neonatal Glucose

- As a matter of good clinical practice, caution is advised in the interpretation of neonatal glucose values below 50mg/dl

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Real Life Example

- A critically ill defined patient's glucose level (lab drawn) was 182 at 01:25
  - The POC glucose at 01:23 was 76 and at 01:46 was 32
- The lab value is the accurate glucose reading
  - The patient's condition was not consistent with hypoglycemia
- The POC glucose results near that time were **<u>NOT</u>** accurate

Critically Ill Glucose

- For the purpose of POC glucose testing at McLaren St. Luke's, a critically ill patient is defined as:

"Any Level 1 Patient"

Identifying Level of Care

- To find out what level of care a patient is in Cerner
  - Go to the patient's chart
  - In the grey bar, select "Patient Information"
  - Go to the "Visit List" tab
  - The level of care will be listed under "accommodation"

Critically Ill Glucose

Sampling:

- The Abbott FreeStyle Precision Pro glucose meters **CANNOT** be used for **any** critically ill patient on **any** arterial, venous or capillary specimen

- Glucose levels must be drawn from a central line, peripheral line, venous draw or arterial line and sent to lab in a green tube for testing

Questions and References

References:

- McLaren St. Luke's. (2018). *Point of Care (POC) Whole Blood Glucose Meter-FreeStyle Precision Pro*

- McLaren St. Luke's. (2018). *Point of Care (POC) Glucose Testing on Critically Ill Patients.*

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