Skills

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Blood Glucose Meter - Accu-Chek ® Inform II

Quick Sheet | Extended Text | Supplies | Illustrations | Test | CheckList

Alert

FHA Procedure

QUICKSHEET

Related Resources: **Pediatric DKA Regional Patient Care Guideline**
Hypoglycemia Adult Management Clinical Practice Guideline
Accu-check II PowerPoint and Resources

POLICY: **Point of Care Testing (POCT) - Policy (Laboratory Medicine and Pathology)**

1. The blood glucose POCT can be ordered by the healthcare provider (within their professional scope of practice) where there is a proven medical need.
2. All personnel performing Blood Glucose Monitoring must demonstrate competency by successfully completing the Glucose POCT training and competency checklist. Upon completion, the eligible personnel will have their Operator ID added to the glucose meters at their designated work location. Assigned Operator ID is required to operate the meter.
3. To maintain glucose meter access via Operator ID, an annual competency assessment is also required for all personnel. This includes successful completion of the following on a yearly basis:
    - QC Level 1 and Qc Level 2
    - 5 patient samples
    - The **Blood Glucose POCT Quiz**

PROTOCOL

Blood glucose monitoring shall be performed:

- on a Physician's order
- STAT when a diabetic emergency is suspected.
- Critical Care units obtain blood sample using a consistent method for each patient. Preference for sampling is:

First – arterial line

Second – central line.
Third – capillary puncture.

PATIENT ASSESSMENT AND PREPARATION

1. Review glucose monitoring order for time and frequency of measurement, and /or prn.
2. Determine if capillary blood glucose sample collection and testing by meter is appropriate:

IF ...	THEN ...
Patient has a Low or High Hematocrit. (<0.10 or > 0.65)	Glucose meter testing will provide inaccurate results. ◦ Notify Physician ◦ Lab Glucose is indicated
Patient has decreased peripheral blood flow. (i.e. circulatory problems, shock, administration of vasoactive agents, hypotension, dehydration, or other factors affecting peripheral circulation)	Glucose meter testing may provide inaccurate results. ◦ Prepare site by warming, if appropriate. ◦ Testing by another method may be indicated (i.e. Lab glucose).
Patient is known (or clinically indicated) to have: ◦ Galactosemia (1/ 40,000 births) ◦ High Triglyceride level: > 20 mmol/L ◦ IV administration of Ascorbic Acid, with a blood level > 0.17 mmol/L See Accu-Chek Inform II package insert for more details. Hyperlink	Glucose meter testing will cause inaccurate results (falsely elevated) Lab serum (plasma) Glucose may be indicated.
Blood sample is arterial or venous Note: Avoiding capillary sampling by removing whole blood from a vacutainer tube drawn by venipuncture is not acceptable practice	There can be physiological variation between capillary, venous and arterial blood. Arterial and capillary samples have similar values if perfusion is optimal. Venous samples may be up to 20% lower.
Not collecting a capillary sample	Document in chart, source of the sample, and that a discard occurred when necessary. Do not collect a blood sample from an indwelling line that has a solution containing glucose.

3. Determine whether specific conditions need to be met before or after sample collection (e.g., with fasting, before/after meals, after certain medications, or before insulin doses).
4. Explain risks to patient/family when performing skin puncture, in conditions such as low platelet count, anticoagulant therapy, bleeding disorders.
5. Assess understanding of procedure and purpose and gain informed consent. (For Pediatric population see Patient and Family Education – hyperlink).
6. Assess area of skin to be used as puncture site. Avoid areas of bruising, infection, edema, scarring, rashes and open lesions.

Procedure for Blood Glucose Monitoring using the Accu-chek Inform II

1. Perform hand hygiene.
2. Verify correct patient using two identifiers (**Patient Identification and Labeling of Laboratory Specimens - Clinical Policy**). Collect equipment and prepare supplies

3. Choose puncture site. (Please see extended text for variations between NICU/Peds/Adults)
    1. Neonatal/infant up to one year (**Heelstick/picture procedure**)
        - Lateral and medial planter surface of the heel
    2. Child greater than 1 year and adult
        - **Select the lateral side of the middle or ring finger**, avoiding the central tip of the finger which has a more dense nerve supply.
        - Index finger may be used as a alternative site.
        - Do not use the thumb or fifth finger (pinky).
        - Do not attempt to puncture a swollen, bruised, or previously punctured site
4. Choose appropriate lancet device based on patient age, weight and puncture site most suitable for depth of puncture based on assessment of skin.

Lancet	**Size**
Roche Safe T- Pro Plus	1.3 mm, 1.8 mm (default), 2.3 mm
One touch Sure Soft	1.5 mm
One touch Sure Soft	2.0 mm

5. Prepare the patient. If necessary, prepare the site by warming and using gravity before performing the test.
6. Turn on the meter. Ensure the "QC" is not due (i.e. QC should have been performed in the last 24 hours).
7. Manually enter user ID (employee number). Touch "Check mark" to confirm. "Main Menu" screen now appears.
8. Select Patient Test. Touch "**P**" to bypass patient ID.
9. Touch "barcode icon" and scan barcode of test strip vial while avoiding eye contact with laser beam. You may notice a slight delay for the meter to acknowledge the scan. You have eight seconds to scan the barcode.
10. Before removing Reagent Strip from container check the bar code and expiration date on the test strip vial.
11. Scan test strip lot number via barcode. **Patient Test** screen appears.
12. Remove reagent strip from container and tightly seal cap
13. Holding the test strip so that the lettering "Accu-chek" is facing upwards, insert test strip in top of meter. (Strip must be in meter before dosing). Wait until the "Flashing Drop" symbol appears before applying the blood drop. Sample must be applied within 5 minutes.
14. Perform hand hygiene and don clean gloves.
15. Clean site with antiseptic swab (i.e. alcohol), and allow it to dry completely.
16. Collect Sample:
    1. Neonatal
        - Lateral and medial planter surface of the heel
        - Heel stick procedure for infants up to 1 year – Hyperlink
    2. Child greater than 1 year and adults
        - Clean site with appropriate antiseptic swab (i.e. alcohol) and allow it to dry completely. (Residential Care use soap and water)
        - Hold lancet firmly against the side of the finger and push the release button.
17. **Wipe away first drop of blood (to prevent contamination of the sample) then apply second drop of blood into the front edge of strip (not on top)**. Blood sample size minimum 0.6 ul. (comparable to the size of a head of a pin). Result appears in 5 seconds.
18. Apply gauze and add pressure to the puncture site until bleeding stops.
19. **Interpret results**: Follow patients plan of care and see appropriate table in the extended text. If the result falls outside of normal range an action prompt will appear. Review meter messages and follow through as per protocol.
20. Remove the test strip.

21. Discard supplies: dispose of the lancet in the sharps container.
22. Clean meter, between each patient using FH approved low level disinfection wipes (i.e.Caviwipes and Oxivir TB wipes). Allow to air dry.
23. Remove gloves and perform hand hygiene.
24. Document results on appropriate Patient Permanent Health Records. Indicate if sample is from arterial or venous source.
    - Document action taken
    - Date, time and employee initials
25. If the same user will be testing additional patients touch “Check Mark” to return to “Main Menu” screen, otherwise turn meter off to log off user ID.

Procedure for Quality Control (QC) Check

Policy requires both levels of controls to be run every 24 hours. Meter will indicate number of hours until next required QC testing is due and cannot be overridden.
Control Solutions. For blood glucose test strips, control solutions have two levels:

- Level 1 (L1): Lo (low values in test results)
- Level 2 (L2): Hi (high values in test results)
- When opening a new QC test solution bottle, write the date on the bottle.
- Discard after three months of use or if manufacturers expiry date has been exceeded

Reagent strips are good until manufacture expiry date.
Meters to be downloaded daily.

1. Collect equipment and prepare supplies. Ensure the QC solution has not been in use for more than three months.
2. Clean meter between patients using wipes. Manufacturer suggests Cavi-wipes or Oxivir Tb. Please allow to dry after wiping. Clean Equipment Tote daily.
3. Ensure meter function and replace batteries as needed.
4. Note that the Laboratory (not Biomed) will provide trouble shooting support to units and replace meters that are not functioning.
5. Turn on the meter.
6. Manually enter user ID (employee ID number). Touch “Check Mark” to confirm. “Main Menu” screen now appears.
7. Select Control Test.
8. Touch Level 1 (Lo) or Level 2 (Hi) to select the level for the test desired.
9. **Scan Barcodes**: QC Solution Level 1 or Level 2, then Test strip vial.
    - Touch the barcode symbol at top right corner of screen.
    - Scan the lot number on the control solution - hold meter so scanner is 4-8 inches in front of barcode.
10. Repeat procedure above to scan test strip vial.
11. Holding the test strip so that the lettering” Accu-chek is facing upwards, insert test strip in top of meter. (Strip must be in meter before dosing). Wait until the “Flashing Drop” symbol appears before applying the control solution.
12. Mix the QC solution to be tested by gently inverting 5 times.
13. Remove cap, **Discard and wipe away first drop and apply second drop to FRONT EDGE of strip (not Top)**.
14. Result will appear within 5 seconds.

IF	THEN
Passed	◦ Touch “Check Mark” to either continue to next level **or** Return to “Main Menu”.
Failed	◦ Touch “Comments” button and select applicable comments. ◦ Touch “Check Mark” to confirm selection. ◦ Touch “Check Mark” again to exit from screen. ◦ Repeat the QC test.
Repeated QC Fails	Refer to **Accu-chek Inform II: Operator’s Manual - Troubleshooting** p. 131-136 Contact Laboratory Point of Care coordinator (M-F 8:00-16:00) or phone Roche Hot line for trouble shooting assistance. 1-877-273-3433

15. Discard supplies.
16. Turn meter off.

17. Return to base unit for recharging of the battery.
18. Download data once every 24 hours by placing the meter at the designated computer terminal.

Please See Extended Text for a guide to:

COMMON ERROR MESSAGES & TROUBLESHOOTING

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