Point of Care Testing Education

Glucose, Whole Blood Accu-Chek Inform II®

northern health

the northern way of caring

Objectives

The successful participant will be able to

1.   Identify the components of the meter.
2.   Perform quality control tests and patient tests.
3.   Identify lowest and highest reportable value.
4.   Identify normal and critical ranges
5.   Identify warning messages and perform appropriate actions.
6.   Identify cleaning frequency of the meter and acceptable cleaning products
7.   State appropriate storage of the meter supplies

northern health
the northern way of caring

Competency Certification

❑ Only individuals who have completed competency training may perform patient testing

   ✓ Complete the education, checklist and exam

   ✓ Perform quality control tests using both HI and LO

   ✓ Perform patient test or simulated patient test
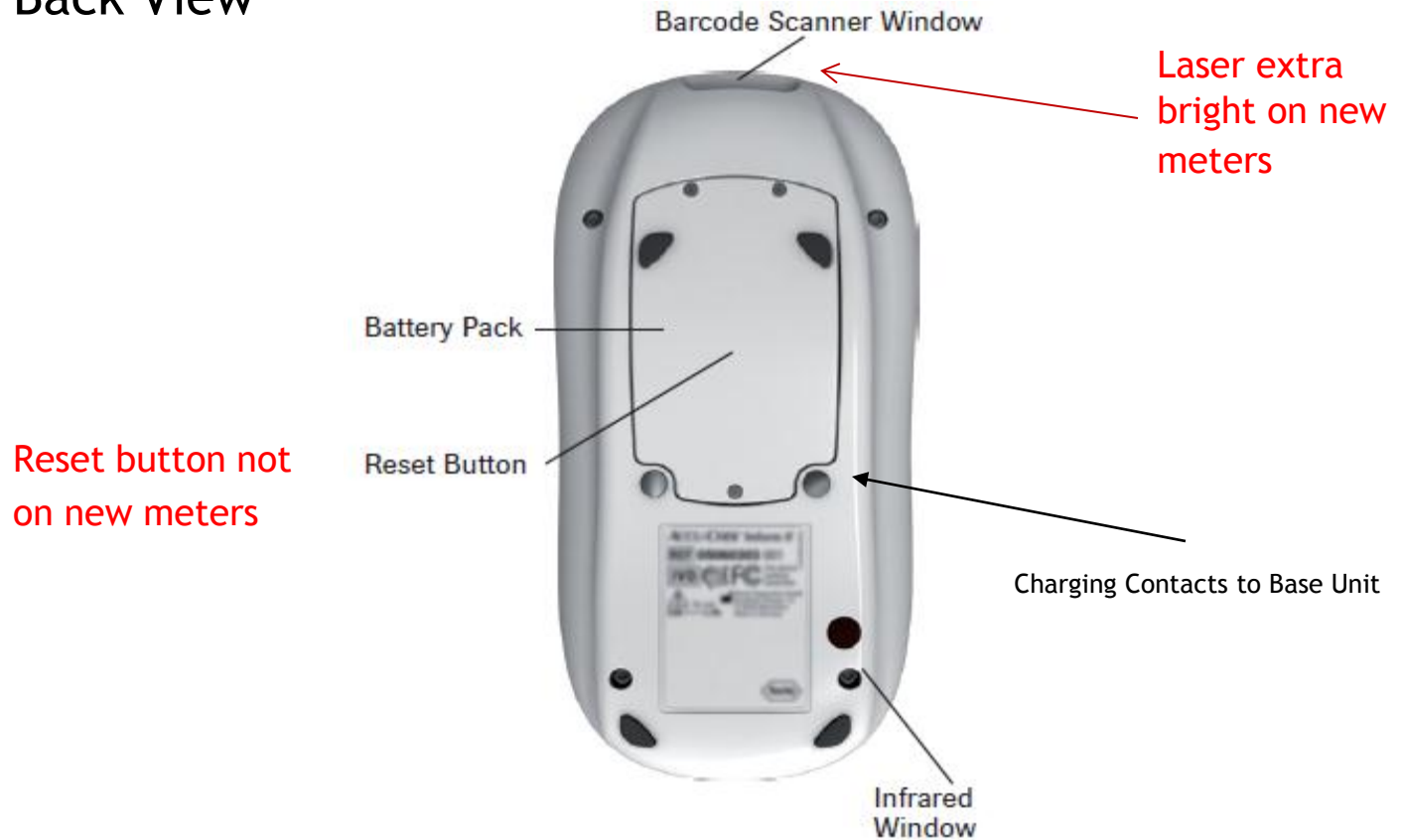
   ✓ Demonstrate cleaning of the machine

❑ Automatically renews every year if criteria met

   ✓ Annual criteria = 4 QC (2LO, 2HI) and 5 patients

   ✓ Your operator ID will not work if your certification expires.

northern health
the northern way of caring

Meter Components

Test Strip Port

Touchscreen

Touchscreen
more responsive on
new meter

ACCU-CHEK Inform II

Main Menu   12:46 pm

Patient Test

Control Test

Review Results

09/18/13

cobas

On/Off Button

Barcode Scanner (Laser)

INFO BAR:
Date, Wi-Fi, meter
communication and
battery life

09/18/13

Meter, Front View

northern health
the northern way of caring

Meter Components

Back View

Barcode Scanner Window

Laser extra bright on new meters

Battery Pack

Reset Button

Reset button not on new meters

Charging Contacts to Base Unit

Infrared Window

northern health
the northern way of caring

Base Unit

Base Unit:

- ❑ Charges battery pack
- ❑ Transfers results from meter to data management system

- Green light

  - ❑ communicating

  - ❑ charging

- Red light

  - ❑ Steady Red Light –

    - ❑ Base Unit connecting to power

    - ❑ then changes to green

  - ❑ Flashing Red Light –

    - ❑ Base Unit NOT connecting

Tote Box

Contains:
- meter
- test strips
- alcohol swabs
- controls
- lancets
- reference guide

Controls

- Level 1 and Level 2 bottle in each box

- Closed Date: good until expiry date on bottle

- Open Date:
    - good for 3 months
    - discard if expiry date occurs before open date

- Write open date on vial or attach open date label

- Store at room temperature

- Discard all reagents when expired

- Wear gloves when using controls, will stain fingers
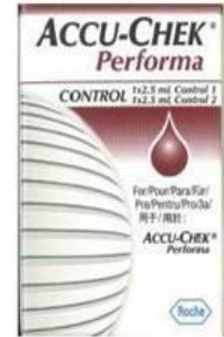
Quality Control Testing

Performed:

- ❑ every 24 hours
- ❑ weekly if no patient testing performed
  (remote nursing sites)
- ❑ when a new box of strips is opened
- ❑ when meter may have been dropped or damaged
- ❑ when lid on the strips has been left open
- ❑ any time there is a question about the accuracy of the meter or the strips
- ❑ when patient results are not consistent with the patient's condition

Glucose Test Strips

- 50 test strips per vial

- Test strips expire on the date displayed on the vial (opened or unopened)

- Recap immediately after use

- No off meter dosing, strip must be in meter when sample is applied

- Up to 10 mins to apply sample

- Code chip in the box is for lab use only; can be discarded

Yellow application area

Insert strip with Accu-Chek writing face up

Gold end inserts into meter

northern health
the northern way of caring

Specimens

Acceptable specimens

- Capillary
- Venous
- Arterial
- Neonatal collected by heel poke (**<u>not</u>** cord blood)

Patients may not be candidates for CBGM glucose due to potentially inaccurate results if any of the following are present:

- Marked edema
- Severe constriction (e.g., hypotension, vasopressors)
- Hct less than 0.10 or greater than 0.65
- Galactose over 0.83 mmol/L
  - elevated Galactose can occur in newborns with inherited galactosemia (1 per 100,000)
- Triglycerides – elevated beyond 20 mmol/L (far beyond average values)
- Ascorbic acid over 0.17mmol/L
  - eg. ICU patients receiving high dose IV ascorbic acid as support

northern health
the northern way of caring

Entering an Operator ID

❖ Barcode entry not used at this time

❖ Enter numeric Operator ID manually using numeric key pad

❖ Operator ID is assigned by Lab

  ❖ Employee:
    ✓ employee # (no zero)
  ❖ Student
    ✓ Year + student #
      14xxxxxxx
      15xxxxxxx
      16xxxxxxx

❖ Backspace to delete a number entered incorrectly.

❖ Clear to delete entire entry

Operator ID 12:48 pm

1 2 3
4 5 6
7 8 9
← 0 A-O
✔

09/18/13

northern health
the northern way of caring

Hands On - Perform a QC Test

BEST PRACTICE: Lay meter flat for all testing.

- ❑ Touch Power button to turn meter on
  - ❑ **"QC Due: Immediately"** will appear at power screen if more than 24 hrs since last QC
- ❑ Select "**CONTROL TEST"** from the menu
- ❑ Touch **"LEVEL 1 (Lo)"** or **"LEVEL 2 (Hi)"** to select correct control

northern health
the northern way of caring
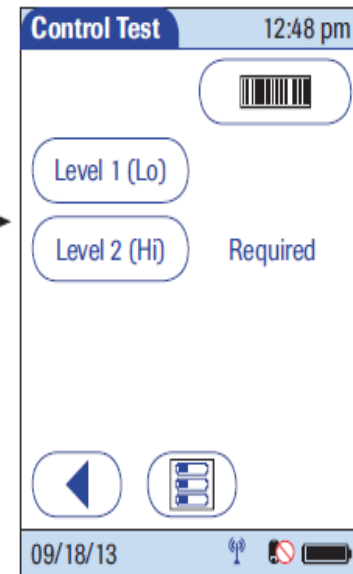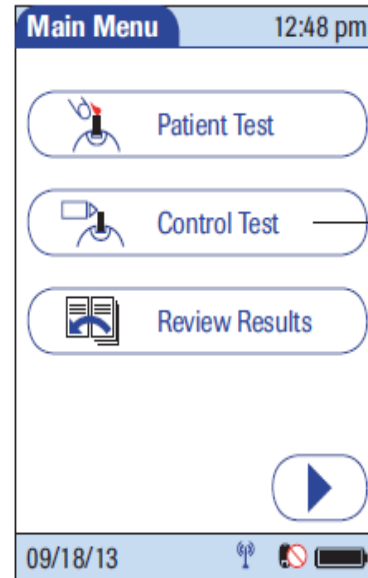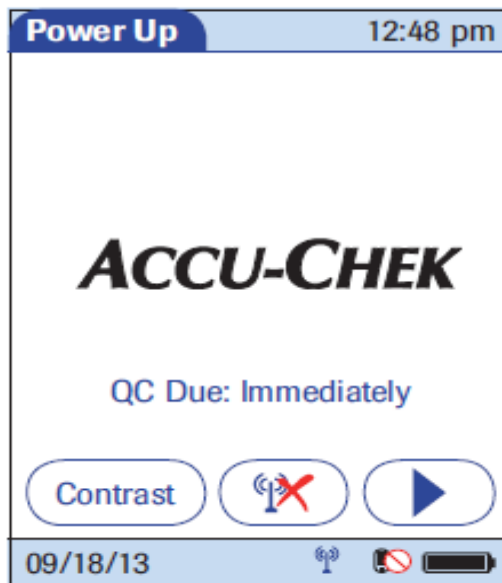
Hands On - Perform a QC Test

❑ Touch barcode symbol at top right of meter screen

❑ Scan barcode on strip vial holding vial 10 – 15 cm in front of scanner.

   ✓ **Warning:** Laser should be kept away from eyes; always lay meter on flat surface.

❑ Touch barcode symbol and scan the **"CONTROL"** bottle barcode

❑ Touch barcode symbol and scan the test **"STRIP"** vial barcode

northern health
the northern way of caring

Hands On - Perform a QC Test

- ❑ Fully insert gold electronic end of test strip into strip port

- ❑ Mix control solution by inverting 5 times.

- ❑ Remove cap and wipe vial with tissue. Dispense 1st drop onto tissue. This removes any liquid in the tip.

- ❑ Apply 2nd drop to front edge of test strip when the meter beeps and displays the drop icon.

northern health
the northern way of caring

Hands On - Perform a QC Test

☐ **"PASS"** or **"FAIL"** displays when testing completed.

☐ If QC **fails**, a prompt will appear to enter a comment.

☐ Touch ⬭💬 to choose a reason for the **FAIL.**

☐ Otherwise, touch ⬭✓ to continue.

☐ Repeat steps for **Level 2 (Hi)**

☐ When both levels pass, the instrument is ready for patient testing.
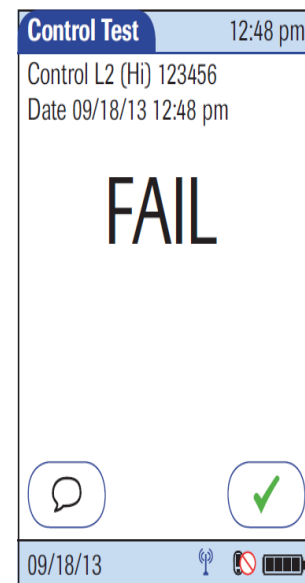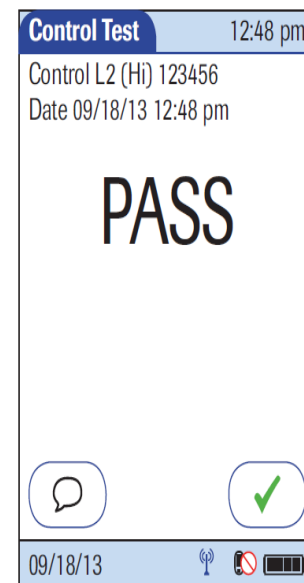
If any QC level repeatedly fails and troubleshooting is not effective, remove the meter from service and notify the Laboratory.

Control Test	12:48 pm
Control L2 (Hi) 123456	
Date 09/18/13 12:48 pm	
PASS	
💬	✓
09/18/13	

Control Test	12:48 pm
Control L2 (Hi) 123456	
Date 09/18/13 12:48 pm	
FAIL	
💬	✓
09/18/13	

northern health
the northern way of caring

Hands On – Perform a Patient Test

BEST PRACTICE: Lay meter flat for all testing.

❑   Select Patient Test

❑   Patient IDs are not entered into meter.
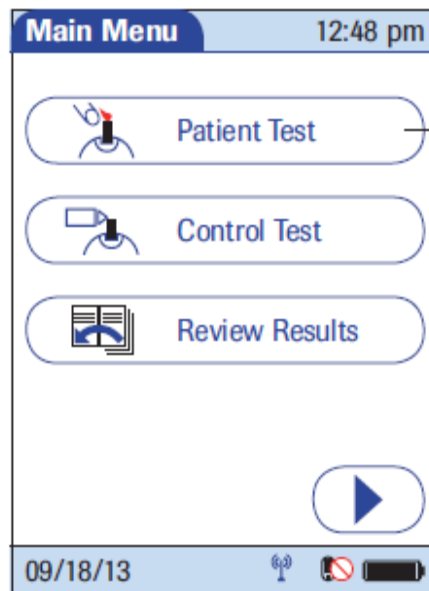

Bypass screen by touching

northern health
the northern way of caring

Hands On - Perform a Patient Test

Confirm the test strip lot #.

❑ Touch barcode symbol and scan the test **"STRIP"** vial barcode

❑ Touch barcode symbol at top right of meter screen

❑ Scan barcode on strip vial holding vial 10 – 15 cm in front of scanner.

    ✓ **Warning:** Laser should be kept away from eyes; always lay meter on flat surface.

❑ Fully insert gold electronic end of test strip into strip port making sure 'Accu-Chek' lettering faces upward

❑ Meter prompts you to apply a blood sample

Patient Test	12:48 pm
Patient 123456789	
Strip Lot 545794	

09/18/13
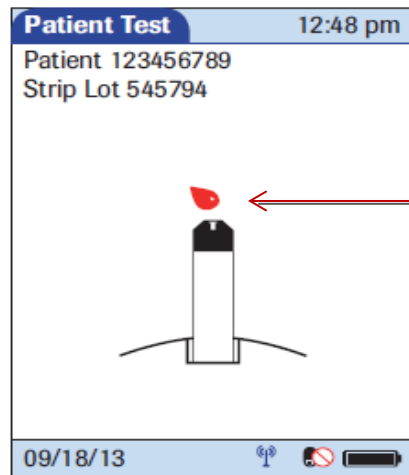
Blood drop visibly red on new meters.

northern health
the northern way of caring

Hands On - Perform a Patient Test

Apply drop of blood

Note: Prior to testing, ask patient to wash hands with soap and water, then let dry. If patient is unable to wash hands, wipe with alcohol, then let dry.

- ❑ Poke finger with lancet and wait for first drop of blood to appear.

- ❑ Wipe away 1st drop. This eliminates any serous fluid in the initial blood drop.

- ❑ Gently massage finger without squeezing to produce a second drop. Squeezing may cause cellular changes and hemolysis.

- ❑ Bring meter to patient finger and apply 2nd drop of blood to the **front edge** of test strip. Meter beeps when sufficient sample detected.
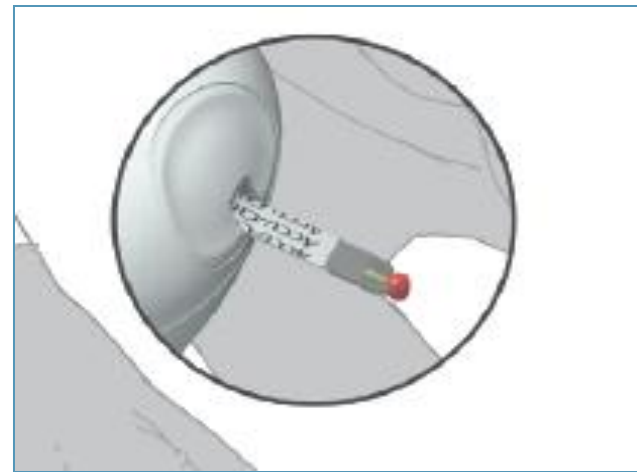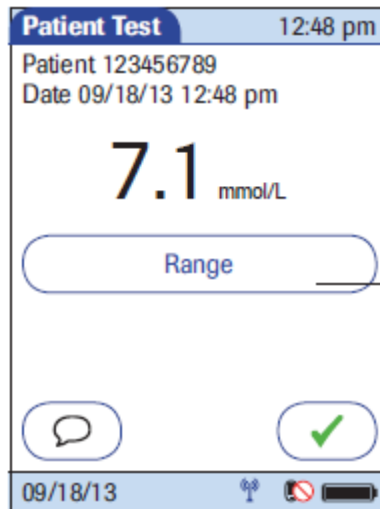
NOTE:

If using simulated patient solutions, mix vial, uncap and wipe tip, dispense 1st drop. Apply 2nd drop to front edge of test strip.

northern health
the northern way of caring

Hands On - Perform a Patient Test

Interpretation of Normal Results

❑ When the test is completed, the result is displayed

❑ A range icon appears underneath. Touch to display numerical range.

    ❖ Normal Range   = normal glucose between 4.0 – 11.0 mmol/L

    ❖ Critical Range   = critical glucose below 2.5 or above 25.0 mmol/L

    ❖ Reportable Range = meter can't read glucose <0.6 or > 33.3 mmol/L

❑ If result is normal, no action or comment is required. Touch ✔ to return to the *Main Menu.*

northern health
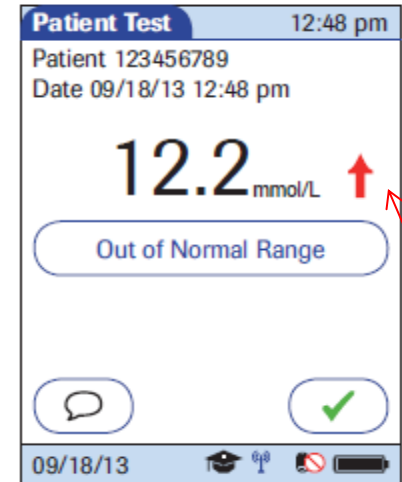*the northern way of caring*

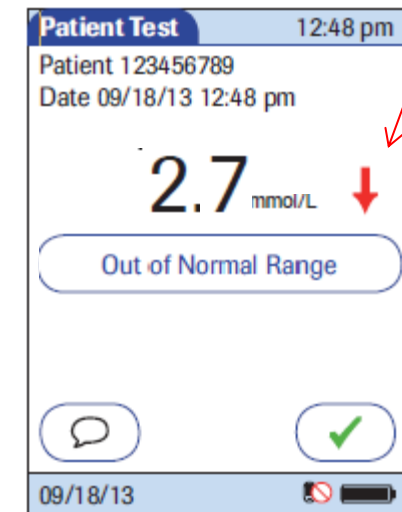# Hands On - Perform a Patient Test

Actions for Abnormal Results

- If result is outside out of the normal range, a red up or down arrow appears beside the value and range icon and comment icon flash.

- Touch 🗨 to add a comment.

- Choose the best comment for the situation, up to 3 comments in total.

- Or choose the free text comment icon 💬 and add free text

- Touch ✓ to continue.

Patient Test   12:48 pm
Patient 123456789
Date 09/18/13 12:48 pm

12.2 mmol/L ↑

Out of Normal Range

🗨   ✓

09/18/13

on new meters

Patient Test   12:48 pm
Patient 123456789
Date 09/18/13 12:48 pm

2.7 mmol/L ↓

Out of Normal Range

🗨   ✓

09/18/13

northern health
the northern way of caring
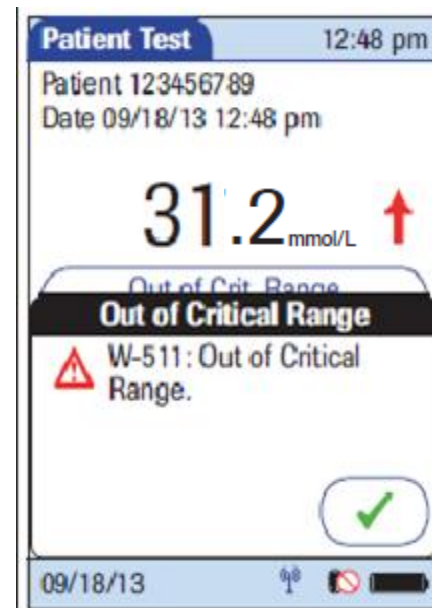
Hands On - Perform a Patient Test

Actions for Critical Results

❑ If result is outside out of the critical range, a red up or down arrow appears beside the value and an "Out of Critical Range" warning window appears.

❑ Touch ✓ to continue.

❑ Range icon and comment icon flash.

❑ Touch 💬 to add a comment and choose appropriate comment.

❑ All critical results must be repeated for confirmation.

❑ If result still beyond Critical Range, order a serum glucose to confirm CBGM glucose.

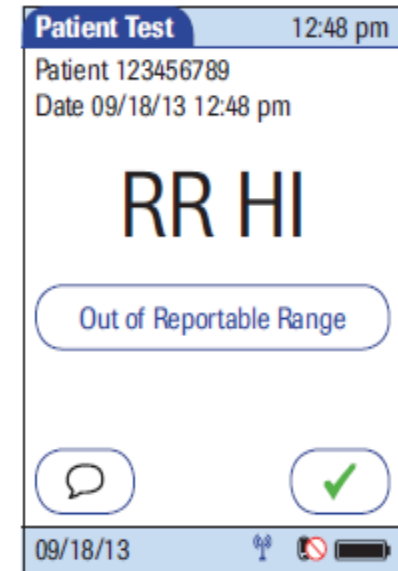❑ Chart result and follow action procedures for critical results

NOTE:

If using simulated patient solutions, bottle # 5 and #6 give critical results

Patient Test   12:48 pm

Patient 123456789
Date 09/18/13 12:48 pm

31.2 mmol/L ↑

Out of Crit. Range

Out of Critical Range

⚠ W-511: Out of Critical Range.

✓

09/18/13

northern health
the northern way of caring

Hands On - Perform a Patient Test

Actions for Results Outside of Reportable Range

- ❑ If result is outside out of reportable range, a warning code appears instead of a value.

- ❑ **RR LO** = meter can't read below 0.6 mmol/L
- ❑ **RR HI** = meter can't read above 33.3 mmol/L

- ❑ "Out of Reportable Range" icon and comment icon flash.

- ❑ Touch ⬭ to add an appropriate comment

- ❑ All **RR HI** and **RR LO** results must be repeated for confirmation.

- ❑ If result still beyond Reportable Range, order a serum glucose to confirm CBGM glucose.

- ❑ Chart result and follow action procedures for critical results.

Patient Test 12:48 pm
Patient 123456789
Date 09/18/13 12:48 pm

RR HI

Out of Reportable Range

09/18/13

northern health
the northern way of caring

Instrument Maintenance

CLEANING:

❑ Meters must be cleaned between each patient

❑ Meters dedicated to a patient must be cleaned at least daily and when visibly soiled

❑ Only acceptable cleaning solutions are allowed for cleaning

❑ Meter must remain wet for contact time as indicated by the wipe's manufacturer

❑ Total 3-5 minutes. Let air dry.

❑ This is the time required to kill bacteria (MRSA/ VRE), viruses (Hep C, HIV) and TB

NAME OF WIPE	CONTACT TIME
CAVIWIPES	3 minutes
SUPER SANICLOTHS	2 minutes
VIROX Products • Accel TB wipes • Percept wipes • Virox 5 wipes	5 minutes
GLUCO-CHLOR	5 minutes

northern health
the northern way of caring

Instrument Maintenance

Best Practice: Lay flat for cleaning

DON'T get moisture in the strip port

DON'T spray any cleaner directly onto the meter

DON'T immerse meter into any cleaning liquid or water

northern health
the northern way of caring

Instrument Maintenance

❑ Disinfect the meter by wiping the entire outer surface of the meter with a fresh wipe

❑ Meter surfaces should stay moist for the entire contact time.

❑ Dry the meter thoroughly with a dry cloth or gauze.

northern health
the northern way of caring

Instrument Maintenance

❑ Cleaning must be documented at least once every 24 hrs.

❑ Good time to document is the same time as QC is being done

❑ At Main Menu, Touch ▶ , Maintenance, Cleaned Meter
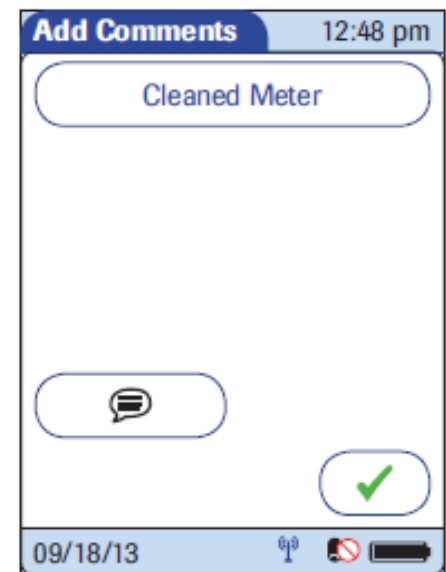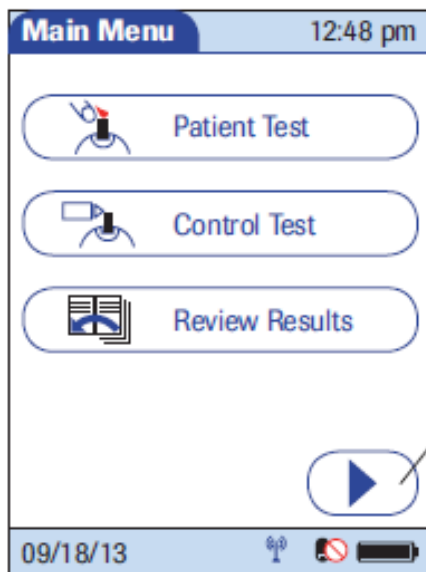
Recap

4.0 – 11.0	Glucose results within the Normal Range are considered normal and require no therapeutic action.
<2.5 or >25.0	Glucose results above or below the Critical Range require immediate action as defined by policy.
<0.6 or > 33.3	Glucose results above or below the Reportable Range are above the highest or below the lowest values the meter can read and require immediate action as defined by policy.

northern health
the northern way of caring

Recap

Age	Normal Range (mmol/L)	Critical Limits (mmol/L)	Reportable Range (mmol/L)
0 days – 16 years	3.3 - 11.0	less than 2.6 greater than 11.0	less than 0.6 greater than 33.3
17 years - Adult	4.0 - 11.0	less than 2.5 greater than 25.0	less than 0.6 greater than 33.3

northern health
the northern way of caring

Ordering Supplies

NH item # 5290063
ACCU CHECK
CONTROLS

1 BOX = 1 bottle of CONTROL 1 and 2

NH item # 5290012
ACCU CHECK
TEST STRIPS
EACH VIAL/50 STRIPS
(USED on BOTH ACCU- CHECK AND PERFORMA METERS)

NH item # 5001701
COMFORT CURVE LINEARITY KIT
(FOR TRAINING ONLY, ORDERED BY LAB OR TRAINER)

northern health
the northern way of caring