Purpose:
The purpose of this guideline is to establish a procedure on using a blood glucose monitor (BGM) by the members of the Charlottesville-Albemarle Rescue Squad.

Device Info:
Bayer Ascensia Contour Blood Glucose Monitoring System (BGMS)

Definitions:
Authorized Personnel – Active BLS and ALS personnel that have been recognized by the Operational Medical Director of Charlottesville-Albemarle Rescue Squad

Glucometer – Used to provide information to manage blood sugar levels.

Lancing device – Used for finger puncture.

Test strip – Used for blood or control testing.

Testing sites- Sites on the human body used to obtain blood samples

Control solution- Synthetic solution used to run a check to make sure the meter and the test strips are working properly.

Policy and Procedures:

Clinical Laboratory Improvement Amendments (CLIA) Waiver

- The Charlottesville-Albemarle Rescue Squad shall be FDA compliant by maintaining a current CLIA waiver.
• The CLIA waiver will be renewed every 2 years.
• There shall be a copy of the CLIA waiver posted in each ambulance/zone car with a BGMS.

**Calibration**
Per Bayer, **not required**.
The Bayer Ascensia Contour Blood Glucose Monitoring System performs calibration automatically.

**Control Test**
Per Bayer, **not required**, but recommended to perform weekly to make sure the BGM and the test strips are working properly.

**Procedure:**
1. A control test should be performed **every Monday** on each meter.
2. Confirm that the control solution and test strips are within date.
3. Slowly agitate the control solution back and forth between your hands.
4. Open the test container and remove a test strip.
5. Holding the round end of the test strip, insert the strip (silver side up) into the test slot until it stops and a beep sounds and the “apply sample” icon appears.
6. Squeeze a small drop of control solution onto a non-porous surface, such as the fingertip of a gloved hand.
7. Touch and hold the test end of the test strip to the drop until the glucometer beeps. The timer will count down 5 seconds and the test result will appear in the display.
   - Compare the results to the range printed on the side of the test strip container. Record the CARS meter number, the date, the control lot number, the control range, and the test results in the CARS BGMS log.
   - If the results are inconsistent or are not within the specific range, make sure the control solution and test strips are within date, the batteries are working, and the test solution is at room temperature. Repeat the control test. If the results are once again out of range, place the unit out of service and notify the on-duty supervisor.
8. Remove the test strip and dispose in an appropriate area.
9. Controls can be ran at other times if there are concerns about the accuracy of the monitor/test strips.
**Blood Glucose Testing**
If the patient has a chief complaint of Altered Level of Consciousness, Seizures, or a Newborn, consider obtaining a blood sample:

**Procedure:**
1. Select the most appropriate site:
   - Fingertips
   - Ear lobe
   - Palm
   - Forearm (last suggested site)
   - Heel stick in infants
2. Cleanse the site with alcohol prep.
3. Remove the test strip.
4. With the BGM off, insert the test strip into the monitor (silver side up) until a beep sounds and the “apply sample” icon appears.
5. Press the lancing device firmly against the puncture site and push button to release. Form a small round drop of blood.
6. Touch and hold the test end of test strip to the drop of blood until the meter beeps. After 5 seconds, the test result will be displayed.
7. Carefully dispose of the test strip and the lancing device in an appropriate area to prevent injuries and contamination.

**Patient Care:**
If the blood glucose results are **80 mg/dl or less**, administer Dextrose (oral and/or IV) or Glucagon. Even if the results are greater than 80 mg/dl and the patient continues to exhibit signs of hypo-glycemia, it should be treated with Dextrose or Glucagon

**EMT-B:**
- If the patient has an altered mental status or has a BGL of 80 mg/dl or less, request an ALS support unit or rapidly transport to the nearest appropriate hospital.
- Follow the 2006 TJEMS Regional Patient Care Guidelines
- Reassess BGL after each therapeutic intervention

**EMT-J, Enhanced, Intermediate/Paramedic:**
- Follow the 2006 TJEMS Regional Patient Care Guidelines
- Reassess BGL after each therapeutic intervention
Specifications:

Measuring Time:
5 seconds

Operating Temperature:
41° to 113° Fahrenheit

Measuring Range:
10 to 600 mg/dl
“HI” Alarm: BGL greater than 600 mg/dl
“LO” Alarm: BGL less than 10 mg/dl

Cleaning the monitor:

• Clean the unit with a non-abrasive hospital grade disinfectant or a 10% bleach solution
• Spray the cleaner onto an applicator (towel), then wipe the unit down.
• DO NOT submerge or saturate with cleaner solution. Doing so will damage the unit

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Original: October 10, 2007
Revised: Jim Miller, RN, CFRN, NREMT-P
## Weekly Control Documentation (3 weeks per sheet)

**Bayer Ascensia Contour Blood Glucose Monitoring System**

<table>
<thead>
<tr>
<th>Date of Test</th>
<th>CARS Device #</th>
<th>BGMS Serial #</th>
<th>Test Strip Lot #</th>
<th>Strip Expiration Date</th>
<th>Normal Control Range</th>
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<tbody>
<tr>
<td>Ex: 10/9/07</td>
<td>Ex: #1</td>
<td>Ex: 3078148</td>
<td>Ex: 7AC3C53</td>
<td>Ex: 01/09</td>
<td>Ex: 100-138</td>
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<table>
<thead>
<tr>
<th>Normal Control Solution Lot #</th>
<th>Control Solution Expiration Date</th>
<th>Test Result</th>
<th>Pass or Fail?</th>
<th>If Fail Repeat.</th>
<th>Repeated Test Result</th>
<th>Fail 2nd time?</th>
<th>YES, Take Out of Service</th>
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<td>Ex: 1508</td>
<td>Ex: 03/09</td>
<td>Ex: 107</td>
<td>Pass</td>
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POST-TEST

1. T/F: The monitor is turned on by inserting a test strip.

2. What day of the week are controls ran?

3. Where are the control results recorded?

4. T/F: Only ALS providers can perform a BGM test.

5. What is the minimal patient blood glucose allowed before treating the patient?

6. Name 3 of the 4 sites in the adult you can obtain a blood sample from.

7. What needs to be done when opening a NEW bottle of strips or control solution?

8. How often does CARS need to re-new the CLIA waiver?

9. What temperature should the strips and control solution be stored at?

10. T/F: It is OK to squeeze hard or “milk” a fingertip in order to obtain a drop of blood.