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| **Owner Title / Approval:** | John R Samuel, MT(ASCP) Signature on file |
| **Administrative Director Approval:** | **Not required** |
| **Medical Director Approval:** | **I have reviewed this procedure and approve it for use.** |
| Cindy Sturtz, MD Signature on file |

# PURPOSE:

This document establishes a procedure for performing ionized calcium testing using the Chem 8+ cartridge on the Abbott iSTAT handheld analyzer.

**REAGENTS/SUPPLIES:**

* Abbott iSTAT handheld analyzer
* Abbott iSTAT Chem8+ Cartridge [Cat#09P31-25]
  + Store cartridges at 2-80C until expiration date listed on packaging.
  + Allow cartridge[s] to warm at room temperature in the sealed package for 5-10 minutes prior to use.
  + Once warmed to room temperature, sealed cartridges are stable for 14 days at room temperature. Date all room temp cartridges with +14-day expiration date.
  + Once warmed to room temperature, DO NOT return cartridge[s] to refrigeration.
* Disposable micropipettes

**SPECIMEN/SPECIMEN COLLECTION:**

* Whole blood sample collected in Lithium Heparin.
* Tube must be filled to the fill volume stated on the tube label [ie “3.0 mL”]
* If not testing within 30 minutes, refrigerate at 2-80 C until testing can be performed.
* Allow refrigerated samples to equilibrate to room temperature prior to testing.
* Testing should be performed as soon as possible after collection. Samples greater than 24 hours old will be rejected.
* Sample must remain closed until testing is performed.

**QUALITY CONTROL:**

* i-STAT TriControls, Level 1 [Cat#05P71-01]
* i-STAT TriControls, Level 3 [Cat#05P73-01]
* Routine quality control is performed **monthly** – the analyzer will inform user when QC is due.
* Additionally, each shipment of reagent cartridges - whether a new lot or not - will be QC’d same day as receipt to ensure that cartridges have not been compromised in shipping.

**PROCEDURE: Patient Testing**

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| Step | Action |
| 1 | If refrigerated, remove cartridge and allow to stand at room temperature for at least 5 minutes in the sealed envelope before using. |
| 2 | Turn the i-STAT handheld **On**. |
| 3 | Press **2** for i-STAT cartridge. |
| 4 | At the prompt “Scan or Enter Operator ID,” scan your Employee ID number barcode.   * You may manually enter your employee ID number using the keypad and pressing the Enter key. You will be prompted to manually reenter your employee ID for confirmation. |
| 5 | At the prompt “Scan or Enter Patient ID,” scan the patient tube label barcode. |
| 6 | The analyzer screen will display the Patient ID number with the comment “ID Not In Valid ID List.” Select option 2 – Continue to proceed. |
| 7 | At the screen prompt “Scan Catridge Lot Number,” scan the barcode number on the cartridge envelope. |
| 8 | Remove cartridge from the cartridge envelope. |
| 9 | Ensure that the patient sample is well mixed. |
| 10 | Using a disposable micropipette, transfer patient sample to the sample well on the test cartridge. Observe as the sample migrates up the channel from the sample well. |
| 11 | Close the cartridge. |
| 12 | Insert the cartridge into the analyzer. |
| 13 | Results are available in 3 to 4 minutes. Do not move analyzer during testing. |

**RESULT REPORTING:**

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| Step | Action |
| 1 | Upon completion, test results are displayed on the the analyzer screen.   * If the analyzer has turned off, press the power key and select option 1 “Last Results” to view test results. * Use the arrow keys to navigate through test results if required/desired. |
| 2 | Referring to the analyzer display, manually enter the **iCa** [ionized calcium] result into Meditech. |
| 3 | Document the patient information and result on the paper “Manual Chemistry Result Log.” |

**REFERENCE RANGE:**

Normal range: 1.12 – 1.32 mmol/L

Critical value: < 0.82 mmol/L or >1.55 mmol/L

**REFERENCES:**

* Ionized Calcium/ICA, Package insert revision 7/15/16. Art# 714179-00P, Abbott Point of Care.

**Document History**

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| Prepared by: John R Samuel, MT(ASCP) |
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| **Medical Director or Designee Approval:** | **I have reviewed this document and approve it for use**  **\_\_\_** pending approval of Medical Director of record.  **\_\_\_** change in Medical Director of record.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_  Signature on file |