I-STAT Training - Quick Tips

Point-Of-Care-Testing Department
Clinical Laboratories
Stanford Health Care
Stanford Children’s Health
Patient/Operator ID entry

Patient ID entry:
• Joint Commission requirement for 2 forms Patient Identification.
• Scan Patient armband for CSN = 9-digit in LPCH and 12-digit in SHC
• Enter twice if manually enter in.

Operator/User ID:
– Trained personnel will be issued a bar-coded ID label for scanning with the ISTAT meter.
– It is the 5-digit or 6-digit of the ID badge number.
I-STAT cartridge storage, handling and supplies

- Cartridges are stored in refrigeration at 2 - 8º C (35 - 46º F). Use within manufacturer expiration date listed on the box. It takes 5 minutes to warm up one packet and one hour to warm up one whole box of cartridges.

- Different cartridges have different expiration date at room temp storage. Write room temp expiration date on individual pouch or box if pouches are kept inside the box.

- Handle cartridges by the edges only. Burst or damaged cartridge will not give results.

Your unit clerk has to go to the clinical lab for cartridge supplies - call ahead to 650-736-2127 Blood Gas Lab.
Blood sample information

- Non-Heparinized 1CC TB syringe. Blood has to be tested within 3 minutes.

- Heparinized syringe. Use within 10 minutes with blood gently mixed before sampling.

- For coagulation tests, i.e. ACT, test the sample immediately.

- Do not use blood if it is clotted

- Do not draw air bubbles into the syringe – blood gas values are affected.

- Perform test promptly

All of the above factors affect blood gas results.
I-STAT testing process

- It takes 2 minutes to see results. Coagulation testing take up to 10 minutes to complete.

- Do not remove cartridge during testing process (Cartridge Locked) – instrument will be damaged if cartridge is forcibly removed

- Instrument should maintain at a horizontal level during testing.

- Test process and error messages are shown on the bottom of the screen.

- Errors with ***, < or > will allow any results to transmit to Epic.

- Clean meter with Sani-Cloth wipe after each patient use per Infection Control protocol
Interferences for I-STAT testing

- Syringes with >10 units of Heparin falsely lowers ionized calcium results.

- Abnormally low or high Total Proteins in patient can falsely decrease or increase the Hematocrit value. Hct values are used for trending only, not as an indicator for transfusion.

- Do not remove cartridge during testing process (Cartridge Locked) – instrument will be damaged if cartridge is forcibly removed.
When testing needs to be repeated

- Conditions that a testing needs to be repeated with a fresh blood sample:
  - Sample is clotted
  - Sample is contaminated with IV fluids
  - Abnormal results that do not match with patient treatment protocol. Alert values must be documented and reported to the attending physicians to ensure proper patient treatment.
  - Results with ***, >, < or <> - if persistent do not use ISTAT for testing. Send sample to the Lab. These errors are transmitted to EPIC system.

If tests are repeated within 5 minutes, only the second set of results are allowed to stay as the permanent record.

Erroneous results can be deleted by pressing “8” in Field 2 under Sample Type screen or call POCT at 4-8934.

Do not use i-STAT for patient testing if repeated ***, < or > are shown. Send blood samples to the Clinical Lab for analysis.
Quality Controls (QC) for I-STAT:
Internal, external and liquid controls

• **Internal Simulator (QC):**
  – It is programmed to run automatically every 8 hours of instrument use.

• **External Simulator (QC):**
  – Use the metallic QC when prompted by the instrument. Do not touch the metallic sensors.
  – Use this External QC to test meter is it is dropped to ensure instrument integrity. Patient testing is disable if meter is broken. Call POCT # 724-8934 to retrieve broken meter.

• **Liquid Controls:**
  – Liquid QC is performed in the units monthly
  – Liquid QC is also required on each new shipment/Lot.
Training and competency

- Each I-STAT user must have **Initial training** and competency.

- A **6-month competency** and then an **Annual competency** are required.

- **Hands-on demonstration** is required as part of the competencies.
Training and competency

• When the competency certification expires within 30-day timeframe, a message appears on the display screen to alert you the expiration date.

• Users contact POCT 4-8934 Option 4 to complete the required test before the due date.
Training and competency

- User will be locked out for testing if competencies are not kept up to date.

- Re-training is required once the user ID expired in the ISTAT database.

- Sharing operator ID is not permissible as it may become a patient safety issue.
Troubleshooting the I-STAT instrument

• Avoid test errors to reduce cost and to improve efficiency with patient care.
• I-STAT instrument performs quality checks for each testing.
• Examples of error messages and corrective actions:
  – “Low Batteries or Dead Batteries” – Replace the 9 volt batteries
  – “External Simulator Run Required” – Insert the metallic EQC to run quality checks
  – “Analyzer Error” – Place the instrument in the docking station to reset software profile. Run the electronic Simulator afterwards.
  – “Cartridge Error” – Try another cartridge, previous cartridge may be mishandled
  – “Invalid or Expired CLEW” – Call POCT department @ 650-724-8934 to update I-STAT software
Troubleshooting the I-STAT - Continue

- “Unable to Position Sample” – Snap closure has not been closed tightly or sample has clotted
- “Cartridge Pre-burst” – Calibration pouch of the I-STAT cartridge has been damaged, use another cartridge
- “Sample underfilled or overfilled” – Blood should be sampled up to the blue arrow point on the cartridge, use another cartridge

- Notify POCT department 650-724-8934 Option 4 for I-STAT problems and replacements.
- Notify SHC IT 3-3333 or LPCH IT 8-7500 if the results are not transmitted to EPIC.
- Do not take ISTAT to Material Management or Clinical Engineering.
Monthly Compliance Report – Joint Commission Requirements

Monthly Compliance checks:

✔ User training/competency/certification status.
✔ Invalid patient ID when performing the i-STAT test.
✔ Meter(s) are cleaned per Infection Control protocol.
✔ Room and refrigerator temperatures are monitored and recorded daily on chart/log.
✔ ISTAT cartridges are properly dated when stored at room temperature.
✔ ISTAT cartridges are properly disposed when expired with room temp storage or manufacturer expiration date.
✔ The acceptable monthly compliance score is >90%. Reports are sent to unit medical director.