Key Trainer Handbook

Abbott i-STAT 1

Contents

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Introduction to Point of Care

This handbook has been compiled by the Point of Care Testing Department (PoCT) for LTHT to help you, the healthcare professional, achieve consistently reliable and accurate results. It also hopes to explain the importance of good practice when producing laboratory results outside of the Pathology environment.

The different sections of the booklet cover aspects of working with the Abbott i-STAT 1 including routine use and quality control.

On completing this training all users should be able to analyse samples obtaining an accurate result whilst minimising risk to themselves and patients.

Ensuring Quality

Leeds Teaching Hospitals Trust Pathology service is required to meet the nationally agreed standards set by UKAS, the national accreditation body recognised by the UK Government. A standard is a document that provides requirements, specifications, guidelines or characteristics that can be used consistently to ensure that materials, products, processes and services are fit for their purpose. Pathology is currently using ISO standards to assess their performance. Following the Clinical Area Standard Operating Procedure (SOP) and using the training material provided is essential to us meeting these standards.

The use of analysers by untrained staff, without adequate management supervision of the equipment and without the use of quality control procedures, can lead to misleading results and adversely affecting the treatment of patients.

Definitions

Calibration - A set of known standards are run at different concentrations and used to assess and adjust the accuracy of the analyser.

Internal Quality Control (IQC) - The role of IQC is to monitor the day-to-day precision and accuracy of a given assay by comparing it to known values. Best practice dictates both a high and low are run, ensuring accuracy at both ends of the result range.

External Quality Assurance (EQA) - The role of EQA is to provide a broader comparison. Enrolling in an EQA scheme allows one analyser's results to be compared to many others, both of similar and different methods. It is also performed by a member of staff and so can be used to monitor user proficiency.

Key Trainer Role

The role of the Key Trainer is to cascade training from the PoCT department to all members of ward staff who are required to use the Abbott i-STAT 1. They are also responsible for keeping a copy of training documentation for all trained members of staff.

Their main duties consist of the following:

- Ensuring members of staff who wish to undergo training read the Form 1: Knowledge and Assessment and complete the Form 2: Competency Questions.

- Witness the member of staff run a standard test and then complete the Competency Assessment Form 3.

- Maintain ward records, this involves retaining a copy of Competency Assessment Form 3 as part of the Key Trainer records on the ward. These can be used as proof of training and also as a reminder for 2 yearly retraining.

- Complete and return the Registry Form to POCT department so that passwords can be updated and access granted. This also allows the POCT to update MELVIS.

- Key Trainers will be expected to attend training session updates and relay any changes in practice.

Training Documents

Form 1: Knowledge and Skills. To be read by the member of staff being assessed to ensure knowledge and understanding of the standards required. This form should be retained by the Trainee for future reference.

Form 2: Competency Questions. Contains questions which are based on the information in Form 1. This form should be retained by the member of staff as a reminder for reassessment.

Form 3: Competency Assessment. Is to be filled in by the Key Trainer and member of staff when the assessment has been undertaken and is to ensure standards are being met. This form is held as a paper copy by the Key Trainer. It may form part of the Personal Development Record (PDR).

Registry Form. Please complete thoroughly and clearly, providing all contact details requested to allow PoCT staff to update training records. Please return to the PoCT department by email as soon as training has been completed. Leedsth-tr.pointofcare@nhs.net

Training for the Abbott i-STAT 1.

Objective

This competency covers the blood gas analysis of patients using the Abbott i-STAT 1 in a Point of Care (PoCT) setting.

Assessment

This assessment is relevant to anyone required to carry out capillary blood gas and INR analysis on the Abbott i-STAT 1. This includes having an understanding of how to collect an appropriate sample, how to use the analyser to perform a patient test, all relevant health and safety issues, who to contact for machine failure and the importance of password protection.

Other Helpful Documents

Found on the Pathology Website - http://www.pathology.leedsth.nhs.uk/Pathology/

This document is for use within the Leeds Teaching Hospitals NHS Trust ONLY. It should not be printed, but accessed electronically so that only the most up to date instructions are available.

PLEASE NOTE: The sharing of passwords is against Trust policy, both the Data protection policy and the use of computers policy. Every member of staff is required to undertake mandatory Information Governance (IG) training and should be aware of this. Sharing passwords breaks principle 7 of the Data Protection Act (1998), which could be interpreted as unauthorised processing. This is unlawful under section 55 of the Act. It is also an offence under the Computer Misuse Act (1990).

Form 1– Knowledge & Assessment Worksheet - Abbott i-STAT 1.

Competency	Knowledge and Understanding
Medico-Legal	• Passwords (Trust ID badge barcodes**) MUST NEVER** be shared to prevent device misuse and to protect both patients and staff. Passwords are unique to every user. • It is against Information Governance and Trust IT Policies to share passwords. It is a disciplinary offence. • **T**raining will last for two years. All users must have an update every two years. Your training expiry date can be found on the MELVIS database. • Patient ID must be checked before bleeding the patient using at least 3 points of ID e.g. Name, DOB and address and the sample labelled with a barcoded sticker where appropriate. • Acceptable forms of Patient ID are: 1. The NHS, PAS or A&E number. 2. If the above are not known, the patient's FULL name. 3. For unknown patients, please enter something as specific as possible to the patient (e.g. unknownmalecrash) and contact POCT with the patient ID as soon as you are aware of it.
Calibration	**The Electronic Simulator test MUST be analysed every 24 hours to ensure analyser is working correctly.** 1. Turn on the analyser 2. At the Test Menu Screen press the MENU button then press *3 – Quality Tests* then press *4 – Simulator*. 3. Scan the barcode on the user's staff ID badge by pressing the SCAN button. 4. Scan the Simulator ID using the barcode on the side of the Simulator box using the SCAN button. 5. Enter the Simulator into the sample port on the bottom of the analyser. 6. The analyser will lock the Simulator in place until testing is complete. **DO NOT try and remove the Simulator until the result has been shown on screen.** 7. If the simulator test fails, please repeat it. If it fails again, contact Point of Care.
Quality Control (QC)	**Both Level 1 and Level 3 QC solutions must be analysed with each new lot number of cartridges.** 1. Ensure that you have the correct QC Value Assignment Sheets for the CLEWS version of the analyser, and cartridges that you are using. If in doubt, please consult the Abbott Point of Care website: https://www.abbottpointofcare.com/en-int/support/value-assignment-sheets. 2. Remove the test cartridges from the fridge and allow to warm up to room temperature for approx. 5 minutes. 3. Switch on the analyser by pressing the POWER button. 4. Press the MENU button, select number *3 - Quality Tests* then number *1 - Controls*. 5. Scan your Operator ID by pressing and holding the SCAN button. The scanner is at the top of the analyser. 6. Scan the lot number of the QC solution and then the lot number of the cartridge that you are using. 7. The machine will then ask you to insert the cartridge. Open up the cartridge packet, and place the cartridge on a flat surface. **Only hold the cartridge by the bottom or the sides, NEVER by the middle as this may prematurely release the reagents.** 8. Shake the QC vial for 15 seconds to thoroughly mix the sample. 9. Ensure you have a syringe with a needle ready. Break open the QC vial and immediately fill the syringe with the QC solution. Ensure there are no bubbles in the sample. 10. Carefully fill the cartridge well with QC solution until it reaches the marker point. 11. Close the sample gate, taking care to only handle the cartridge at the edges. Place the cartridge into the analyser with the label side facing upwards. 12. Once the cartridge is in, **DO NOT** attempt to remove it until prompted to do so by the analyser. 13. When the machine displays the results, the cartridge is safe to remove and discard. Compare the results to the Value Assignment sheet. If any results are out of range, repeat the QC test with a fresh vial of QC. If the test fails again, please contact Point of Care. **EQA** Samples are sent out monthly. Please analyse it as if it was a patient sample

	immediately upon receipt and return the results to Point of Care Testing via e-mail (leedsth-tr.pointofcare@nhs.net).
Pre Analytical Hazards	• Dilutional Errors- samples taken from drip arms can be diluted by the infusion itself. Clear all lines thoroughly and be aware of infusion sites. • Delayed analysis - all parameters are affected; test within 10 minutes of collection.
Sample Preparation	• Syringes and capillaries used for blood gas analysis MUST be heparinised to prevent clotting and to prevent erroneous results from being obtained. • Samples for blood gases MUST be free from air contamination. Expel any excess air from the syringe and use the cap to seal the sample until ready for testing. Capillaries must not have bubbles in the sample. • Samples for blood gases taken into a syringe/capillary must be thoroughly mixed. Mix the sample by rolling the syringe between the palms of your hands. Capillary samples may be mixed by carefully rolling between your fingers.
Patient Sample Analysis	1. Remove the test cartridges from the fridge and allow to warm up to room temperature for approx. 5 minutes. 2. Switch on the analyser by pressing the power button. 3. At the Test Menu Screen press 2 – i-STAT Cartridge. 4. Scan the barcode on the user's staff ID badge by pressing and holding the SCAN button. 5. Scan/enter the patient ID. 6. Scan the Cartridge LOT number using the barcode on the outside of the cartridge packet. 7. Taking care to only handle the cartridge at the edges, place the cartridge on a flat surface. 8. Carefully fill the cartridge well with the sample until it reaches the marker point. 9. **NOTE: Under or overfilling the sample path may produce erroneous results.** 10. Close the sample gate and taking care to only handle the cartridge at the edges place the cartridge into the analyser with the label side facing upwards. 11. The analyser will lock the cartridge in place until testing is complete. **Do not** try and remove the cartridge until the results have been shown on screen.
Result Reporting	1. Results should be reported according to ward/departmental procedures ensuring correct patient identification.
Result Recall	1. Press '*Menu*' 2. Press 2 - Data review, then press 1 - Patient 3. Scan or enter patient ID and the results will be shown on screen
Health and Safety	1. Conform to Trust Infection Control policies at all times. 2. Gloves should be worn when handling blood samples. 3. Spillages must be dealt with in line with Departmental H&S policies.
Troubleshooting	1. Errors- if the analyser displays an error. Contact Point of Care on ext. 22338. *2.* Further information, including Standard Operating Procedures can be found on the Leeds TH Pathology website. *3.* When reporting clinical incidents on DATIX, tick the tick box for incidents involving Trust equipment and select 'in-vitro Medical Devices' from the drop down list.

Name of member of staff (Please Print)	Name of assessor (Please Print)
Member of staff signature:	Assessor Signature:
Date of Training:	Date Recertification Due:

Form 2 Questions - Abbott i-STAT 1

1. Before analysis of a patient sample it must be thoroughly mixed. How is this done and why is this important?

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2. If the sample cannot be analysed immediately, how many minutes delay is acceptable?

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3. Why is important to have NO air bubbles in the sample?

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4. According to Trust Policy, who can use the i-STAT 1? How often do you need to be trained?

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5. Who is responsible for ensuring you are trained?

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6. What mandatory patient ID is required?

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7. Who do you contact if the machine is not working and cannot be resolved by your link nurse/advanced user?

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8. How do you contact POCT

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9. What is the correct way to hold the i-STAT cartridge?

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Form 2 Questions - Answers for Key Trainers

1. Before analysis of a patient sample it must be thoroughly mixed. How is this done and why is this important?

   Roll and invert the sample. This is important to prevent clots forming and ensures accurate results

2. If the sample cannot be analysed immediately, how many minutes delay is acceptable?

   10 minutes

3. Why is important to have NO air bubbles in the sample?

   One continuous stream of blood is required. This is to allow an electrical current to be formed and all sensors to be covered.

4. According to Trust Policy, who can use the i-STAT 1? How often do you need to be trained?

   All staff who have been trained and competency assessed are will be activated for two years.

5. Who is responsible for ensuring you are trained?
   Personal responsibility

6. What mandatory patient ID is required?

   The NHS, PAS or A&E number

7. Who do you contact if the machine is not working and cannot be resolved by your link nurse/advanced user?
   Contact the Point of Care Department

8. How do you contact POCT

   Contact details are found in the Key Trainer handbook email - leedsth-tr.pointofcare@nhs.net Ext 22338

9. What is the correct way to hold the i-STAT cartridge?

   By the sides of the cartridge. If the cartridge is held by the middle, the reagents may be released prematurely

FORM 3 Observational Assessment; Performing a blood gas measurement on the Abbott i-STAT 1
TO BE RETAINED BY THE KEY TRAINER

Core competency	Please record whether or not the member of staff completed the task.
1 Has the member of staff read the knowledge and understanding worksheet (Form 1)?	
2 Has the member of staff completed the questions?	
3 Did the member of staff correctly use the relevant ID • Did the member of staff scan the correct patient bar code as ID? • Did the member of staff check the patients ID on screen matched that of the patient who the sample came from? • ***Did the member of staff enter their own bar code password?***	
4 Sampling-can be done with either patient or QC sample • Was the sample applied to the cartridge correctly? • Did the member of staff handle the cartridge correctly?	
5 i-STAT analyser use • (For QC testing) Did the member of staff check the Value Assignment Sheet was correct for the cartridge lot number being used and the CLEWS version? • Does the member of staff know how to perform the simulator test? • Does the member of staff know how to contact Point of Care in the event of machine breakdown?	
6 Did the member of staff demonstrate effective health and safety measures? • Were gloves worn? • Was the used syringe/capillary/lancet disposed of in a clinical waste or sharps bin? • Was the machine left clean for the next user?	
7 Result Reporting • Were the results reported according to ward/departmental procedures ensuring the correct patient ID? • Were the results acted on accordingly?	

Staff Member
I the undersigned declare that I have read Form 1 and completed the questions and the practical assessment
Assessor
I the undersigned declare that the staff member has completed the competency tests to a satisfactory standard.

Name of member of staff (Please Print)	Name of assessor (Please Print)
Operator Number:	Date of assessment
Department:	Signature:
Signature:	Staff member's E-mail:

Abbott i-STAT 1 Training Register

Hospital and Ward No: | **Date of Training:**

Name of Trainer:

Forename	Surname	Analyser Training	Site(s) access required for	Operator ID (7/8 DIGIT NO.)	E-mail address	Key Trainer
e.g. JOE	*BLOGGS*	*Abbott i-STAT 1*	*CROSS SITE*	*1234567*	*Joe.bloggs1234@nhs.net*	