Key Trainer Handbook

HemoCue Haemoglobin 201 DM Analyser

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 HemoCue 201 DM 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 HemoCue 201 DM analyser. 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.
Forms 1 and 2 are available on the Pathology website - http://www.pathology.leedsth.nhs.uk

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 *(for replacement copy Tel 22338).* 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 HemoCue 201 DM analyser.

Objective

This competency covers the analysis of capillary samples for haemoglobin using the HemoCue 201 DM analyser in a Point of Care (PoCT) setting.

Assessment

This assessment is relevant to anyone required to carry out the analysis of capillary samples for haemoglobin using the HemoCue 201 DM analyser. 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/

- Clinical Area SOP - Use of the HemoCue Heamoglobin 201 DM Analyser
- HemoCue Haemoglobin 201 DM Analyser - Operator Manual

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 - HemoCue201 DM analyser

Topics covered	Training detail
Introduction	• How to contact POCT
Medico-Legal	**No password sharing & Correct patient ID** • Acceptable forms of patient ID: PAS, NHS or A&E number • 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 • Legal requirement & Trust policy • Creates an Information Governance audit trail • Enables test results to be recalled for specific users and patients • Protects staff and patients from device misuse • Training updates are required every **TWO years**
Analyser overview (Hardware)	• Touch screen and power button • Cuvette holder tray • Barcode scanner • Dock • Cuvettes - 3 month expiry from opening (should be noted on the side of pot) • QC - 1 month expiry from opening (should be noted on side of the bottle) **KEEP REFRIGERATED.**
Analyser overview (Screen)	• Turn on analyser, pull out cuvette holder when prompted • "Self test" is performed (checks measuring lens and light intensity) • Log in by scanning ID badge to enter main menu • Options: **-** Patient test **-** QC test **-** STAT test **-** Stored data **-** Settings
Calibration	• Not required - The analysers are calibrated at the factory against the ICSH reference method and needs no further calibration.
Quality Control (QC)	• 24 hour lockout • 2 levels (Level 1 - HemoTrol Low, Level 2 - HemoTrol Normal) to analyse to unlock for patient analysis. • **New QC should be dated upon opening and discarded after 30 days.** • QC should be kept in the fridge prior to opening until expiry date. Must be properly recapped. • QC must be warmed in hand and gently inverted to ensure thorough mixing prior to testing. • Importance of QC - to ensure the analyser is within limits / to check the users technique **Running a QC sample** • Turn on the analyser • Pull out the cuvette holder when prompted (initiates optical "Self Test") • Log into analyser by scanning barcode on Trust ID badge • Select **QC** from the main menu • Select L**evel 1** (HemoTrol Low) • Place a drop of level 1 QC solution onto a non porous surface (a nitrile glove is ideal) and carefully fill the cuvette from the tip (point of cuvette goes into the QC solution)**.** Capillary action will draw the QC into the cuvette, **ensure that the testing circle has been filled** • Blot away any excess solution from both the sides of the cuvette to prevent excess solution getting into the analyser • Place the cuvette into the cuvette holder and close the tray. • Scan the lot number of the cuvettes when prompted (on the side of the pot) • Scan the lot number of the QC solution when prompted (found on the box) • Once passed press **OK** • Next repeat this process to run the **Level 2** QC (HemoTrol Normal) **Should a QC test fail** • Ensure QC material has been adequately mixed**.** • Check expiry dates of QC solution and cuvettes • Try a different lot number of QC/cuvettes if available. If the QC keeps failing then contact Point of Care Testing

Pre-Analytical	**Note:** Capillary, venous and arterial samples can be used on the HemoCue. The ear lobe is **NOT** to be used as results are not accurate (poor perfusion). If the patient is in peripheral shutdown then a finger prick is not appropriate as erroneous results may be recorded. In this case an arterial/venous sample should be obtained. • Ensure meter has been QC unlocked prior to analysis • Wash the test site before analysis in warm water and ensure site is dry prior to finger prick. • Applying gentle pressure, massage patients hand from palm/base of finger up to the tip of the finger you are going to puncture (middle, ring or little finger)
Sample Analysis	1. Log into analyser 2. Pull out cuvette holder when prompted 3. Select **Patient Test** from the main menu 4. Scan pot of cuvettes when prompted 5. Scan patient ID barcode (PAS/NHS number) when prompted, manual entry also possible 6. Verify all the information entered is correct 7. Pierce test site 8. Wipe away the first two drops of blood, the **THIRD** drop should then be used 9. Fill the cuvette direct from the test site (minimum sample volume 10µl). **It is VITAL that the cuvette is properly filled with sample, as erroneous results may be produced if not.** 10. Capillary action will draw blood into the cuvette 11. Wipe off any excess blood from the sides of the cuvette 12. Place the cuvette into the cuvette holder and close the tray. 13. Results will be displayed within 15-60 seconds **EQA** • 2 samples are sent out to each department bimonthly. Any trained user can analyser the samples. Samples are to be run as if they were a patient sample, using the barcodes provided for patient ID.
Results	• Analytical range of the analyser 0-256 g/L • For any results outside the analytical range, or that do not fit with the patient's clinical picture, send a sample to the lab for confirmation (venous whole blood in a EDTA blood tube) with requesting form
Recall results	• Log in and select **stored data** from the main menu • Then select **review** and then **PAT/STAT** from the next menu • Previous results will be displayed in chronological order
Error messages / troubleshooting	• If an **E02** error occurs during the "self test" then there is likely to be blood obscuring the measuring lens. Performing a routine clean should rectify this • Any other problems, please contact POCT 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.
Maintenance	• Routine cleaning of the cuvette holder and measuring lens should be performed fortnightly • Press the dimple down on the cuvette holder and pull out to completely remove it from the analyser, wash in hot soapy water and leave to dry before inserting it back into the analyser • Use the ethanol cleaning spatulas provided to clean inside the analyser (measuring lens) • Allow to dry for approximately ten minutes before use

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 - HemoCue201 DM analyser

1. True or False? The patient's ear lobe is an appropriate place to take a sample from.

.....

2. Why should you ensure the cuvette is filled properly?

.....

3. How many drops of blood should you wipe away before applying the sample to the cuvette?

.....

4. According to Trust Policy, who can use the HemoCue 201 DM analyser? 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 Key Trainer?

.....

8. How do you contact POCT?

.....

Form 2 Questions - Answers for Key Trainers

1. True or False? The patient's ear lobe is an appropriate place to take a sample from.

   FALSE

2. Why should you ensure the cuvette is filled properly?

   To ensure accurate and reliable results

3. How many drops of blood should you wipe away before applying the sample to the cuvette?

   Wipe away 2 drops

4. According to Trust Policy, who can use the HemoCue 201 DM analyser? How often do you need to be trained?

   All staff who have been trained and competency assessed 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 Key Trainer?

   Contact the Point of Care Department

8. How do you contact POCT?

   Contact details are found in the Ward Information Booklet email - leedsth-tr.pointofcare@nhs.net Ext 22338

FORM 3 **Observational Assessment: Performing a patient test on the HemoCue 201 DM analyser**

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 patient's ID on screen matched that of the patient who the sample came from? • ***Did the member of staff enter their own barcode password?***	
4 Sampling-can be done with either patient or QC sample • Did the member of staff wipe away the first 2 drops of blood? • Was the sample applied to the cuvette correctly? • Dis the member of staff wipe away any excess sample from the sides of the cuvette?	
5 HemoCue 201 DM analyser use and maintenance • Does the member of staff know how to clean the cuvette tray and measurement lens? • 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 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:

HemoCue 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*	*HemoCue*	*CROSS SITE*	*1234567*	*Joe.bloggs1234@nhs.net*	