

Audit of HbA1c Analysis and Reporting in the Presence of Variant Haemoglobins in Scotland 2020



J Johnstone on behalf of the ACB Scotland Audit Group

This questionnaire has been distributed to all laboratories across Scotland to assess variation in analysing and reporting HbA1c results in the presence of Haemoglobin variants between laboratories. HbA1c reporting was standardized in 2009, however, variant haemoglobins among the patient population present some difficulties. Different analytical systems are uniquely affected by some but not other variants, some of which may be quite prevalent in the local population. Identifying variants to clinicians in a comprehensible way and reporting – or not reporting – HbA1c results as appropriate is challenging and may benefit from a common approach.

Laboratory Name: _____

Location: _____

Health Board: _____

Response only for this location **Response on behalf of all hospitals in Trust**

Details of individual responding:

Name: _____ **Position:** _____

Contact details: _____

If HbA1c analysis is not performed in your location then please forward to the relevant location, or fill in details above and complete question 1 before returning to: joy.johnstone@nhs.scot

HbA1c Analysis

1. Do you perform HbA1c in your laboratory or do you refer this to another laboratory. If analysed in-house in which department is this performed?

Referred to different Laboratory

Please indicate which laboratory _____

At this laboratory

If at this laboratory please indicate department: _____

2. What is the main methodology used in your department (Method 1):

Method 1 _____
 Manufacturer _____
 Analyser _____

3. Do you have a secondary method (Method 2) and if so, is this primarily for use at point-of-care, for dealing with variants or other (please specify).

Alternate method available? Yes No

If yes please give details:

Method 2 _____
 Manufacturer _____
 Analyser _____

Used only as POCT analyser
 Used only for variant analysis
 Used for both
 Other (please specify)

4. Does your lab administer point of care HbA1c analysis - i.e. take responsibility for analyser, reagents, training etc. If yes please give details:

	Yes/No	Method	Analyser	Please indicate if analyser operated by lab staff, nurses or other
2^{dry} Care Clinics				
Community Clinics				

5. What reference interval(s) are quoted by your laboratory for HbA1c in non-diabetics?

Method 1 Range _____ mmol/mol Hb

Method 2 Range _____ mmol/mol Hb

Dealing with haemoglobinopathies.

6. How are variant haemoglobins detected in your laboratory? Tick all that apply.

Does method identify variants?

Method 1 Yes No Method 2 Yes No

If “yes” how are these indicated?

Method 1

Method 2

Analyser alerts

Scrutiny of chromatograms

Grade of staff checking chromatograms: _____

Known patients “flagged” in:

Analyser software

LIMS

Other (please specify)

Does method identify variant type?

Method 1

Yes

No

Method 2

Yes

No

7. Does your laboratory keep a record of previously identified variants (tick all that apply)?

Paper record

Electronic record

Flags within instrument software

8. If HbA1c is unreportable or unreliable, do you perform or recommend an alternative (tick all that apply)?

HbA1c analysis automatically analysed in-house by unaffected method

Sample sent to another laboratory for HbA1c analysis by unaffected method

Alternative analysis suggested but not sent/performed automatically

Fructosamine suggested

Fructosamine added if serum sample available

No alternative offered or recommended

Other (please specify)

Please indicate alternate testing used/recommended e.g., HbA1c immunoassay etc.

9. Is further investigation of new haemoglobinopathies recommended by your laboratory?

- Genetic testing performed automatically in own hospital/trust
- Sample automatically sent for genetic testing at referral laboratory
- Clinician advised of follow up if desired.
- No recommendation made.

10. How are variant haemoglobins communicated to clinicians (tick all that apply)?

- In the results field of your LIMS
- In laboratory comments
- By letter, e-mail or phone
- Other (please specify)

11. How are results reported in the following scenarios?

11 a) NEWLY DETECTED VARIANTS

Variant	HbA1c reported Yes/no	Variant type reported (if known) Yes/no	If a comment is appended to the report, please include it below
High HbF: Below manufacturer cut-off			
Above manufacturer cut-off			
Non-interfering variant			
Interfering variant with reportable HbA1c			
Interfering variant with unreportable HbA1c			

11 b) PREVIOUSLY IDENTIFIED VARIANTS

Variant	HbA1c reported Yes/no	Variant type reported (if known) Yes/no	If a comment is appended to the report, please include it below
High HbF: Below manufacturer cut-off			
Above manufacturer cut-off			
Non-interfering variant			
Interfering variant with reportable HbA1c			
Interfering variant with unreportable HbA1c			