

Haemoglobinopathy EQA

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Abnormal Haemoglobins Scheme

▶ Sickle screening

Solubility test

171 labs (138 UK)



Specimens:

Whole blood

▶ Abnormal haemoglobins + HbA₂/F

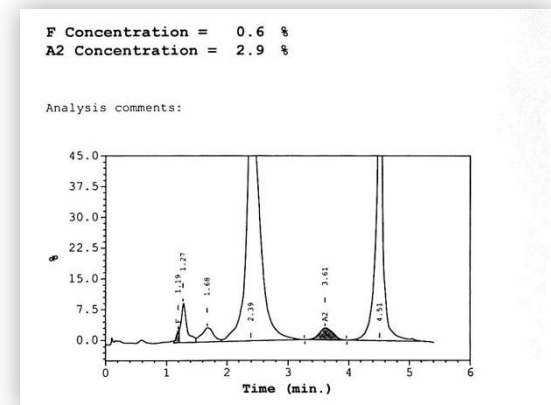
Haemoglobin electrophoresis

High Performance Liquid Chromatography

Capillary electrophoresis

Mass spectrometry

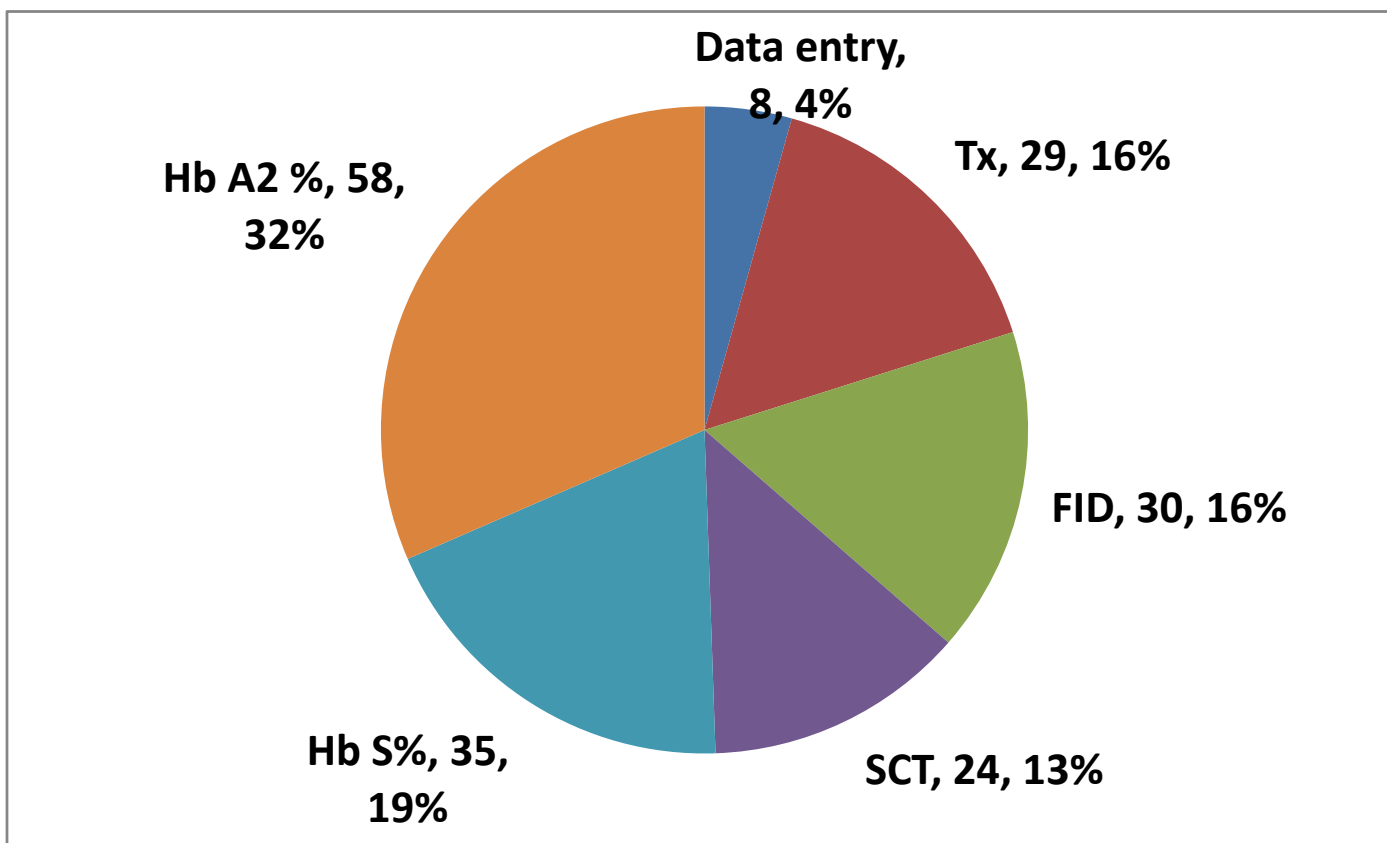
307 labs (117 UK)



Performance criteria – unsatisfactory performance

- ▶ Non–return for 2 of 3 consecutive distributions
- ▶ Sickle solubility test incorrect
- ▶ Fraction identification – not giving the fractions essential for diagnosis
- ▶ Hb A₂%: score >100
- ▶ Hb S%: score >100
 - (Score >100 = average DI >1.85 over 6 specimens)

Analytical performance errors 2015 – 2018



Sickle solubility test

24 errors (16% of total)

Operator errors:

- Setting up test

- Pipetting errors

- Difficulty in reading results

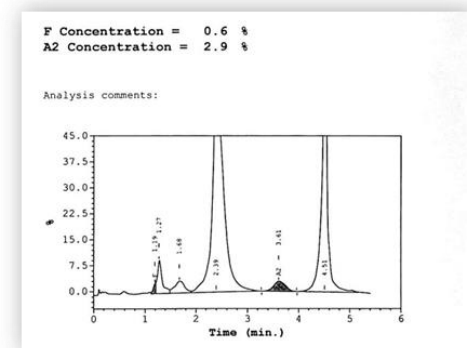
- Recording results



Fraction identification

- ▶ Not reporting all fractions essential for diagnosis
 - Hb A not reported
- ▶ Reporting Hb S and Hb C present, when using a method unable to differentiate
- ▶ Reporting a Non-specified fraction without further description

UK NEQAS –
modify data capture methods!



Transposition/Transcription

- ▶ Results not double checked
- ▶ Specimens decanted for analysis
- ▶ Barcode labels switched
- ▶ Specimens racked up in reverse order for manual analysis
- ▶ Data entered incorrectly

- ▶ Outcomes largely affect fraction identification and sickle testing
- ▶ Will have cumulative effect on quantitation
- ▶ **Numbers are likely to be underestimated**

Hb A₂ quantitation

- ▶ Unable to explain errors
 - Sometimes a 'one-off'
 - Sometimes an emerging problem
- ▶ Occasional transposition of specimens/results
- ▶ Instrument failures/ age – mirrored in IQC
- ▶ Column / reagent batch problems
- ▶ Deep clean and service needed
- ▶ Within and between instrument group variation