Haemoglobinopathy EQA

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Abnormal Haemoglobins Scheme

- Sickle screening
  Solubility test
  171 labs (138 UK)

- Abnormal haemoglobins $+\text{HbA}_2/F$
  Haemoglobin electrophoresis
  High Performance Liquid Chromatography
  Capillary electrophoresis
  Mass spectrometry
  307 labs (117 UK)

Specimens: Whole blood
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

- Hb A2 %, 58, 32%
- Hb S%, 35, 19%
- FID, 30, 16%
- SCT, 24, 13%
- Data entry, 8, 4%
- Tx, 29, 16%
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