UK NEQAS
Haematology and Transfusion

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Non-scoring Pre-Transfusion Testing (PTT) EQA samples – Why you shouldn't be afraid of a strange result

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Introduction

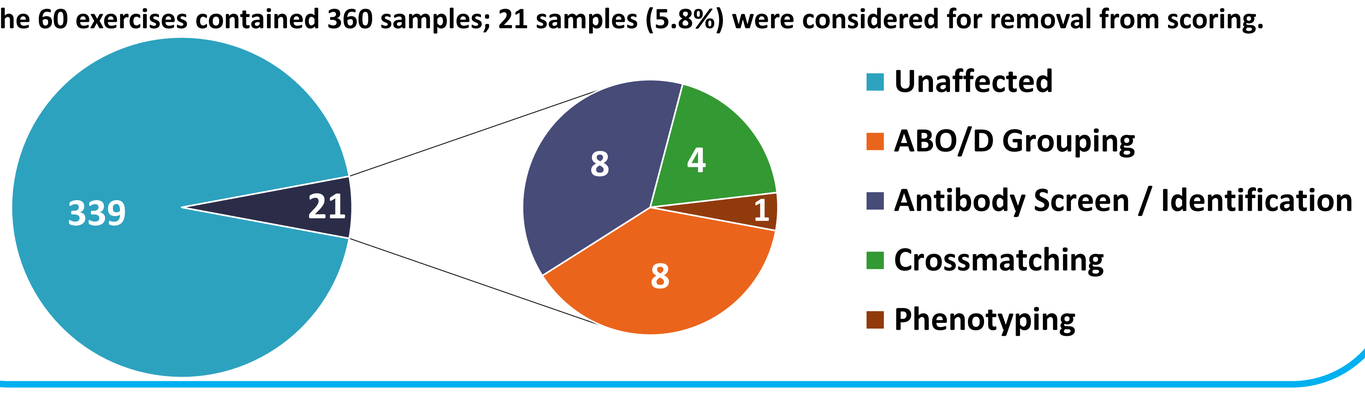
- UK NEQAS BTLP EQA exercises contain samples which are intended for performance monitoring of critical blood transfusion tests.
- Penalty points are applied for incorrect results and form the basis on which performance is assessed.
- Occasionally the material gives unexpected results, anomalous results or it deteriorates sufficiently that it is unfair to use for performance monitoring and the relevant tests are removed from scoring.
- On rare occasions, samples are distributed which have been designed to mimic anomalous results occasionally seen in clinical samples and it is anticipated that the sample may need to be removed from scoring for the affected tests.
- In these circumstances, careful deliberation takes place to decide suitability for scoring, and whether any learning points can be made.
- Where samples / tests are not scored, the opportunity is taken to make educational points.

Methods

- Six years' worth of exercise plans and reports were analysed.
- Data was gathered on the affected type of test, what the issue was, and whether any changes to scoring were required.

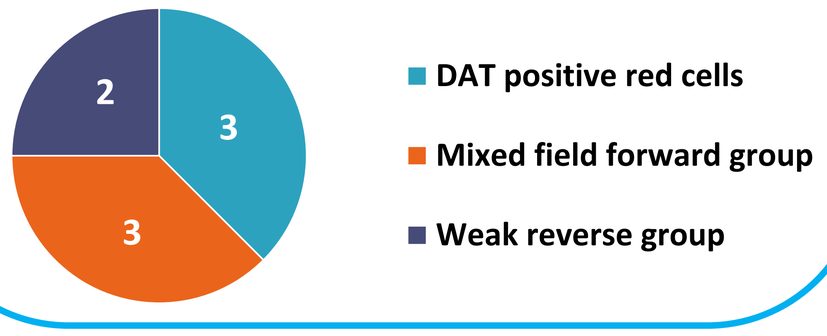
Samples considered for removal from scoring

- Over the course of six years 60 exercises were distributed; 14 (23.3%) contained a sample where some tests were considered for removal from scoring.
- The 60 exercises contained 360 samples; 21 samples (5.8%) were considered for removal from scoring.



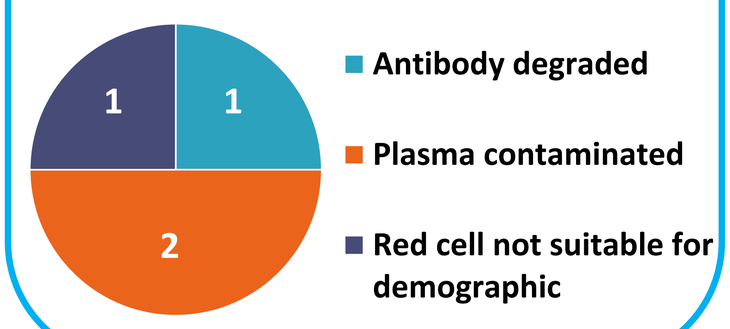
Blood Grouping samples

- Eight samples were designed to mimic commonly seen grouping anomalies, to determine if laboratory processes would give a clinically safe interpretation.
  - Three were D negative samples where a positive DAT was induced using anti-c; these samples were manufactured to determine if a positive DAT could cause an incorrect D interpretation.
  - Three contained a mixture of ABO groups at various ratios; one also contained a mix of D negative and D positive red cells.
  - Two were group B red with a low-level anti-A.



Crossmatching samples

- Four crossmatches were affected; three where the plasma sample did not react as planned, and one where the red cell provided was the issue.
  - One plasma sample contained an anti-s which degraded causing IAT crossmatches to be more likely to be negative towards the end of the exercise.
  - Two plasma samples were contaminated with an additional antibody which caused some laboratories to report a correct but unanticipated incompatibility with units which were planned to be compatible; one anti-Wr^a and one anti-A.
  - In one exercise, the "patient" was described as a D Negative woman of child-bearing potential and one of the units offered was D Positive; this resulted in many laboratories deselecting the unit rather than performing a crossmatch. This combination is now actively avoided during exercise planning.

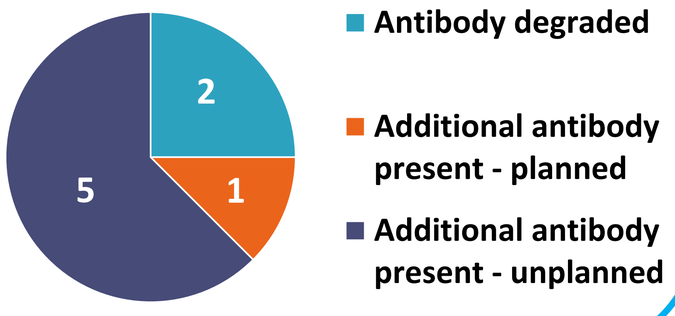


Phenotyping

- One Kidd phenotyping sample had scores reduced by half due to >20% of laboratories obtaining incorrect results.
- This was a driver in the development of the Extended Phenotyping programme.

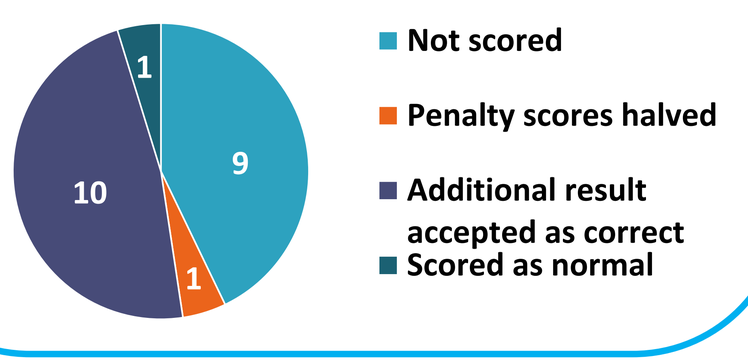
Antibody Screen / Identification

- Eight samples were affected by the antibody contents of plasma samples.
  - Two antibodies degraded during the exercise, one anti-s and one "NEQAS anti-D standard".
  - One sample contained anti-E and anti-C^w as planned.
  - Three samples contained additional unexpected antibodies; two contained an extra anti-Wr^a and three samples contained an extra enzyme non-specific antibody.



Sample scored?

- Ten out of the 21 anomalies were planned as part of the exercise.
- 20/21 samples had changes made to the scoring algorithm; all were to prevent penalty points being applied which could be considered unfair; 7 were pre-planned to be unscored.
- Nine samples had tests that were removed from scoring; these included all the mixed field blood groups and when the antibody degraded during the exercise.
- Ten had an additional acceptable answer added:
  - Six contained an unintentional additional antibody; provided all the intended clinically significant antibodies were identified, no penalty points were applied.
  - Four contained an ABO/D grouping discrepancy; "Unable to identify" was an acceptable answer.



Conclusion

- Although the primary responsibility of EQA providers is performance monitoring of individual laboratories, another significant role is providing educational opportunities.
- As with EQA errors, unusual EQA samples allow educational points to be made and laboratories to reflect on how local policies would deal with an equivalent clinical sample; they are a problemtunity allowing reflection and improvement.

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UK NEQAS BTLP is hosted by the West Hertfordshire Teaching Hospitals NHS Trust