

Piloting Transfusion EQA into the Future

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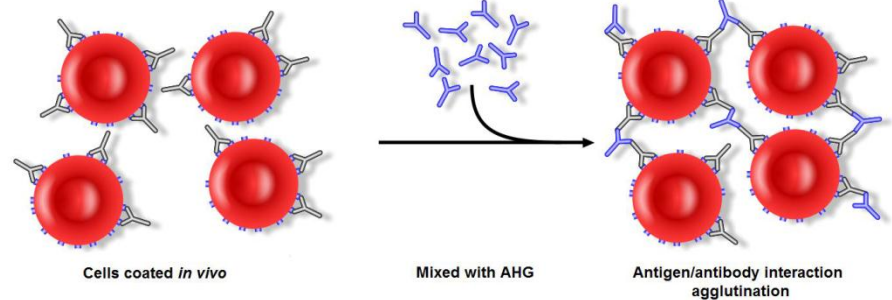
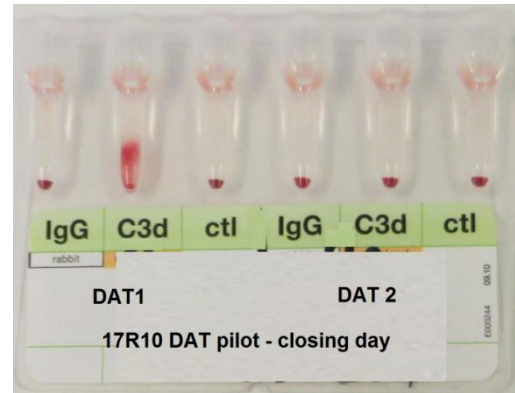
UK NEQAS

Blood Transfusion Laboratory Practice

BBTS/UK NEQAS joint annual meeting 2018

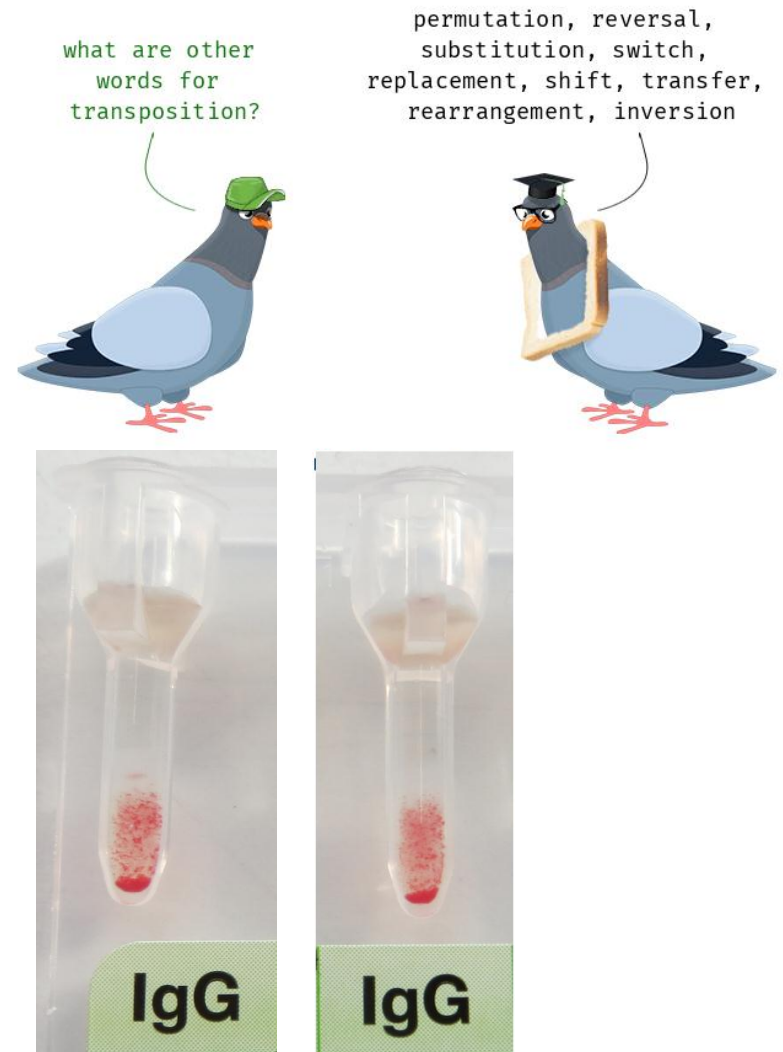
Direct Antiglobulin Test

- “ Pilot scheme since 2015
- “ Format of exercises, red cell stability, and sample concentration were established first
- “ Exercises created to highlight various learning points
- “ Data from participants gathered on technologies used
- “ Scoring system derived
- “ In-house bespoke reporting software written and is in the process of being validated



DAT – Learning points

- “ Transcription and transposition errors
- “ Subjectivity of reaction grading – demonstrated using the same pool of material for both samples
- “ Variation in sample preparation



DAT – Learning points

- “ Variation in results reported by technology
- “ Variation in interpretation of results
- “ False negatives and false positives
- “ Testing policies in contravention of guidelines
 - Guidelines* state ‘at a minimum, the DAT should include monospecific anti-IgG and anti-C3d’, since an indication of which molecule cells are coated with can contribute to making a diagnosis of the type of autoimmune haemolytic anaemia.

*BSH guideline for the diagnosis and management of primary autoimmune haemolytic anaemia. British Journal of Haematology 2017 176(3) 395-411 and at <https://b-s-h.org.uk/guidelines> accessed on 14/09/2018

Extended red cell phenotyping (ERP)

- “ Launched in April 2018
- “ Four exercises annually
- “ Serological phenotyping for D, Cc, Ee, MN, Ss, Kk, Fy^a, Fy^b, Jk^a, Jk^b
- “ Two red cell samples per exercise
- “ Reported via web-based in-house bespoke software
- “ Currently 58 participating labs



Aims of the ERP pilot scheme

- “ To provide more comprehensive assessment for laboratories phenotyping for a range of red cell antigens (and more frequently)
- “ To represent samples from previously untransfused patients that require phenotyping to facilitate long term transfusion support



Exercises so far....

- “ 1819ERP1 and 1819ERP2– analysed and reported
- “ 1819ERP3 – currently being created and getting ready for distribution on 3rd December

ERP Findings

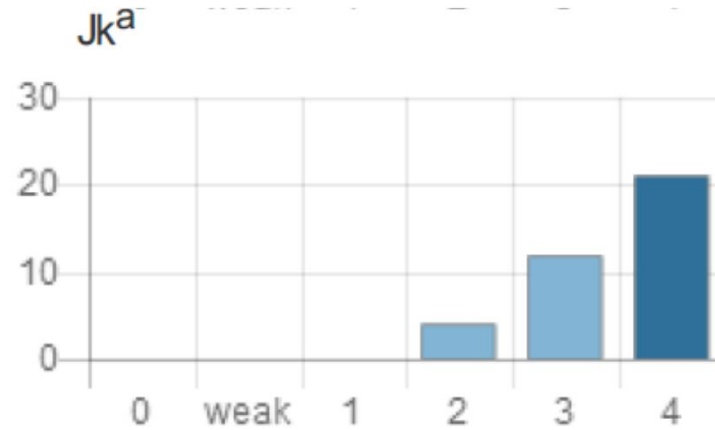
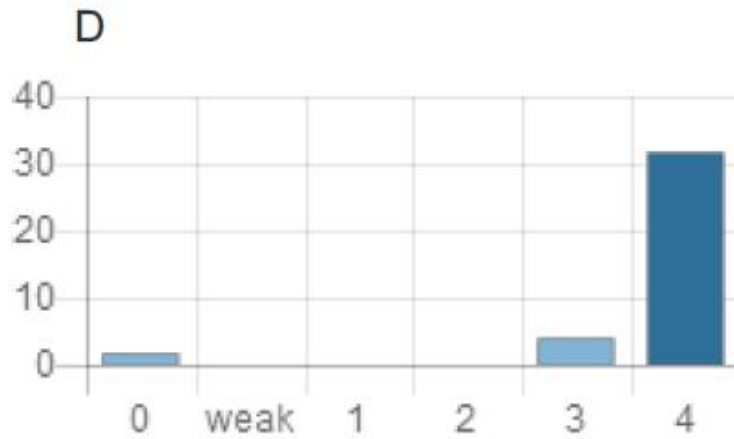
“ 1819ERP1 Four laboratories with errors

Laboratory	Patient sample	Consensus phenotype	Reported reaction grade vs. corresponding reagent	Consensus probable Rh phenotype	Reported probable Rh genotype
A	1	D pos	0	R ₀ r/R ₀ R ₀	rr
B	1	D pos	0	R ₀ r/R ₀ R ₀	rr
	2	D pos	0	R ₁ r	r'r
C	2	Jk(a-)	4	n/a	n/a
	2	Jk(b+)	0	n/a	n/a
D	2	N+	0	n/a	n/a

“ 1819ERP2 Five laboratories with errors

Laboratory	Patient sample	Consensus phenotype	Reported reaction grade vs. corresponding reagent
A	1	K neg	4
B	1	S neg	3
	1	s pos	0
C	1	S neg	3
	1	Fy ^a pos	0
D	2	Fy ^a neg	1
E	2	Fy ^b pos	0

Graphical representation of results



Result	Antigens															
	D	C	E	c	e	M	N	S	s	K	k	Fy ^a	Fy ^b	Jk ^a	Jk ^b	
Your reaction grade	4	0	0	4	4	3	0	0	4	4	NT	0	4	4	0	
Consensus result	Pos	Neg	Neg	Pos	Pos	Pos	Neg	Neg	Pos	Pos	Pos	Neg	Pos	Pos	Neg	

Your result	R ₀ r / R ₀ R ₀
Consensus result	R ₀ r / R ₀ R ₀

Antenatal Antibody Titration (ANT)

- “ 2017 User satisfaction questionnaire
 - . Suggestion for a new scheme
- “ Full Pilot launched in April 2018
- “ Four exercises annually – sent with 4 out of the 6 E exercises
- “ Titration of a (mostly) IgG antibody by IAT using your own cells

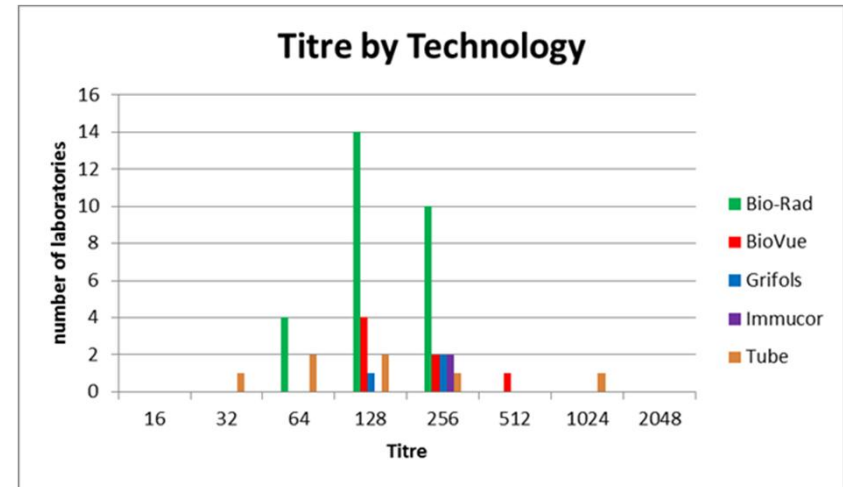
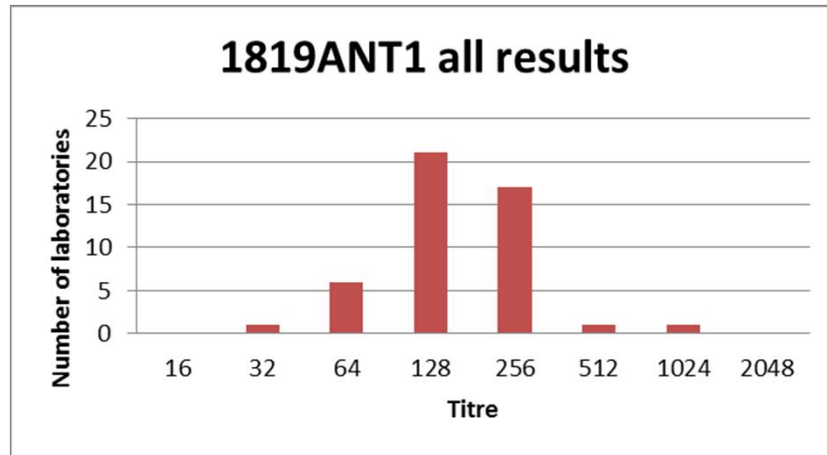


1819ANT1

- “ First exercise in July 2018, reported via SurveyMonkey®
- “ One plasma sample provided, with a clinical scenario –antenatal ‘booking’ sample containing anti-K and the woman’s partner had been typed as K positive
- “ Select a suitable red cell for titration, and titrate the anti-K
- “ Report the zygosity of the cell used, the reaction strength for each dilution, and the titre that would be reported.

1819ANT1

94% of results returned were within one dilution of the median



“ Areas of potential interest

- . Titre vs. titre score and potentially vs. IU/mL for anti-D and c
- . The end points chosen
- . Zygoticity of the cells used

UKNEQAS BTLP – further info

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