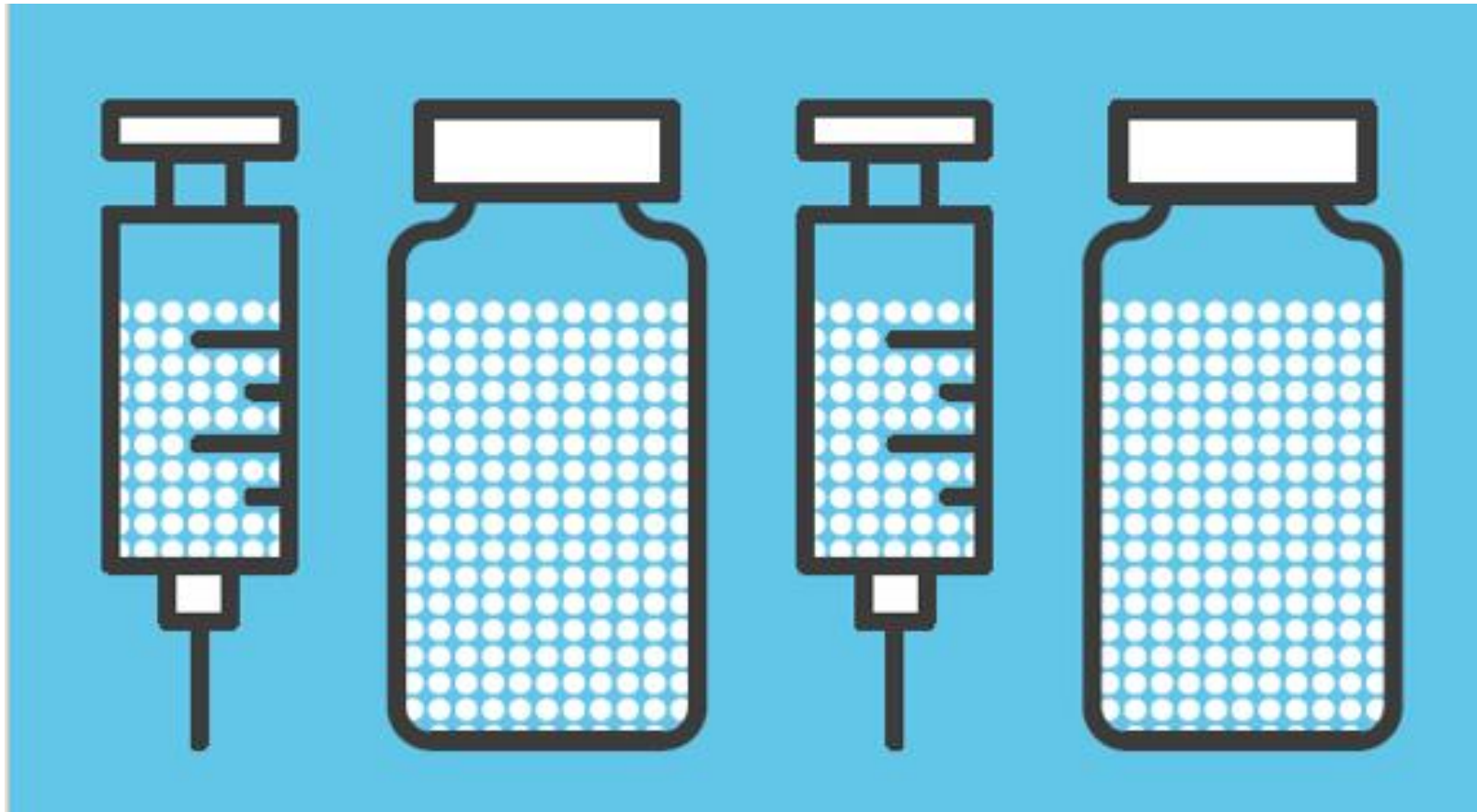


UK NEQAS

Blood Transfusion Laboratory Practice



UK NEQAS PTT update

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Summary

- Exercise 22R2 – things don't go as planned
- Issues for UK NEQAS
- Issues for participants
- Learning points

PTT 'R' Exercise material

- ▶ Whole blood samples – for grouping and Rh&K phenotyping
 - Prepared at UK NEQAS
 - Each pool ~ 3L
 - Four red cells ABO and D matched and same Rh and K phenotype
 - Five FFP donations ABO matched
 - Alsever's
- ▶ Plasma samples – for screening, +/-identification and XM
 - Prepared by external supplier
 - 3.5L pool required
 - ABO matched with the equivalent whole blood sample +/- antibody(ies)
- ▶ Donor cells – for XM
 - Prepared by external supplier
 - 2L pool required
 - Red cells from a single donor diluted in Alsever's solution
 - Specify ABO & D, Rh phenotype, and antigen pos or neg for corresponding antigens present in plasma samples



22R2 plan

- ▶ Plasma and donors arrive 18 days prior to distribution
 - Pre acceptance testing done
 - Antibody panels by 5 technologies IAT & enzyme
 - Crossmatching by 4 technologies
 - Titration of antibodies
 - Bottling done – tested post bottling
- ▶ Material for whole blood prep arrives 12 days prior to distribution
 - Pre-acceptance testing done (DAT + Rh&K if bags not labelled)
 - Pooling done – tested post pooling
 - Bottling done – tested post bottling
- ▶ All material bottled (~9000 samples including DAT exercise) and in cold room ready for packing ~10 days prior to distribution. Packing can take up to 5 days.

22R2 material

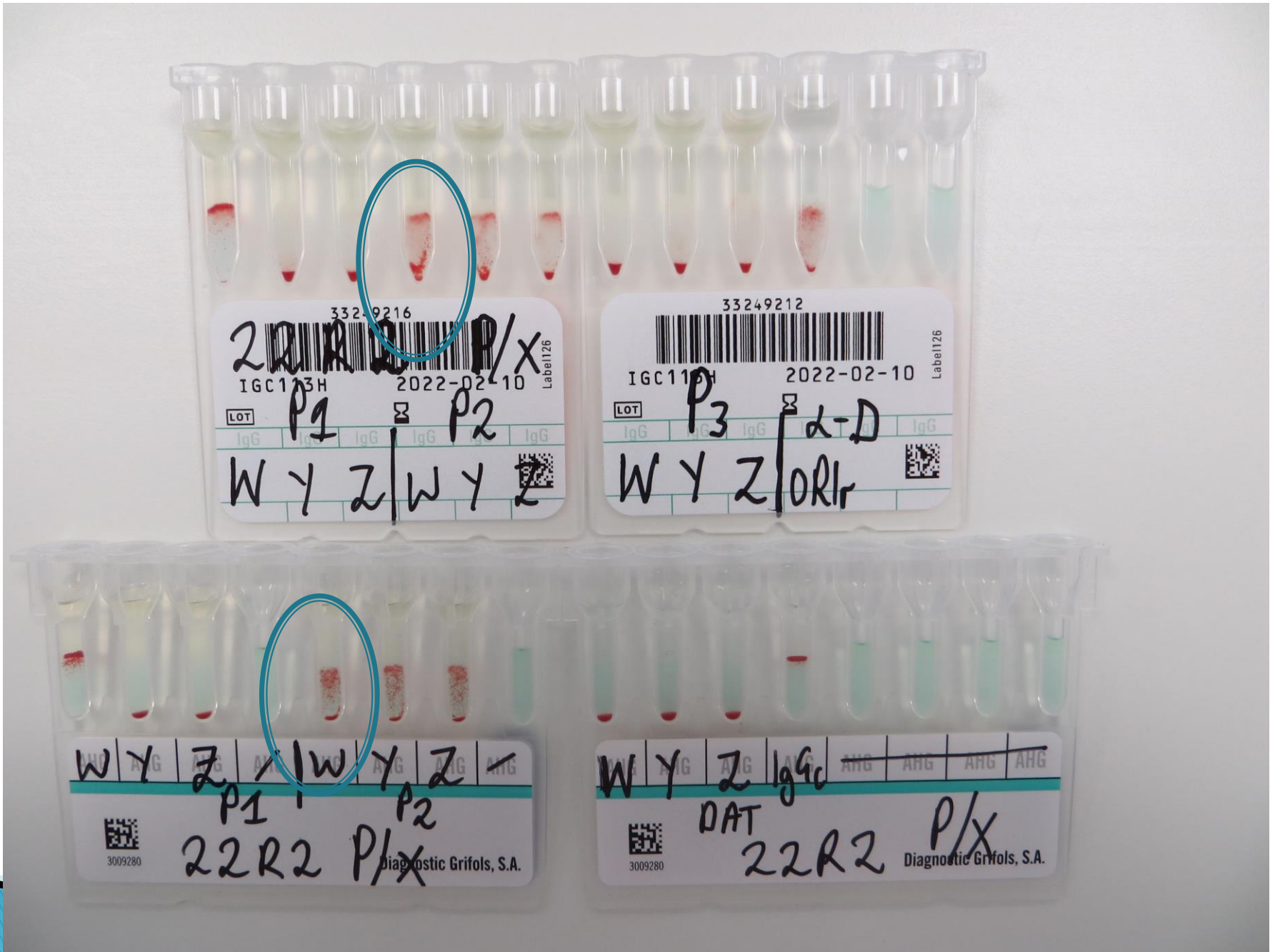
- ▶ Patient 1 – Group B D positive C+c+E+e+ (R₁R₂) K-, inert
- ▶ Patient 2 – Group A D negative, C-c+E-e+ (rr) K-, anti-K
- ▶ Patient 3 – Group A D positive, C+c+E-e+ (R₁r) K-, inert

- ▶ Donor W – Group A D negative, (rr), K-
- ▶ Donor Y – Group O D negative, (rr), K+
- ▶ Donor Z – Group O D negative, (rr), K+

22R2 Pre acceptance testing

- ▶ Patient 2 (A D neg rr K-, anti-K) vs. Donor W (A D neg rr K-)
 - Incompatible





22R2 Pre acceptance testing

- ▶ Possible causes

- Donation not K neg

- Donation DAT pos?

- P2 has antibody vs. low frequency antigen.....seems most likely



22R2 Pre acceptance testing

▶ Solution

- Order and prepare another Donor W
- We've already got 4 A rr K- units coming to make up whole blood – just order another one and get some Alsever's.
- We'll make Donor W ourselves



Donations arrive for whole blood prep

- ▶ We'll crossmatch all 5 A rr K- units to decide which to use – they should all be compatible



- ▶ That isn't an antibody against a low frequency antigen

Could it be anti-A₁? → A₁ type the donors



Moving forward

- ▶ Selected one of the two A rr K- A₁- units to use for Donor W
- ▶ All material bottled, packed and distributed



22R2 midway through exercise

- ▶ Small number of labs contact us about positive reaction for Patient 2 vs. Donor W they can't explain
- ▶ They've done a DAT
- ▶ They've checked it's K neg



Our thoughts

- ▶ Could it be anti-A not anti-A₁, but at a low level so only came up with A₁ units at UK NEQAS
- ▶ Contacted our supplier and asked them to check ABO groups of the plasma that had gone into Patient 2 pool
- ▶ Inert plasmas in pool – all group A
- ▶ Anti-K plasma in pool – group O

22R2 Report (UK data)

	Donor W	Donor Y	Donor Z	
Patient 1				
Your Result :	I	C	C	Your Score = 0
<i>Overall Results :</i>	I 99.5% n=(366)	C 99.7% n=(367)	C 99.7% n=(367)	
	C 0.5% n=(2)	I 0.3% n=(1)	I 0.3% n=(1)	
Patient 2				
Your Result :	C	I	I	Your Score = 0
<i>Overall Results :</i>	C 75.5% n=(278)	I 99.2% n=(365)	I 98.9% n=(364)	
	I 24.5% n=(90)	C 0.8% n=(3)	C 1.1% n=(4)	
Patient 3				
Your Result :	C	C	C	Your Score = 0
<i>Overall Results :</i>	C 100.0% n=(368)	C 100.0% n=(368)	C 100.0% n=(368)	

What next?

- ▶ Removed Patient 2 vs. Donor W from scoring
- ▶ Wrote up some learning points re investigation of unexpected pos XM
 - DAT
 - Antigen type
 - Possible anti-A₁ if patient group A or AB (often overlooked)
 - Antibody to low frequency antigen
- ▶ When might this phenomenon be seen clinically?
 - Post receiving an incompatible FFP transfusion (O to A)
 - Post platelet transfusions where only group O available (e.g. HLA matched)
 - IVIg patients immediately post infusion

Thank you

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