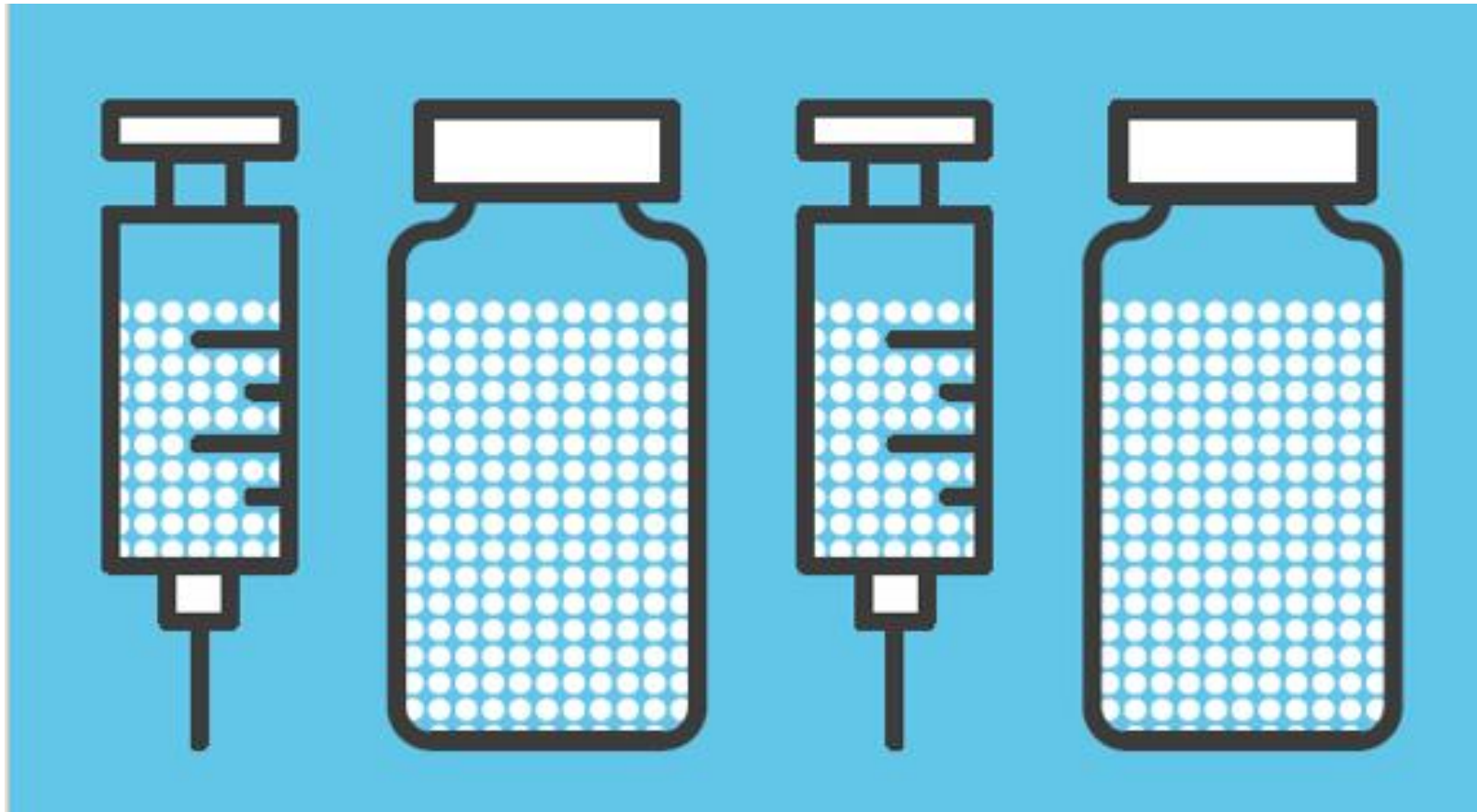


# UK NEQAS

Blood Transfusion Laboratory Practice



## DAT Scheme Update

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Director UK NEQAS BTL

## Summary

- Scoring and performance monitoring
- 2021 DAT exercises – common errors

## What's happened in the last year?

- November 2020 20DAT4
  - First exercise with scoring for participants
- March 2021
  - Increased demand for participation at reregistration

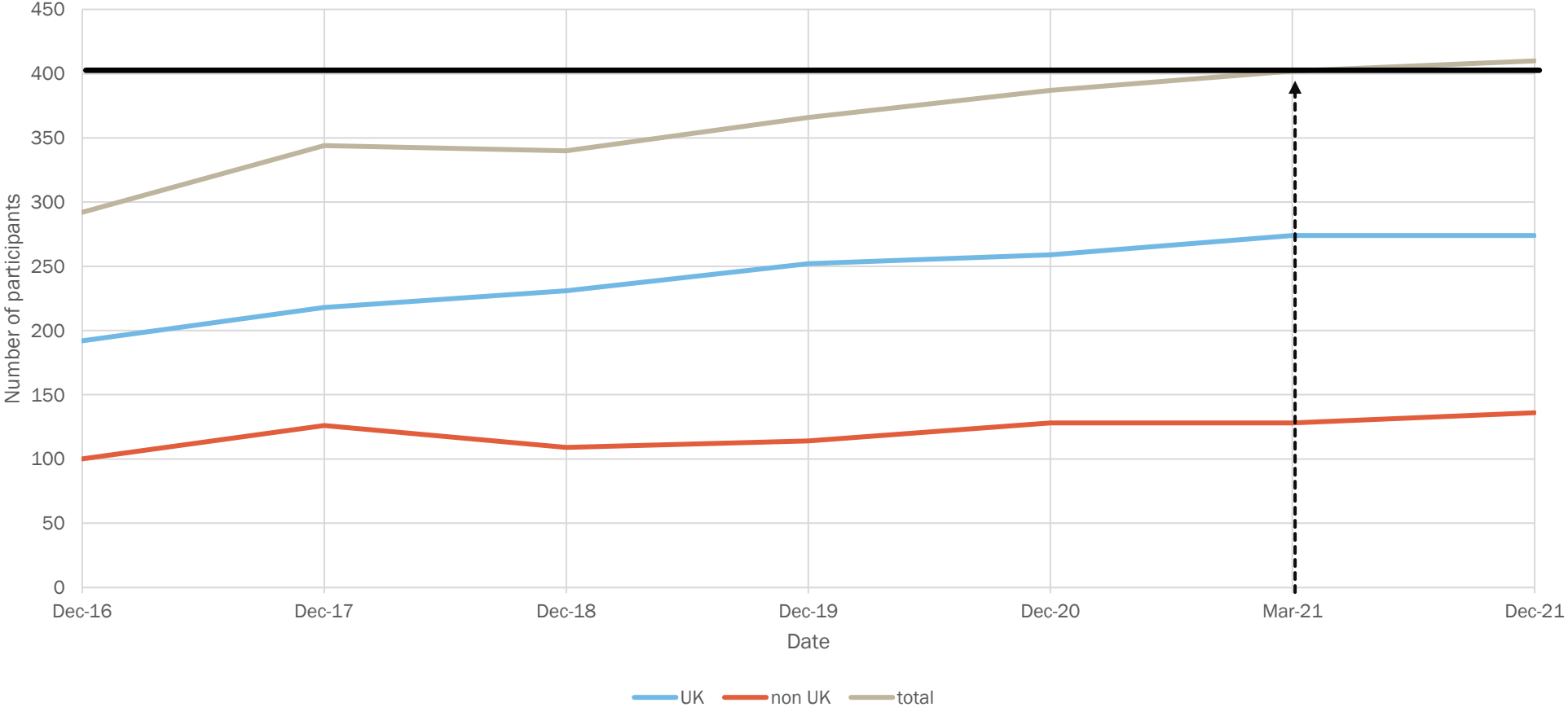
# The problem of numbers

- Each DAT sample is prepared from a single red cell donation diluted in modified Alsever's solution
  - 1 litre total volume available
  - Cells already significantly diluted
  - Maximum number of samples to be prepared ~400
- March 2021 – large numbers of additional labs requested DAT as part of reregistration



# What's happened in the last year?

UK NEQAS BTLP DAT Participation

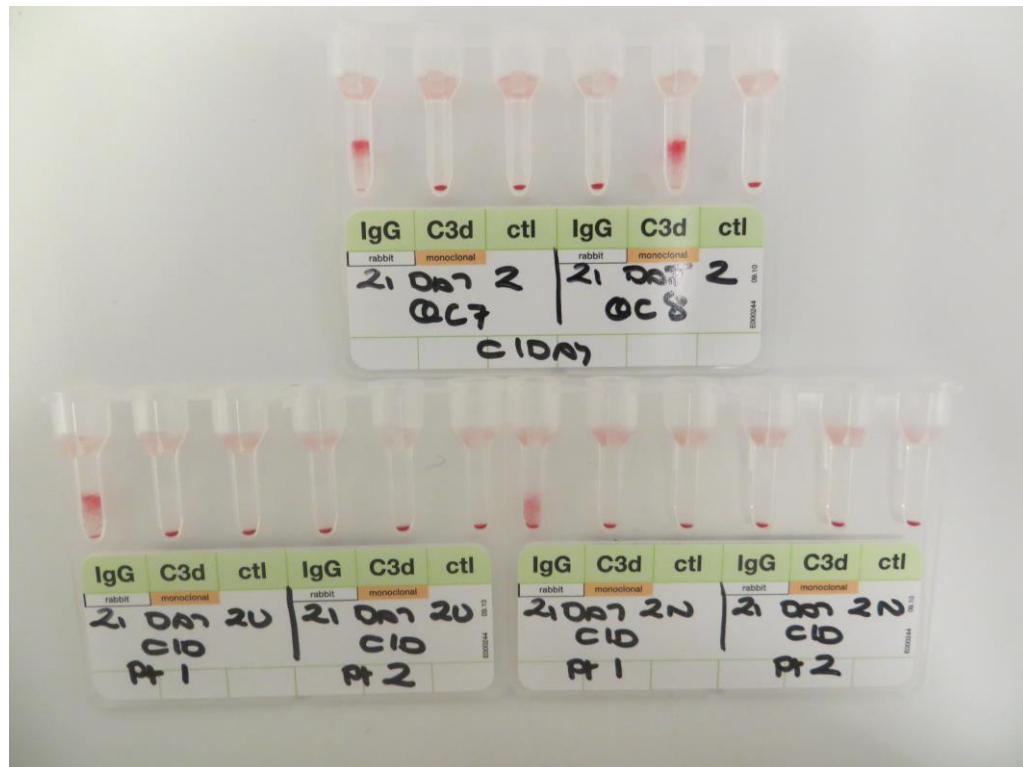


# The problem of numbers –the solution

- Prepare 2 sets of DAT material
  - 1 set distributed to the UK
  - 1 set distributed to non-UK laboratories
- DAT exercise numbers to remain the same
  - Suffix added to denote the distribution
    - U for UK
    - N for Non-UK
    - E.g. 21DAT2U and 21DAT2N
- Affect of this:
  - Complicated packing process
  - Additional cost of material and more testing
  - Allows additional participation

$$\begin{aligned}
 & \rightarrow Z^n \\
 & = \frac{(x^2+y^2)^2 \cdot y^{2n} \cdot (x^2+y^2)^2 \cdot x^{2n}}{\left[ (x^2+y^2)^2 - x^2(x^2+y^2) - x^2y^2 \right] \left[ (x^2+y^2)^2 - y^2(x^2+y^2) - y^2x^2 \right]} \\
 & = (x^2+y^2)^2 \frac{y^{2n} \cdot x^{2n}}{\left[ (x^2+y^2)^2 - x^2(x^2+y^2) - x^2y^2 \right] \left[ (x^2+y^2)^2 - y^2(x^2+y^2) - y^2x^2 \right]}
 \end{aligned}$$

# DAT - testing in CAT





# Scoring

Expected Result	Interpretation where reagent control, if included, is Negative					
	Negative	Positive	Positive IgG only	Positive C3d only	Positive IgG + C3d	Unable to interpret
Negative	0	30	30	30	30	30
IgG only	60	0	0	60	30	30
C3d only	60	0	60	0	30	30
IgG & C3d	60	0	30	30	0	30

Expected Result	Interpretation where reagent control, if included, is Positive					
	Negative	Positive	Positive IgG only	Positive C3d only	Positive IgG + C3d	Unable to interpret
Negative	0	30	30	30	30	0
IgG only	60	0	0	60	30	0
C3d only	60	0	60	0	30	0
IgG & C3d	60	0	30	30	0	0



# Scoring

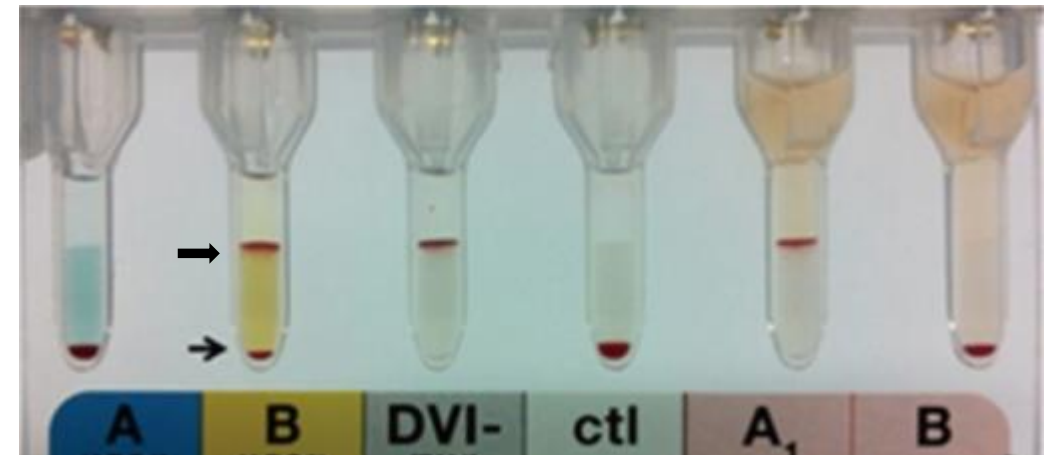
- Cumulative over the last six scored samples
- As with PTT
- 0 to 79 points – satisfactory performance
- 80 to 99 points – borderline performance
- $\geq 100$  points – unsatisfactory performance (UP)
- 50 points penalty for not returning results, if don't return results in 2 of last 3 exercises = UP
- Letter written to UK clinical labs who reach UP

## DAT exercises – main errors made

- Switching samples / results / data entry errors
- Reagent control positive – interpretation still made on results monospecific card
- Recording tests with polyspecific reagents only as Positive IgG and C3d
- Recording mixed-field results as uninterpretable

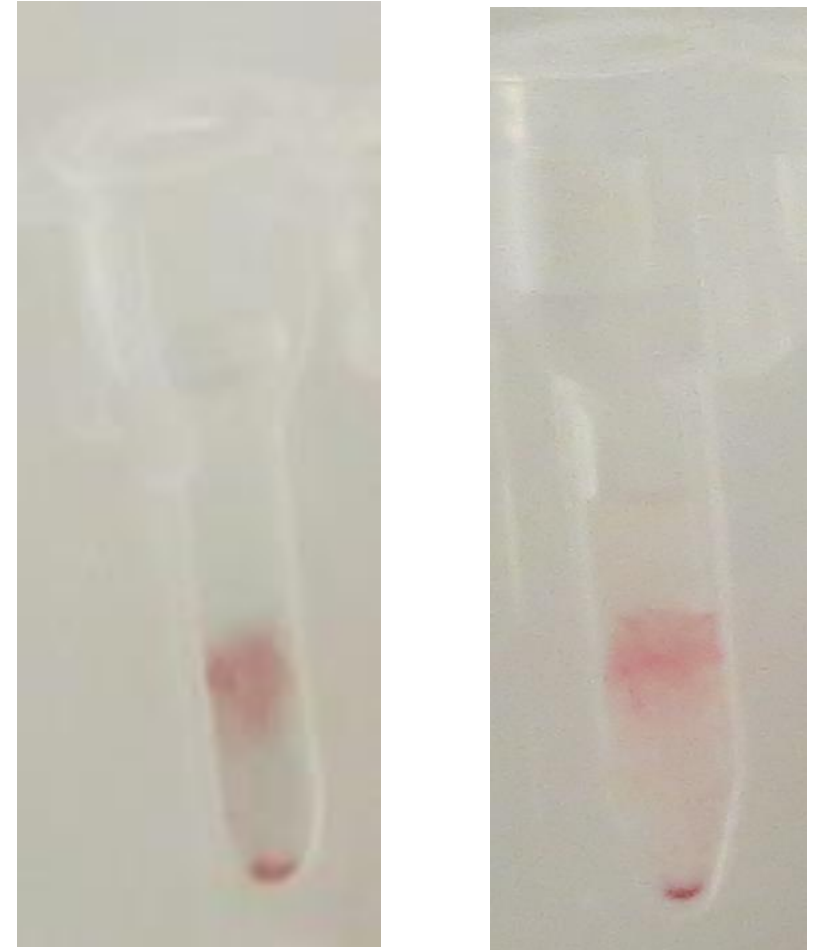
# Mixed-field results in ABO

- Clear dual cell population
- Cannot determine an ABO group for patient without further testing and investigation
- Cannot report a blood group
- Uninterpretable is the correct result



# Mixed-field results in DAT

- Often not a true dual cell population – reactions spread throughout column (although automation may call it mixed-field)
- A mixed-field in a DAT is a positive result
  - i.e. there are circulating cells with antibody or complement bound
  - Just don't know the reason for the result



Thank you

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International Quality Expertise

