UK NEQAS Update session November 2015

Clare Milkins
Jenny White
Claire Whitham
UK NEQAS (BTLP)

Update

- Accreditation
- UK NEQAS logo
- Learning points
- Website and web result page improvements
- Pilot scheme updates
- TACT update

ISO 17043

- Assessment June 2015
- Clearances submitted September 2015
- Clearance report received last week
- One outstanding issue
  - Legal entity and logo

UK NEQAS

International Quality Expertise

UK NEQAS

Feto-Maternal Haemorrhage

Schemes based at Watford GH (BTLP, H, FMH) applied for accreditation as a single unit – same quality management system

UK NEQAS
Haematology and Transfusion

West Hertfordshire Hospitals NHS Trust
Operating UK NEQAS Haematology and Transfusion

Learning points

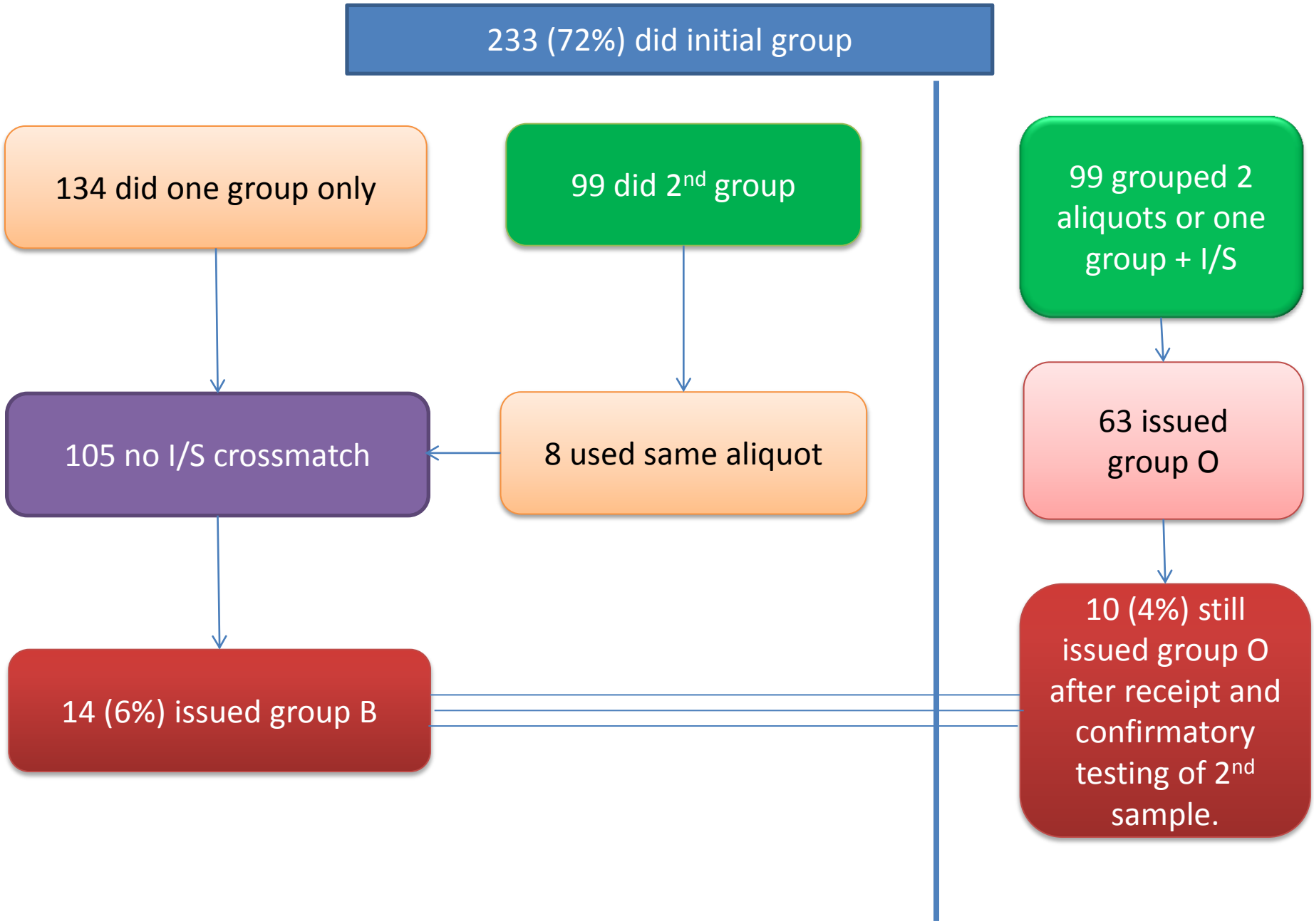
- Emergency exercise 15R1
- Mixed field 15R4

15R1 Emergency Exercise

- One extra whole blood sample
- Provide 4 units of red cells in 10 minutes
- Report extent of testing and results of ABO/D if undertaken
- Supplementary questions re component issue and further steps:
  - 4 different patient demographics
    - Women (aged 23 and 75), man (aged 45), child (male 8)

Results

- Return rate 348/396 (87.9%)
- Patient was B D negative


233 (72%) did initial group
134 did one group only
99 did 2nd group
99 grouped 2 aliquots or one group + I/S
105 no I/S crossmatch
8 used same aliquot
63 issued group O
14 (6%) issued group B
10 (4%) still issued group O after receipt and confirmatory testing of 2nd sample.

Group of FFP issued

ABO group of FFP	% Issuing each ABO group of FFP (n=220) of those undertaking a group			
	Male 45 yrs	Male 8 yrs	Female 23 yrs	Female 75 yrs
Group AB	9%	5%	11%	10%
Group B	88%	82%	88%	89%
Group A	2%	1%	1%	<1%
Group O	1%	0%	0%	1%

Also, 2/92 who did not perform an ABO group selected group O for all 4 patients

BCSH guidelines for use of FFP: Group O FFP should only be given to group O patients

UKNEQAS

Platelets issued (choice of O D positive and A D positive)

Platelet group issued	% issuing O or A for each patient type (n=315)			
	Male 45 yrs	Male 8 yrs	Female 23 yrs	Female 75 yrs
A D positive	86%	87%	87%	86%
O D positive	14%	13%	13%	14%

BCSH and SHOT recommend group O as last choice and only if HT neg

15R4 – Mixed Field ABO/D

15R4 – MF ABO/D

Patient 1

- 25:75 A:O (reverse group A)

Patient 2

- 25:75 D pos/neg

Instructions

– Assume all patients have been recently transfused. No patient demographics provided.

AIMS:

- Detection of the MF
- Interpretation of the group if MF is detected

ABO/D dual populations

- Transfusion of ABO/D compatible but non identical blood
- Post HSCT / BMT
- Rarely permanent chimerism or ABO subgroup
- Could be first indication of ABO incompatible transfusion

Sample	Reaction strength recorded (n=383)			
	MF	Strong +	Weak +	Neg
P1: Reaction vs. anti-A	91%	5%	3%	2%
P2:Reaction vs anti-D	57%	5%	10%	28%

Technology	MF anti- A	MF anti-D
DiaMed (n=173 & 177)	91%	72%
BioVue (n=79 & 87)	97%	39%
Capture/LPM (n=8 & 30)	50%	3%
Grifols (n=15 & 15)	100%	67%
Tube (n=14 & 13)	71%	54%

DiaMed Auto/man	MF anti-A	MF anti-D
Auto (n=135)	96%	74%
Manual (n=38)	76%	66%

15R4 P2 MF (D pos/neg 25:75)

Reactions other than MF recorded for Patient 2 vs. anti-D, by technology

Technology	Total	Negative	Weak positive	Strong positive
BioVue	53	33 (62%)	18 (34%)	2 (4%)
DiaMed	49	34 (69%)	3 (6%)	12 (24%)
Grifols	5	5 (100%)	0 (0%)	0 (0%)
LPMP[1]	29	28 (97%)	0 (0%)	1 (3%)[2]
Tube	6	1 (17%)	3 (50%)	2 (33%)

[1] LPMP = liquid phase microplate, and includes those stating Capture or solid phase
[2] manual testing

Questions raised

- Why is there a difference in detection rates of MF reactions between ABO and D typing?
- Why is this not consistent within and between technologies?

Antibody affinity

Potentiators

Shear forces

Excessive shaking in liquid phase

Centrifugation speeds and time

A combination of these things

Reaction grades vs. interpretation

Reaction grade anti-A	Total	UI	A	O
MF	348	70%	30%	0%
Weak +	11	9%	91%	0%
Strong +	17	0%	100%	0%
Neg	9	22%	0%	78%

Reaction grade anti-D	Total	UI	D pos	D variant	D negative
MF	220	85%	11%	3%	<1%
Weak +	39	28%	23%	49%	0%
Strong +	18	0%	100%	0%	0%
Neg	106	0%	0%	1%	99%

BCSH: anomalous reactions should be investigated

UK NEQAS

Dual populations in clinical practice

- Obvious limitations of EQA... but DP
  - Might not occur in test system used
  - Might not be recognised
  - Might not result in appropriate ABO/D interpretation

Website and data entry developments

UK NEQAS
Haematology and Transfusion

Who we are

The UK National External Quality Assessment Service (UK NEQAS) is a registered charity offering external quality assessment (EQA) services across all pathology disciplines.

What we do

The primary aim of UK NEQAS is to maintain and improve performance of diagnostic testing at a high level of proficiency, wherever testing is performed. Participation in EQA is an established part of Quality Assurance and is actively encouraged by professional bodies.

General Haematology	Blood Transfusion Laboratory Practice	Feto-Maternal Haemorrhage
1506RE,1511FB *close* in 1 day	There are no *open* distributions	1506F *closes* in 1 day
(click for data entry and reports)	(click for data entry and reports)	(click for data entry and reports)
More Distributions	Schedule	Schedule

Exercise Type	Exercise Code	Date of Despatch
ABO/RhD grouping, antibody screen/identification, crossmatch and red cell phenotyping	15R4	20 April 2015
Antibody screen/identification	15E5	18 May 2015
Antibody screen/identification	15E6	22 June 2015
ABO/RhD grouping, antibody screen/identification, crossmatch and red cell phenotyping	15R7	13 July 2015
Antibody screen/identification	15E8	14 September 2015
ABO/RhD grouping, antibody screen/identification, crossmatch and red cell phenotyping	15R9	12 October 2015
Antibody screen/identification	15E10	23 November 2015
ABO/RhD grouping, antibody screen/identification, crossmatch and red cell phenotyping	16R1	18 January 2016
Antibody screen/identification	16E2	15 February 2016
Antibody screen/identification	16E3	14 March 2016

UK NEQAS
Haematology and Transfusion

There are no *open* distributions
(click for complete schedule)

Documents & Downloads

Reports

Participant Manuals

Presentations

- UK NEQAS (BT) Symposium 2014 Anti-D Failures - Jane Keidan (PDF)
- UK NEQAS (BT) Symposium 2014 Do Rules and Regulation Improve Quality? - Jonathan Wallis (PDF)
- UK NEQAS (BT) Symposium 2014 Immune or Prophylactic Anti-D -Jenny White (PDF)
- UK NEQAS (BT) Symposium 2014 Implications of the PQA Review for Clinical Laboratories - Ian Barnes (PDF)
- UK NEQAS (BT) Symposium 2014 Interactive Session - Megan Rowley & Clare Milkins (PDF)
- UK NEQAS (BT) Symposium 2014 Measurement of Anti-D in Pregnancy - D Bruce & F Green (PDF)
- UK NEQAS (BT) Symposium 2014 NCA Anti-D Ig - Megan Rowley (PDF)
- UK NEQAS (BT) Symposium 2014 NEQAS Update 2014 (PDF)
- UK NEQAS (BT) Symposium 2014 Results from Anonymous Questionnaire - Clare Milkins (PDF)
- UK NEQAS (BT) Symposium 2014 Rules and Regulations - James Taylor (PDF)

Surveys

Instructions from manufacturers

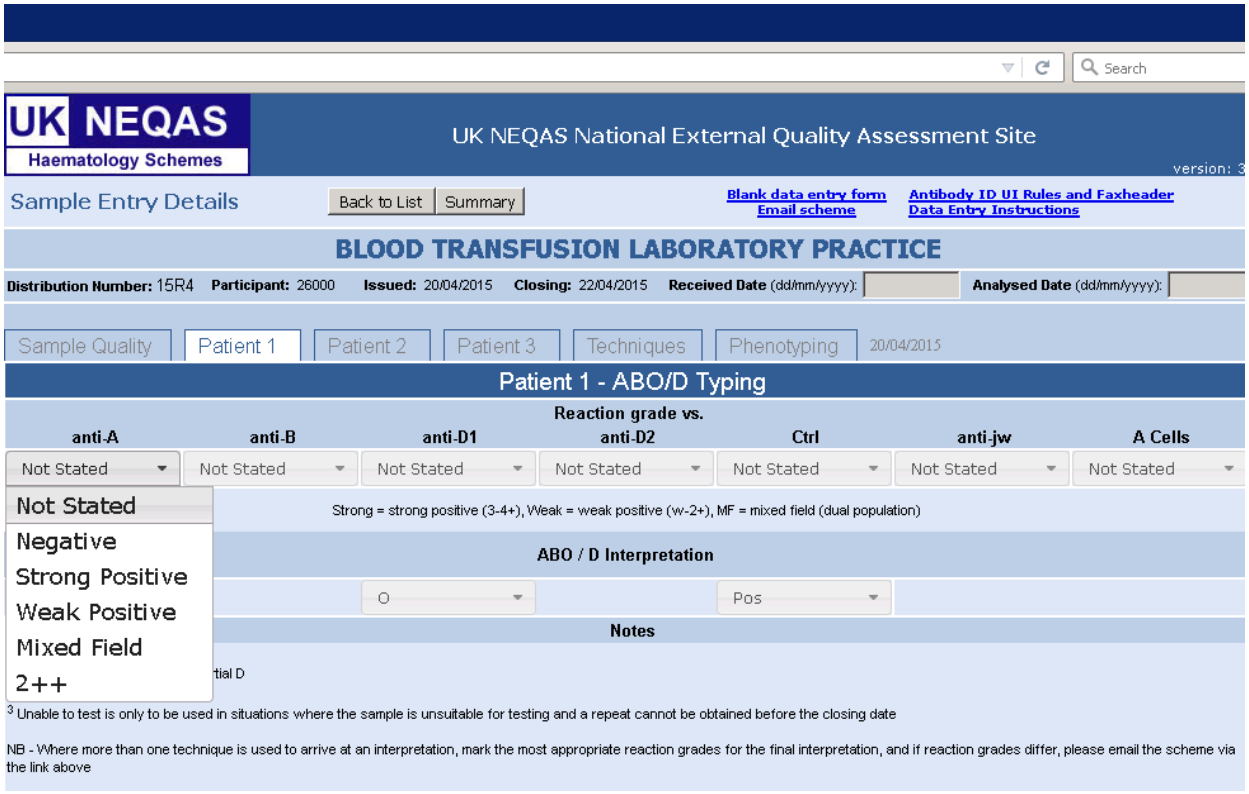
The Organisation
Schemes
Schedule
F.A.Q.
Contact Us
Documents & Downloads

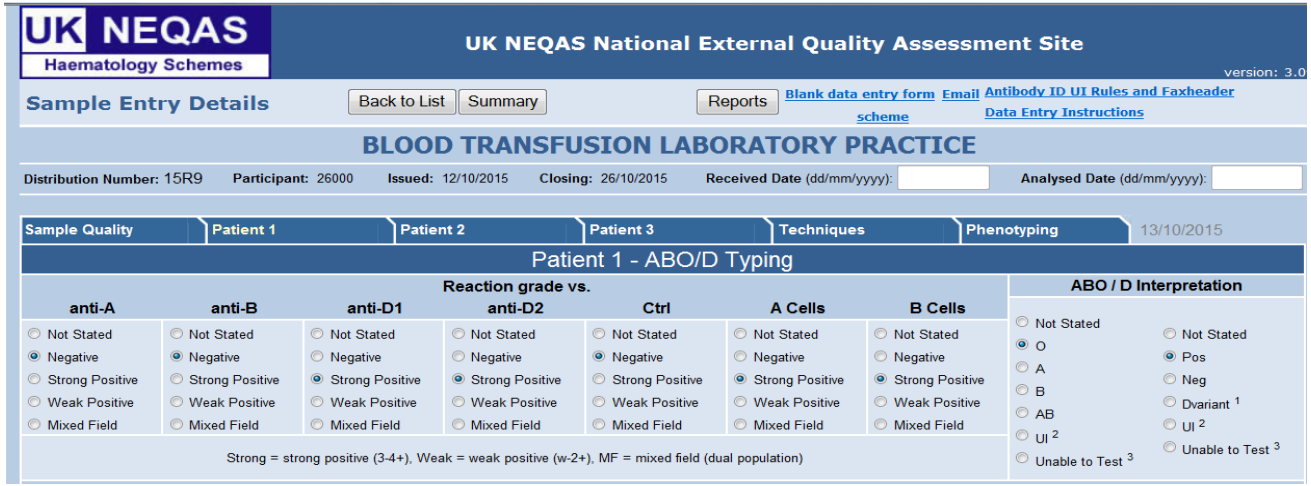
General Haematology
technical queries email
other queries email
(+44) (0) 1923 217878
(+44) (0) 1923 217879

Blood Transfusion
technical queries email
other queries email
(+44) (0) 1923 217933
(+44) (0) 1923 217934

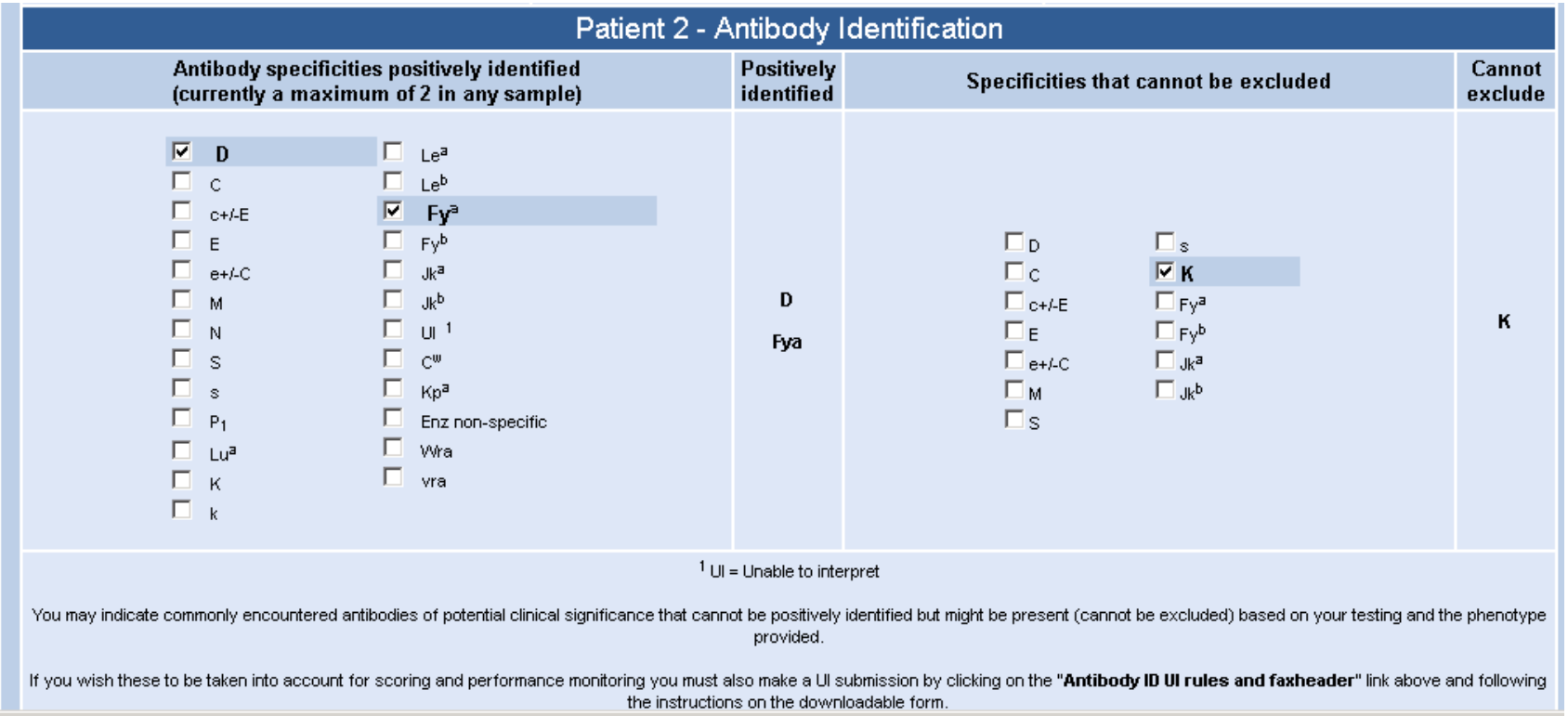
Feto-Maternal Haemorrhage
technical queries email
other queries email
(+44) (0) 1923 217933
(+44) (0) 1923 217879

Everything else
website feedback


UK NEQAS
Haematology Schemes
UK NEQAS National External Quality Assessment Site
version: 3
Sample Entry Details
Back to List
Summary
Blank data entry form
Email scheme
Antibody ID UI Rules and Faxheader
Data Entry Instructions
BLOOD TRANSFUSION LABORATORY PRACTICE
Distribution Number: 15R4
Participant: 26000
Issued: 20/04/2015
Closing: 22/04/2015
Received Date (dd/mm/yyyy):
Analysed Date (dd/mm/yyyy):
Sample Quality
Patient 1
Patient 2
Patient 3
Techniques
Phenotyping
20/04/2015
Patient 1 - ABO/D Typing
Reaction grade vs.
anti-A
anti-B
anti-D1
anti-D2
Ctrl
anti-jw
A Cells
Not Stated
Negative
Strong Positive
Weak Positive
Mixed Field
2++
Strong = strong positive (3-4+), Weak = weak positive (w-2+), MF = mixed field (dual population)
ABO / D Interpretation
O
Pos
Notes
tial D
3 Unable to test is only to be used in situations where the sample is unsuitable for testing and a repeat cannot be obtained before the closing date
NB - Where more than one technique is used to arrive at an interpretation, mark the most appropriate reaction grades for the final interpretation, and if reaction grades differ, please email the scheme via the link above


UK NEQAS
Haematology Schemes
UK NEQAS National External Quality Assessment Site
version: 3.0
Sample Entry Details
Back to List
Summary
Reports
Blank data entry form
Email scheme
Antibody ID UI Rules and Faxheader
Data Entry Instructions
BLOOD TRANSFUSION LABORATORY PRACTICE
Distribution Number: 15R9
Participant: 26000
Issued: 12/10/2015
Closing: 26/10/2015
Received Date (dd/mm/yyyy):
Analysed Date (dd/mm/yyyy):
Sample Quality
Patient 1
Patient 2
Patient 3
Techniques
Phenotyping
13/10/2015
Patient 1 - ABO/D Typing
Reaction grade vs.
anti-A
anti-B
anti-D1
anti-D2
Ctrl
A Cells
B Cells
Not Stated
Negative
Strong Positive
Weak Positive
Mixed Field
Strong = strong positive (3-4+), Weak = weak positive (w-2+), MF = mixed field (dual population)
ABO / D Interpretation
Not Stated
O
A
B
AB
UI 2
Unable to Test 3
Not Stated
Pos
Neg
Dvariant 1
UI 2
Unable to Test 3

Antibody ID data entry



Patient 2 - Antibody Identification

Antibody specificities positively identified (currently a maximum of 2 in any sample)	Positively identified	Specificities that cannot be excluded	Cannot exclude
☑ D ☐ C ☐ c+/-E ☐ E ☐ e+/-C ☐ M ☐ N ☐ S ☐ s ☐ P_1 ☐ Lu^a ☐ K ☐ k ☐ Le^a ☐ Le^b ☑ Fy^a ☐ Fy^b ☐ Jk^a ☐ Jk^b ☐ UI [1] ☐ C^w ☐ Kp^a ☐ Enz non-specific ☐ Wra ☐ vra	D Fya	☐ D ☐ C ☐ c+/-E ☐ E ☐ e+/-C ☐ M ☐ S ☐ s ☑ K ☐ Fy^a ☐ Fy^b ☐ Jk^a ☐ Jk^b	K

[1] UI = Unable to interpret

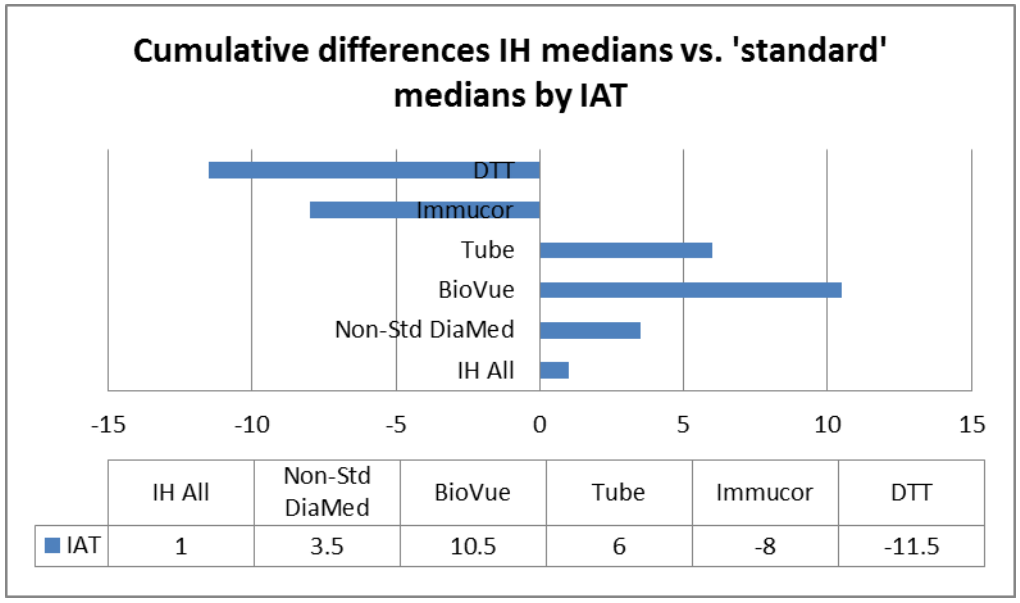
You may indicate commonly encountered antibodies of potential clinical significance that cannot be positively identified but might be present (cannot be excluded) based on your testing and the phenotype provided.

If you wish these to be taken into account for scoring and performance monitoring you must also make a UI submission by clicking on the "**Antibody ID UI rules and faxheader**" link above and following the instructions on the downloadable form.

Pilot scheme developments

ABO titration pilot (1)

- 2010 - 2015 pilot – aim to support ABOi renal transplant
- ‘Standard’ technique - initially to facilitate EQA
- Still variation by technique… looking for trends 2014/15 data



	IH All	Non-Std DiaMed	BioVue	Tube	Immucor	DTT
IAT	1	3.5	10.5	6	-8	-11.5

ABO titration pilot (2)

- Work with renal specialists & NHSBT living donor strategy group to find a way to achieve standardisation across centres
  - equitable access to ABOi renal transplant programmes
  - safe cut-off limits on day of transplant
- NIBSC reference preparations HT anti-A and HT anti-B
  - Now accepted as WHO standard reference preparations
- Shadow scoring for standard technique in 2014/15 (and any other group large enough)
  - Based on distance from median result (one dilution either side OK)
  - Start in 2016… will allow us to move ABOT to a full UK NEQAS scheme

Red cell genotyping (pre-pilot UK NEQAS / ISBT)

- 14G1, 3 samples (unselected)
  - 55 labs 30 countries, 52 returns
  - D, Cc, Ee, MN, Ss, Kk, Fy^a Fy^b Fy, Jk^a Jk^b, Do^a Do^b
  - Genotype / predicted phenotype / Qs on practice
  - 6 labs with errors - testing, interpretation, procedure
  - Terminology!!!
- 15G1, 1 sample (selected Fy(a-b-))
  - Same set of labs + others, same tests, 52 returns
  - New format for results, following terminology nightmare last time!
  - 8 labs with errors (4 to do with Fy)
- Rh variant found in one sample in each exercise!
- EQA Scheme needed for routine testing
- Pilot planned for 2016 - UK and non-UK

ISBT International Society of Blood Transfusion

UK NEQAS

DAT pre-pilot

Summary of findings from
15R7 (distributed 13/07/2015)
15R9 (distributed 12/10/2015)

UKNEQAS

Introduction

- Two sets of pre-pilot samples for DAT sent to laboratories in the UK and ROI and some overseas with 15R7 and 15R9
- Initially to assess sample stability over a period of 2 weeks
- Participants were asked to test samples on receipt and again a week later
- 15R7
  - DAT 1: Negative
  - DAT 2: Positive (4+) coated with monoclonal anti-D
- 15R9
  - DAT 1: Positive (2+) coated with a weak monoclonal anti-D
  - DAT 2: Positive (2+) coated with polyclonal anti-K

15R7 DAT 2

DAT 2 vs Polyspecific AHG						
Result week 1		Result week 2				
Result	No. labs	4+	3+	2+	1+	Neg
4+	77[1]	65	9	1	0	1[2]
3+	11	4	6	1	0	0
2+	1	0	0	1	0	0

[1]One laboratory did not report a result vs. polyspecific AHG in week 2
[2]One laboratory reported a negative reaction for week 2, due to a transcription error.

87.4% of laboratories reported either the same reaction strength or stronger in week 2 as in week 1

Conclusions

- Results from both pre-pilot surveys have shown good sample stability for DAT
- Reported data for sample quality shows even where some haemolysis of the samples had occurred, the laboratories reporting unsatisfactory sample quality obtained the expected results
- A full report with data analysis will be issued soon
- UK NEQAS BTLP will continue piloting next year to include some complement coated cells
- Proceeding to a full DAT pilot in the near future

Claire Whitham MSc MIBMS, Snr EQA Scientist,
UK NEQAS BTLP

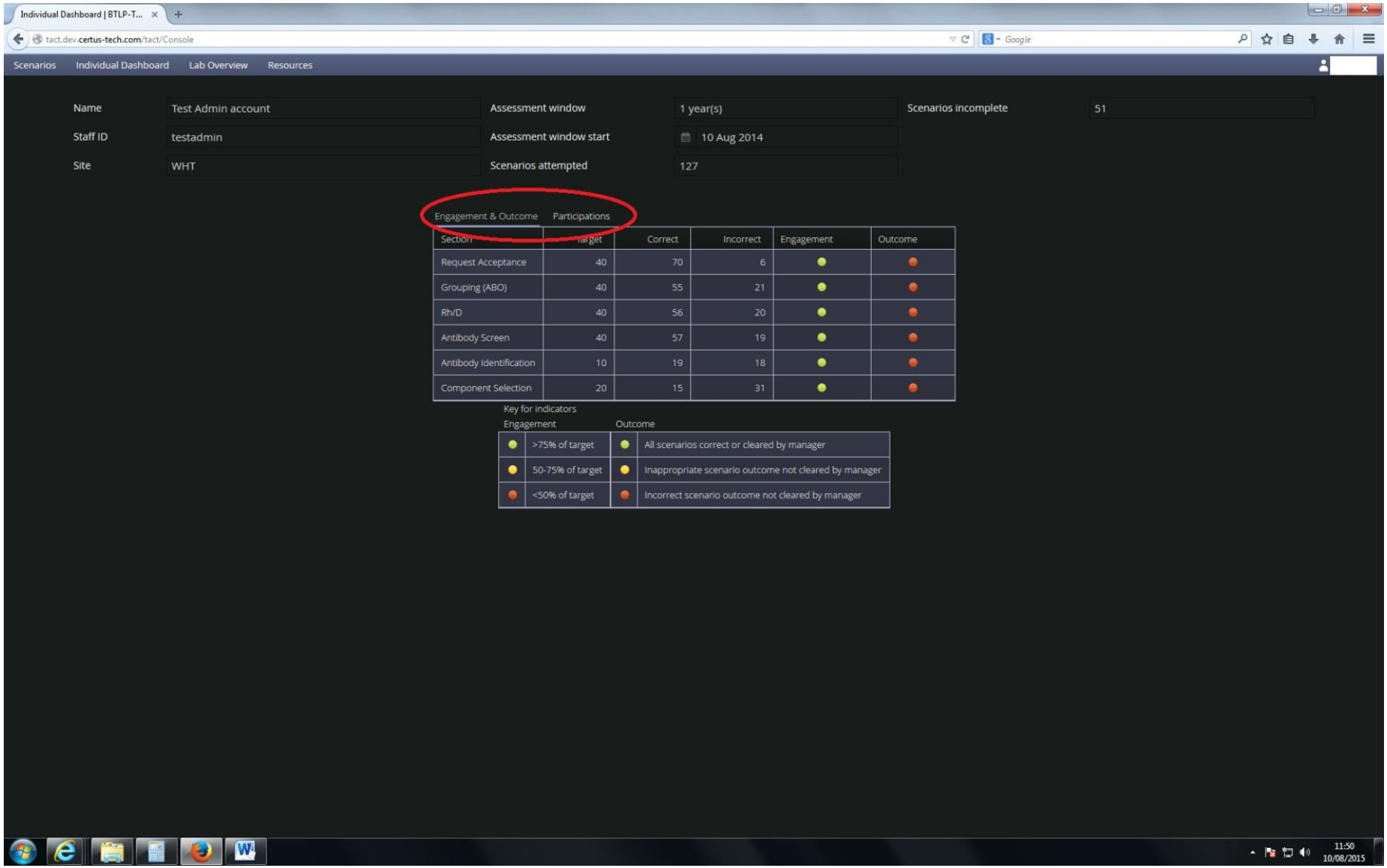
On behalf of the TACT team, UK NEQAS BTLP.

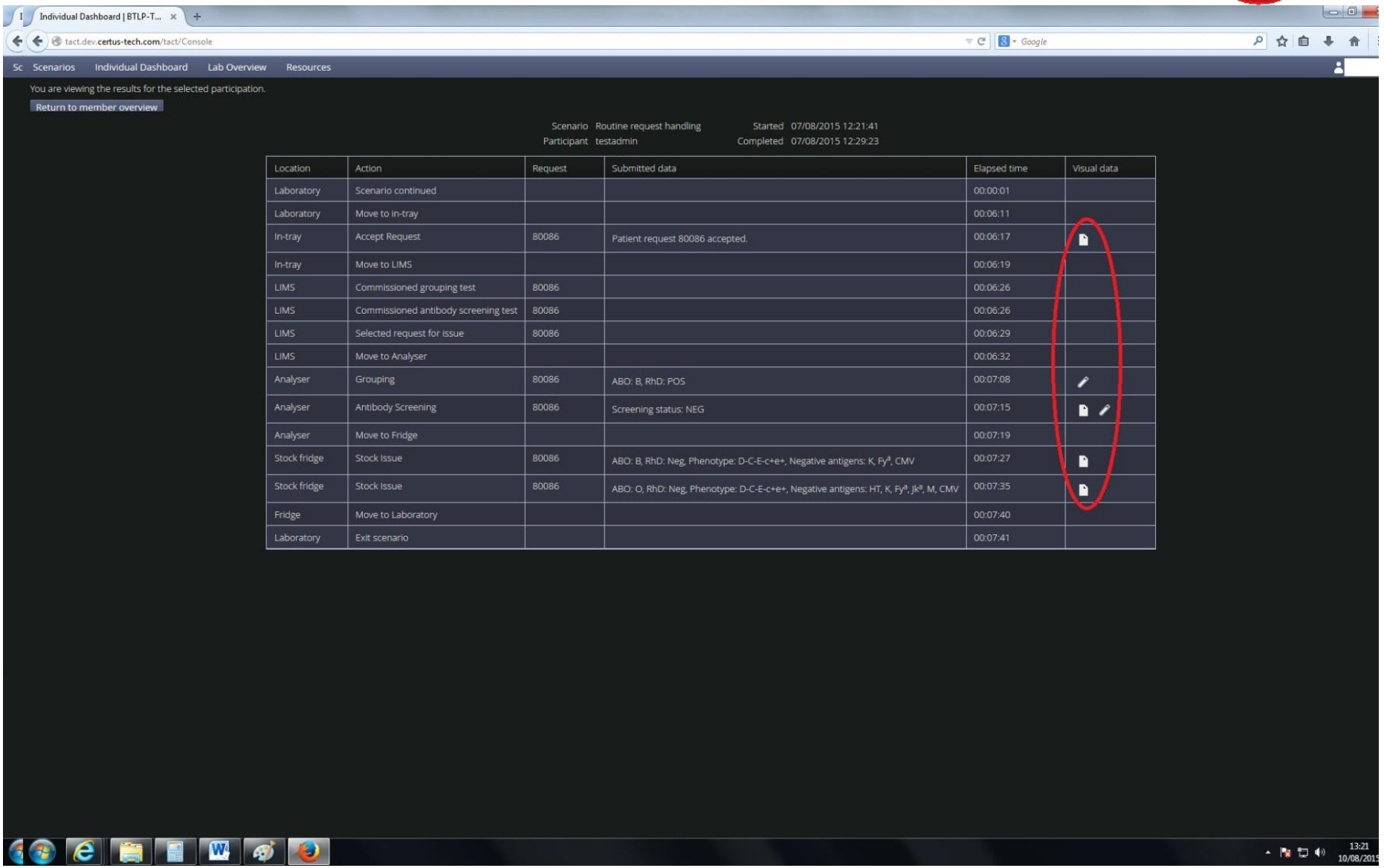
TACT Membership

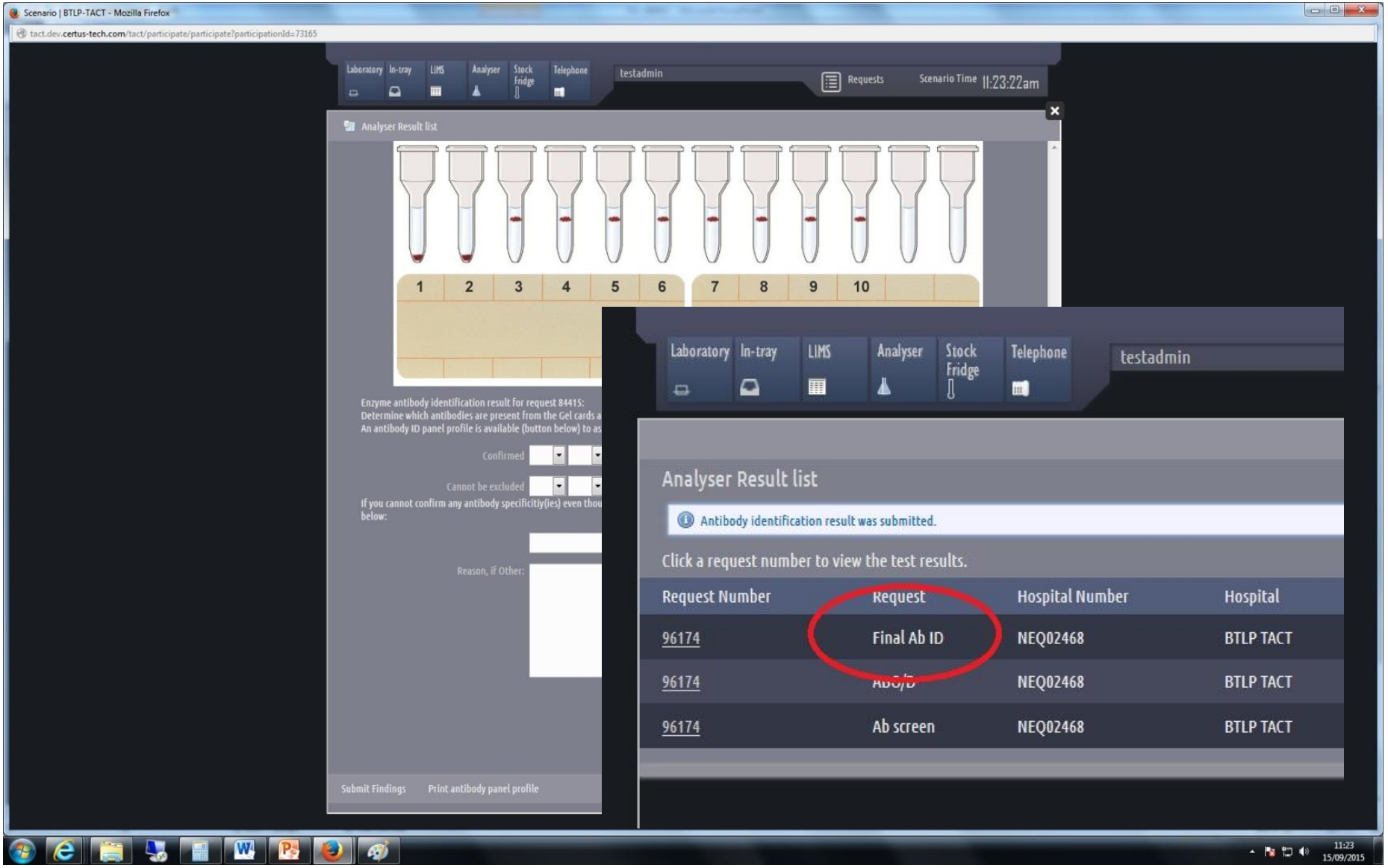
- As of 26/10/2015, TACT has more than 1400 members
- Funding is available for developments into the next financial year
- Cost of memberships can be incorporated into BTLP re-registration for 2015/2016
- Half price membership offered between 01/10/2015 to 31/03/2016

Recent developments

- Performance Dashboard enhancement
- Manager’s drill down review
- Enzyme panel functionality
- Final interpretation stage for antibody ID


Individual Dashboard | BTLP-T...
tact.dev.certus-tech.com/tact/Console
Scenarios
Individual Dashboard
Lab Overview
Resources
Name
Test Admin account
Staff ID
testadmin
Site
WHT
Assessment window
1 year(s)
Assessment window start
10 Aug 2014
Scenarios attempted
127
Scenarios incomplete
51
Engagement & Outcome
Participations
Section
Target
Correct
Incorrect
Engagement
Outcome
Request Acceptance 40 70 6
Grouping (ABO) 40 55 21
Rh/D 40 56 20
Antibody Screen 40 57 19
Antibody Identification 10 19 18
Component Selection 20 15 31
Key for indicators
Engagement
>75% of target
50-75% of target
<50% of target
Outcome
All scenarios correct or cleared by manager
Inappropriate scenario outcome not cleared by manager
Incorrect scenario outcome not cleared by manager
11:50
10/08/2015


Individual Dashboard | BTLP-T...
tact.dev.certus-tech.com/tact/Console
Google
Sc Scenarios Individual Dashboard Lab Overview Resources
You are viewing the results for the selected participation.
Return to member overview
Scenario Routine request handling
Participant testadmin
Started 07/08/2015 12:21:41
Completed 07/08/2015 12:29:23
Location | Action | Request | Submitted data | Elapsed time | Visual data
Laboratory | Scenario continued | | | 00:00:01 |
Laboratory | Move to in-tray | | | 00:06:11 |
In-tray | Accept Request | 80086 | Patient request 80086 accepted. | 00:06:17 |
In-tray | Move to LIMS | | | 00:06:19 |
LIMS | Commissioned grouping test | 80086 | | 00:06:26 |
LIMS | Commissioned antibody screening test | 80086 | | 00:06:26 |
LIMS | Selected request for issue | 80086 | | 00:06:29 |
LIMS | Move to Analyser | | | 00:06:32 |
Analyser | Grouping | 80086 | ABO: B, RhD: POS | 00:07:08 |
Analyser | Antibody Screening | 80086 | Screening status: NEG | 00:07:15 |
Analyser | Move to Fridge | | | 00:07:19 |
Stock fridge | Stock Issue | 80086 | ABO: B, RhD: Neg, Phenotype: D-C-E-c+e+, Negative antigens: K, Fy^a, CMV | 00:07:27 |
Stock fridge | Stock Issue | 80086 | ABO: O, RhD: Neg, Phenotype: D-C-E-c+e+, Negative antigens: HT, K, Fy^a, Jk^a, M, CMV | 00:07:35 |
Fridge | Move to Laboratory | | | 00:07:40 |
Laboratory | Exit scenario | | | 00:07:41 |
13:21
10/08/2015


Scenario | BTLP-TACT - Mozilla Firefox
tact.dev.certus-tech.com/tact/participate/participate?participationId=73165
Laboratory
In-tray
LIMS
Analyser
Stock Fridge
Telephone
testadmin
Requests
Scenario Time 11:23:22am
Analyser Result list
1 2 3 4 5 6 7 8 9 10
Enzyme antibody identification result for request 84415:
Determine which antibodies are present from the Gel cards a
An antibody ID panel profile is available (button below) to as
Confirmed
Cannot be excluded
If you cannot confirm any antibody specificity(ies) even thou
below:
Reason, if Other:
Submit Findings
Print antibody panel profile
Laboratory
In-tray
LIMS
Analyser
Stock Fridge
Telephone
testadmin
Analyser Result list
Antibody identification result was submitted.
Click a request number to view the test results.
Request Number
Request
Hospital Number
Hospital
96174
Final Ab ID
NEQ02468
BTLP TACT
96174
NEQ02468
BTLP TACT
96174
Ab screen
NEQ02468
BTLP TACT
11:23
15/09/2015

Future developments

- More ABO/D grouping anomalies
- Manager's ability to alter the outcome indicator where a red mark was awarded
- Increased variety and new combinations of antibody specificities
- Group check sample requesting
- Manual testing
- New scenario type – MH/emergency situation