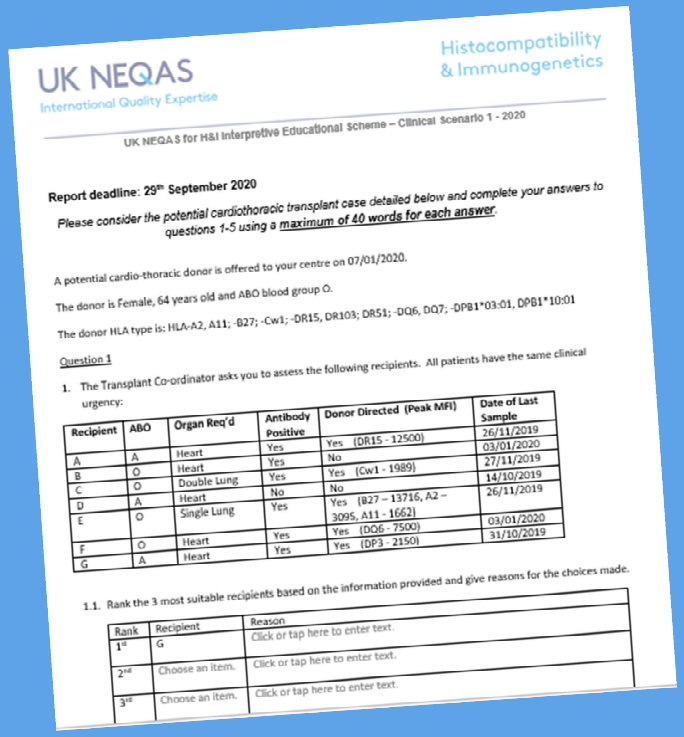
UK NEQAS Histocompatibility & Immunogenetics

UK NEQAS H&I

Educational Scheme (iED) Scenario 1: Solid Organ Scenario Feedback

@UKneqasHI
@UK_NEQAS

Our iED Schemes



UK NEQAS
International Quality Expertise

Histocompatibility & Immunogenetics

UK NEQAS for H&I Interpretive Educational Scheme – Clinical Scenario 1 - 2020

Report deadline: 29th September 2020

Please consider the potential cardiothoracic transplant case detailed below and complete your answers to questions 1-5 using a maximum of 40 words for each answer.

A potential cardio-thoracic donor is offered to your centre on 07/01/2020.

The donor is Female, 64 years old and ABO blood group O.

The donor HLA type is: HLA-A2, A11; -B27; -Cw1; -DR15, DR103; DR51; -DQ6, DQ7; -DPB1*03:01, DPB1*10:01

Question 1

1. The Transplant Co-ordinator asks you to assess the following recipients. All patients have the same clinical urgency:

Recipient	ABO	Organ Req'd	Antibody Positive	Donor Directed (Peak MFI)	Date of Last Sample
A	A	Heart	Yes	Yes (DR15 - 12500)	26/11/2019
B	O	Heart	Yes	No	03/01/2020
C	O	Double Lung	Yes	Yes (Cw1 - 1989)	27/11/2019
D	A	Heart	No	No	14/10/2019
E	O	Single Lung	Yes	Yes (B27 – 13716, A2 – 3095, A11 - 1662)	26/11/2019
F	O	Heart	Yes	Yes (DQ6 - 7500)	03/01/2020
G	A	Heart	Yes	Yes (DP3 - 2150)	31/10/2019

1.1. Rank the 3 most suitable recipients based on the information provided and give reasons for the choices made.

Rank	Recipient	Reason
1st	G	Click or tap here to enter text.
2nd	Choose an item.	Click or tap here to enter text.
3rd	Choose an item.	Click or tap here to enter text.

- 3 clinical scenarios a year
  - Solid organ, HSCT, platelet/transfusion
- Based on patient cases
  - Provide relevant clinical details and test results
  - Questions on interpretation of results and clinical advice
- Not assessed
- Provided free of charge

Solid Organ Scenarios

Year	Solid Organ Scenarios	Returns
2013	Live kidney transplant	46
2014	Deceased kidney transplant	50
2015	Cardiothoracic transplant	50
2016	Deceased donor virtual XM	50
2017	Cardiothoracic transplant	45
2018	Live kidney transplant	53
2019	Kidney after heart transplant	53
2020	Cardiothoracic transplant	45

- Dispatched on 1st June 2021
- 47 Responses
  - 18 from UK and Ireland (UK&I)
  - 29 from the Rest of the World (RoW)

Kidney Transplant Scenario

A 16 year old patient is referred to your centre in November 2020 for re-listing following the failure of his first kidney graft

- HLA type: HLA-A3, A11; B52, B57; Cw6, Cw12; DR7, DR15; DQ6, DQ9; DQA1*01:03, DQA1*02:01; DPB1*03:01, DPB1*09:01
- Blood group 

- The patient has a number of well defined HLA CII antibodies with MFI >10,000 consistently over the last 3 years

Antibody Specificity	MFI Range
DR4	1,000-2,000
DR12	1,000-2,000
DQ2	>10,000
DQ4	>10,000
DQ7	>10,000
DQ8	>10,000
DQA1*03	>10,000
DQA1*04	>10,000
DQA1*05	>10,000
DQA1*06	>10,000

First transplant from mother in 2008:

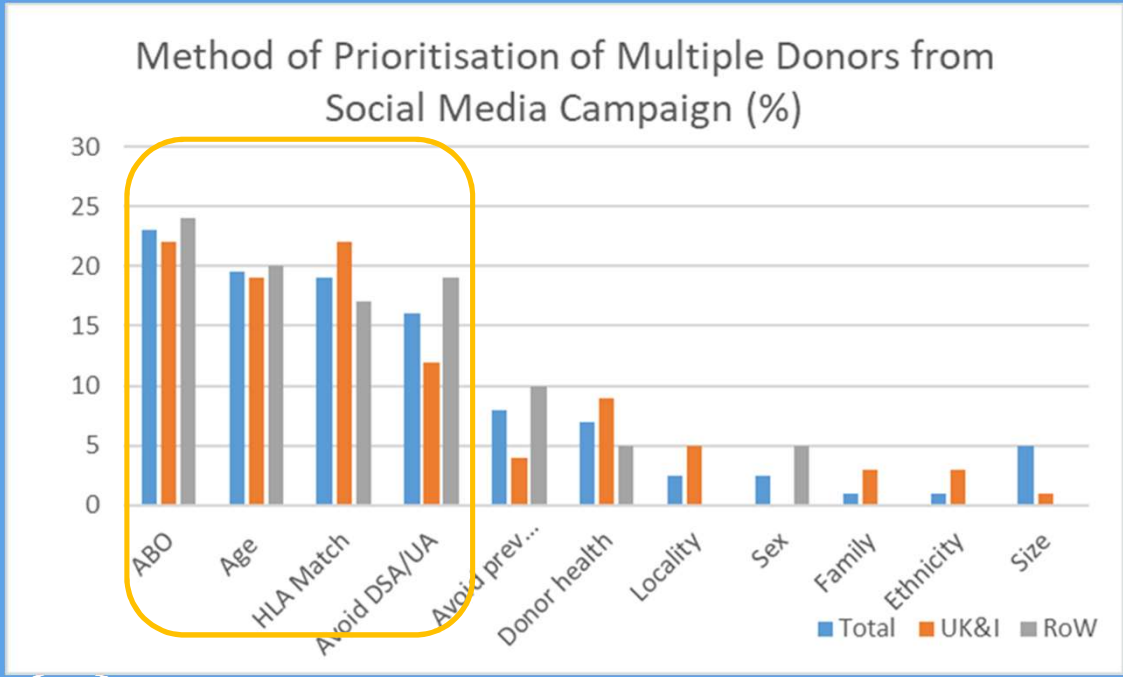
HLA type: HLA-A3, A11; B35, B57; Cw4, Cw6; DR7, DR8; DQ4, DQ9; DPB1*03:01, DPB1*04:02

Q1: Prioritising potential donors

- The family use a social media campaign to find a living donor and receive more than 20 enquiries. How would you prioritise testing on the potential donors?

Prioritise based on:	Total (%)	UK&I (%)	RoW (%)
ABO compatibility	**36 (23%)**	16 (22%)	20 (24%)
Age	**31 (19.5%)**	14 (19%)	17 (20%)
HLA Match	**30 (19%)**	16 (22%)	14 (17%)
Avoid DSA/UA	**25 (16%)**	9 (12%)	16 (19%)
Avoid previous mismatches	**12 (8%)**	3 (4%)	9 (10%)
Donor health	**11 (7%)**	7 (9%)	4 (5%)
Locality	**4 (2.5%)**	4 (5%)	0 (0%)
Sex	**4 (2.5%)**	0 (0%)	4 (5%)
Family	**2 (1%)**	2 (3%)	0 (0%)
Ethnicity	**2 (1%)**	2 (3%)	0 (0%)
Size	**1 (0.5%)**	1 (1%)	0 (0%)

Q1: Prioritising potential donors



Comments:
We would advise prioritising based on initial health screening, age, ABO O and A donors. Most donors are likely to be HLA incompatible so in the UK priority would be given to ABO O group donors to increase the likelihood of receiving a match in the UK Living Kidney Sharing Scheme.

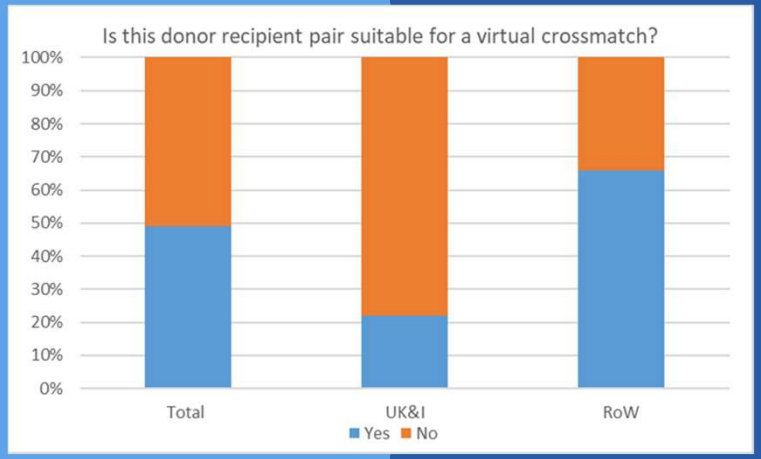
Q2: Is this Donor Recipient Pair Suitable for a Virtual Crossmatch?

In April 2021 you receive an end of chain donor offer

- Donor X
- 25 years old
- Male
- ABO O+
- HLA-A1, A33; B52, B58; Cw10, Cw12; DR14, DR15; DQ5, DQ6; DPB1*04:01, DPB1*14:01

YES

49%



NO

51%

Q2: Is this Donor Recipient Pair Suitable for a Virtual Crossmatch?

Response	Total (n=47)	UK&I (n=18)	RoW (n=29)	Selected Comments
Yes	**23 (49%)**	4 (22%)	19 (66%)	• Used at referral for compatibility assessment • Perform wet XM if donor proceeding to transplant • No apparent DSAs • ABO compatible • No repeat mismatches with previous transplant
No	**24 (51%)**	14 (78%)	10 (34%)	• Unknown donor HLA-DQA1 genotype and patient has DQA antibodies • Unclear how current antibody screening results are • High-level HLA Class II sensitisation • Previous transplant mismatches • Unclear when transfusion were given • A wet-XM is always used for live donors • Always perform a wet-XM on re-transplant patients

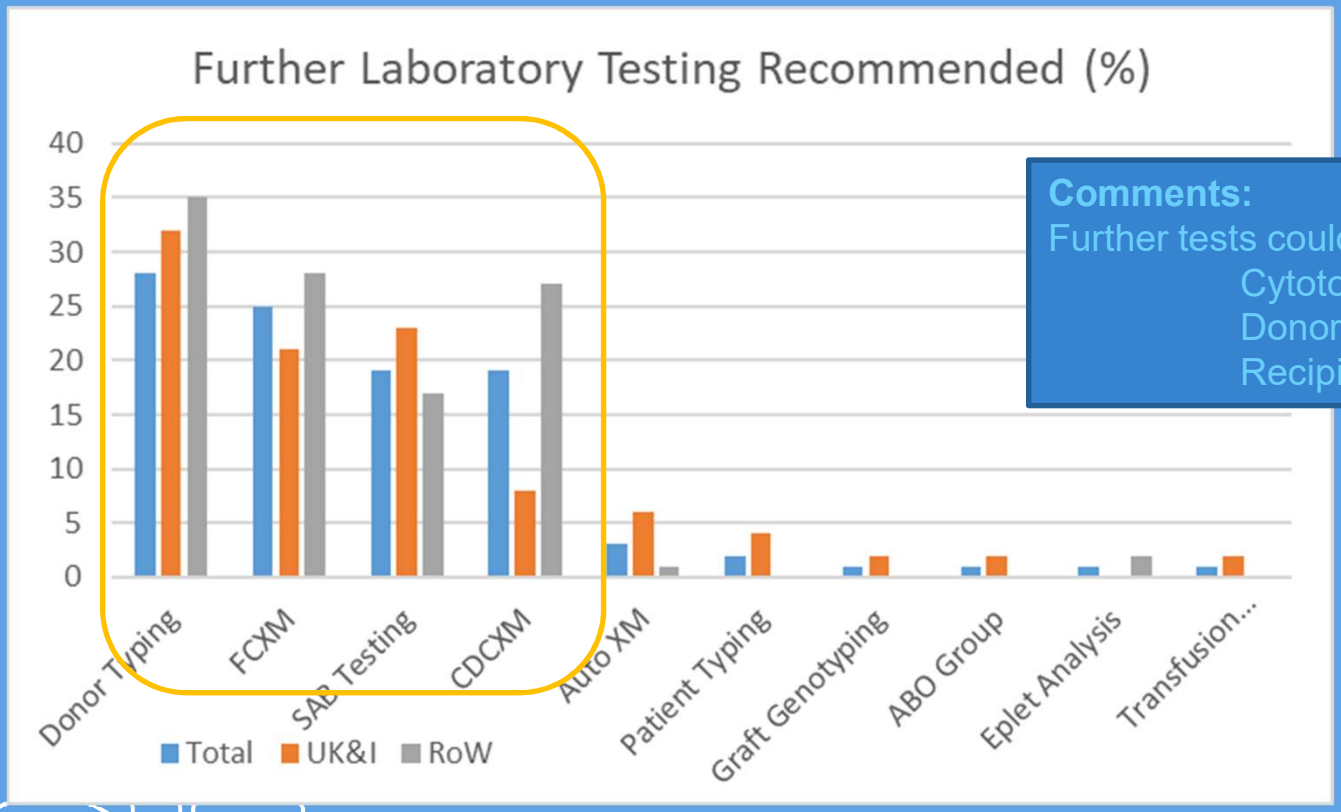
Comments:

We do not feel a virtual crossmatch i.e. the omission of any laboratory testing prior to transplant, is appropriate as there is insufficient HLA typing information to make a true a assessment of risk given the patient's sensitisation – the patient has DQA antibodies and the DQA type of the donor is not known.

Q2: What further laboratory tests would you recommend?

Further Testing Identified	Total (%)	UK&I (%)	RoW (%)
Donor Genotyping (DQA)	**35 (28%)**	17 (32%)	18 (25%)
Flow Cytometry Crossmatch	**31 (25%)**	11 (21%)	20 (28%)
Single Antigen Testing	**24 (19%)**	12 (23%)	12 (17%)
Cytotoxicity Crossmatch	**23 (19%)**	4 (8%)	19 (27%)
Autologous Crossmatch	**4 (3%)**	3 (6%)	1 (1%)
Patient Genotyping	**2 (2%)**	2 (4%)	0 (0%)
Previous Graft Genotyping	**1 (1%)**	1 (2%)	0 (0%)
ABO Group	**1 (1%)**	1 (2%)	0 (0%)
Eplet Analysis	**1 (1%)**	0 (0%)	1 (2%)
Confirm Transfusion Dates	**1 (1%)**	1 (2%)	0 (0%)

Q2: What further laboratory tests would you recommend?



Comments:

Further tests could include:

- Cytotoxic and flow crossmatching
- Donor verification typing
- Recipient antibody testing

Q3: What further tests are required to interpret the crossmatch results?

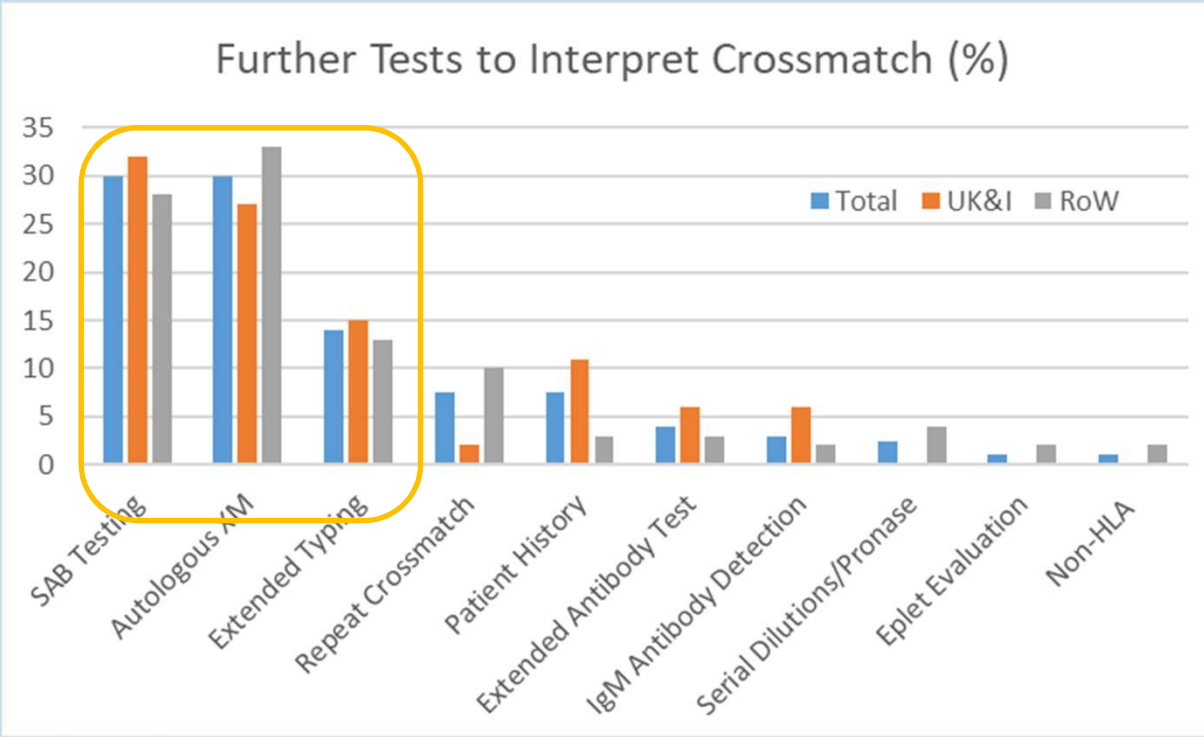
Results from CDC and flow cytometry crossmatch testing:

Serum Date	Cytotoxic Crossmatch				Flow Crossmatch	
	T cells	T cells with DTT	B cells	B cells with DTT	T cells Linear Channel Shift (LCS)	B cells Linear Channel Shift (LCS)
03/04/2008	1	1	1	1	2	0
11/04/2008	1	1	1	1	4	6
08/09/2014	1	1	6	1	0	0
01/08/2016	1	1	1	1	0	0
01/10/2018	1	1	1	1	0	0
12/08/2019	1	1	1	1	0	0
11/05/2020	1	1	1	1	0	0
14/04/2021	1	1	1	1	0	94

Q3: What further tests are required to interpret the crossmatch results?

Further Testing	Total (%)	UK&I (%)	Row (%)
Single Antigen Antibody Testing	**36 (30%)**	17 (32%)	19 (28%)
Autologous Crossmatch	**36 (30%)**	14 (27%)	22 (33%)
Extended Genotyping e.g. DQA, DRB3/4/5	**17 (14%)**	8 (15%)	9 (13%)
Repeat Crossmatch	**8 (7.5%)**	1 (2%)	7 (10%)
Patient Sensitisation History	**8 (7.5%)**	6 (11%)	2 (3%)
Extended Antibody Panel/Second Kit	**5 (4%)**	3 (6%)	2 (3%)
IgM Antibody Detection	**4 (3%)**	3 (6%)	1 (2%)
Serial Dilutions/Pronase Crossmatch	**3 (2.5%)**	0	3 (4%)
Eplet Evaluation	**1 (1%)**	0	1 (2%)
Non-HLA Antibody Dectection	**1 (1%)**	0	1 (2%)

Q3: What further tests are required to interpret the crossmatch results?



Comments:

Further tests required to interpret the crossmatch results could include verification of the donor HLA type including DQA and DPA genotyping.

We would suggest that sera dated 08/09/2014 could to be investigated for the presence of IgM alloantibodies as the CDC positive reaction was reduced by DTT.

We would also suggest that sera dated 14/04/2021 could be investigated for IgG alloantibodies due to the positive FCXM result.

Q4: Further information

The donor HLA type was verified:

Locus	**Donor Genotype:** Alpha Biotech QTYPE HLA Typing kit		Serological Equivalent
HLA-A	A*01	A*33:03	A1 A33
HLA-B	B*52	B*58	B52 B58 Bw4
HLA-C	C*03	C*12:02	Cw10 Undefined
HLA-DRB1	DRB1*14	DRB1*15:02	DR1404 DR15
HLA-DRB3/4/5	DRB3*02	DRB5*01	DR52 DR51
HLA-DQA1	DQA1*01:03	DQA1*01:04	
HLA-DQB1	DQB1*05:03	DQB1*06:01	DQ5 DQ6
HLA-DPA1	DPA1*02:01	DPA1*02:07	
HLA-DPB1	DPB1*04:01	DPB1*14:01	

11/05/2021
14/04/2021
negative autologous crossmatch

Serum Date	Cytotoxic Crossmatch				Flow Crossmatch	
	T cells	T cells with DTT	B cells	B cells with DTT	T cells Linear Channel Shift (LCS)	B cells Linear Channel Shift (LCS)
03/04/2008	1	1	1	1	2	0
11/04/2008	1	1	1	1	4	6
08/09/2014	1	1	6	1	0	0
01/08/2016	1	1	1	1	0	0
01/10/2018	1	1	1	1	0	0
12/08/2019	1	1	1	1	0	0
11/05/2020	1	1	1	1	0	0
14/04/2021	1	1	1	1	0	94

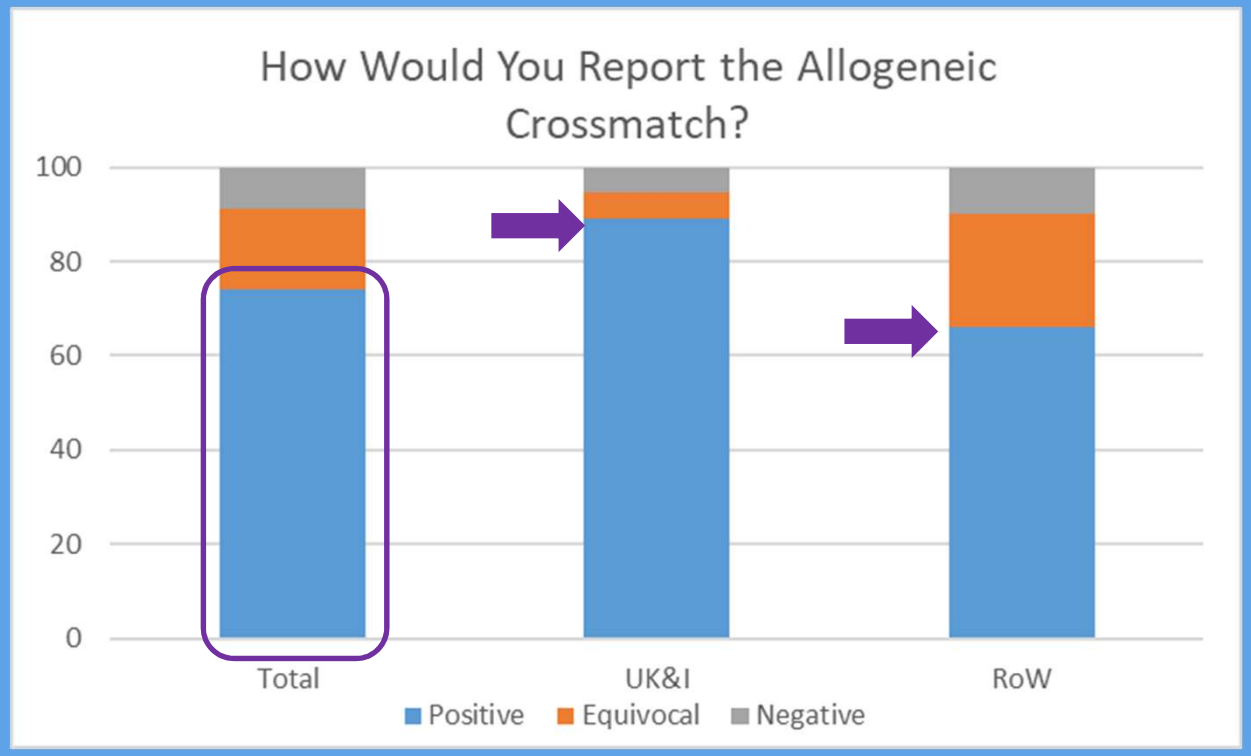
08/09/2014 tested negative for the presence of IgM alloantibody

14/04/2021 tested using One Lambda single antigen...

Q4: Further in

Donor Type	One Lambda Single Antigen 14/04/2021 (MFI)
A*01	Negative
A*33:03	
B*52	
B*58	
C*03 (Cw10)	
C*12:02	
DRB1*14 (DR1404)	DRB1*14:01 - **1525** DRB1*14:54 - 987
DRB1*15:02	<500
DRB3*02 (DR52)	<1,000
DRB5*01 (DR51)	<1,000
DQA1*01:03	<500
DQA1*01:04	*No bead*
DQB1*05:03	*No bead* DQB1*05:02 - **2638**
DQB1*06:01	<500
DPA1*02:01	DPA1*02:01 – **1518 (1 of 10)**
DPA1*02:07	*No bead*
DPB1*04:01	DPB1*04:01 - **2102**
DPB1*14:01	<500

Q4: How would you report the crossmatch?



Q4: How would you report the crossmatch?

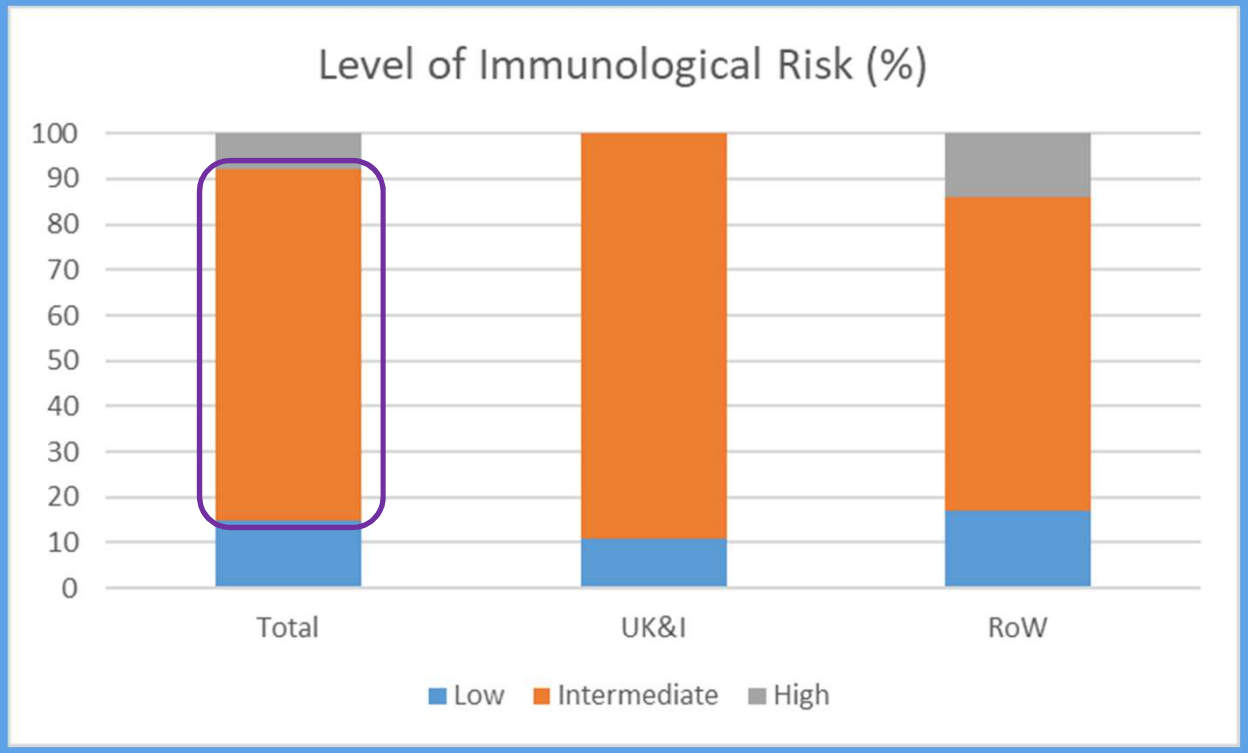
Response	Total (%)	UK&I (%)	RoW (%)	Reasons
Positive	**35 (74%)**	16 (89%)	19 (66%)	• B cell positive, T cell negative crossmatch. • Autologous crossmatch negative. • DR14 bead weak positive. • DPB1*04:01 bead positive. • Potential reactivity against DQ5. • Some donor alleles not present on antibody panel. • DRB1*14:04 shares a potential epitope with previous transplant mismatch DR8 (Y@aa16). DR8 positive in 14/04/21 • Cumulative DSA of 6,132 MFI.
Equivocal	**8 (17%)**	1 (5.5%)	7 (24%)	• Positive flow cytometric crossmatch in the absence of detectable HLA antibody. • CDC crossmatch negative but DSA to DPB1*04:01. • Some donor alleles not present on antibody panel. • DRB1*14:01, DPB1*04:01, DPA1*02:01 and DRB3*02 beads positive.
Negative	**4 (9%)**	1 (5.5%)	3 (10%)	• CDC crossmatch negative. • Not a DSA from previous transplant. • Potential DSAs but low MFI level would not suggest a positive FCXM. • Not all positive B cell XM are clinically relevant. • Unspecific reaction.

Q4: How would you report the crossmatch?

Comments:
This crossmatch was classified as positive due to the positive flow cytometry B cell result in the current sample.

There is also a potential DPB1*04:01 donor specific antibody but the MFI of the antibody is not consistent with the positive linear channel shift of the flow crossmatch.

Q4: What level of immunological risk would you assign to this transplant?



Q4: What level of immunological risk would you assign to this transplant?

Response	Total (%)	UK&I (%)	RoW (%)	Reasons
Low/Standard	**7 (15%)**	2 (11%)	5 (17%)	• No DSA. • T and B cell negative crossmatch, DSA positive. • Low MFI <5000.
Intermediate	**36 (77%)**	16 (89%)	20 (69%)	• CDC crossmatch negative. • Flow cytometry crossmatch B cell positive (latest sample tested). • Potential for IgG Class II donor-specific antibody. • DRB1*14:04 not represented on standard One Lambda Single Antigen panel. • Unexplained positive crossmatch. • Shared eplets with previous transplant. • Second transplant. • Risk of antibody mediated rejection post-transplant.
High	**4 (8%)**	0	4 (14%)	• Immunised patient. • Previous transplant and transfusions. • Positive crossmatch

Q4: What level of immunological risk would you assign to this transplant?

Comments:
Using the current BSHI/BTS guidelines (https://bshi.org.uk/wp-content/uploads/2019/05/BSHI_BTS_Ab_Guidelines_Revision_June_2014.pdf) this would probably be classified as Intermediate Risk transplant (a positive FCXM in current sample with a potential DPB1*04:01 donor specific antibody HOWEVER the MFI of this antibody is not consistent with the positive linear channel shift of the flow crossmatch).

The DQA typing has ruled out FCXM reactivity due to DQA antibodies that the patient was known to have.
HOWEVER, the allele level typing reveals the donor is DRB1*14:04 and there is no cognate bead on the LABScreen panel.

Q5: Further testing

The latest serum sample was also tested using Lifecodes Single Antigen:

Donor Type	Lifecodes Single Antigen 14/04/2021 (MFI)	One Lambda Single Antigen 14/04/2021 (MFI)
A*01	<500	Negative
A*33:03	<500	
B*52	<500	
B*58	<500	
C*03 (Cw10)	<500	
C*12:02	<500	
DRB1*14 (DR1404)	**3610**	*No bead* DRB1*14:01 - **1525** DRB1*14:54 - 987
DRB1*15:02	<500	<500
DRB3*02 (DR52)	<500	<1,000
DRB5*01 (DR51)	<500	<1,000
DQA1*01:03	<500	<500
DQA1*01:04	<500	*No bead*
DQB1*05:03	<500	*No bead* DQB1*05:02 - **2638**
DQB1*06:01	<500	<500
DPA1*02:01	<500	DPA1*02:01 – **1518 (1 of 10)**
DPA1*02:07	*No bead*	*No bead*
DPB1*04:01	<500	DPB1*04:01 - **2102**
DPB1*14:01	<500	<500

Q5:Do the Lifecodes Results Change Your Interpretation of the Crossmatch?

YES

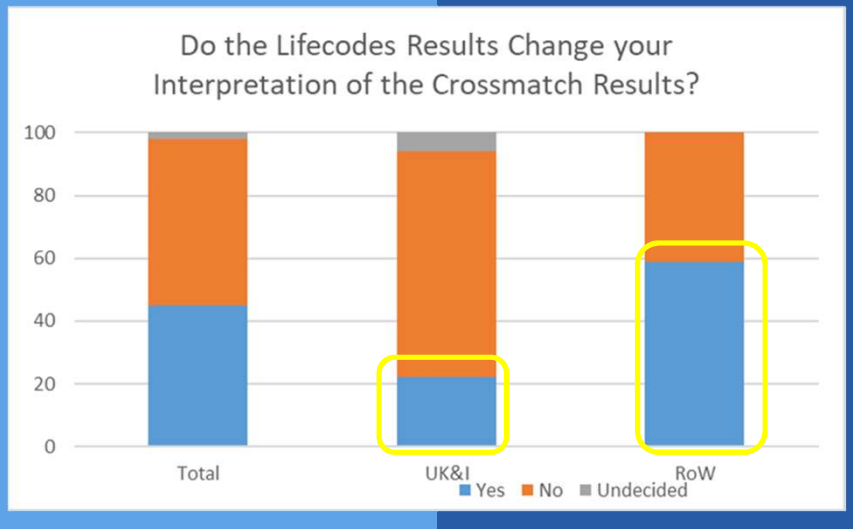
45%

?

2%

NO

53%

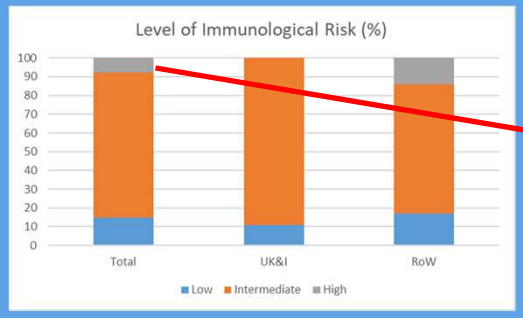


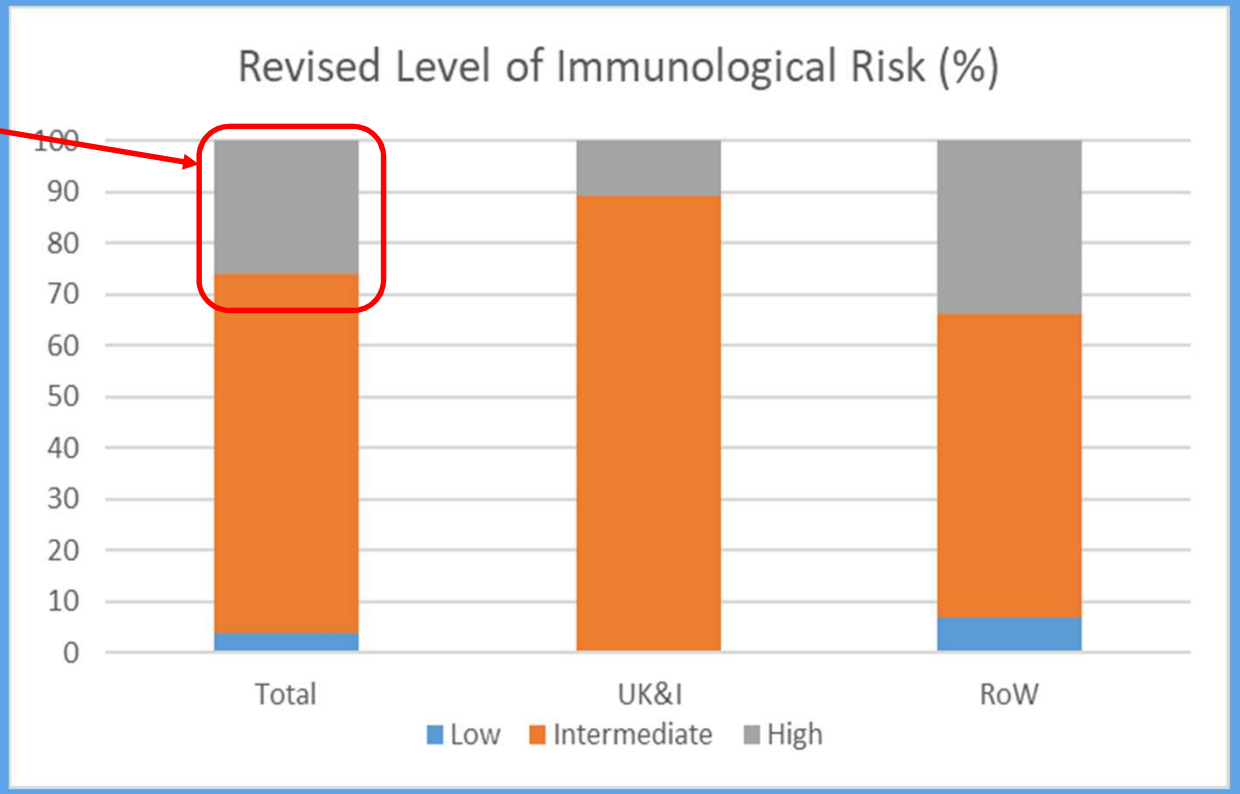
Q5:Do the Lifecodes Results Change Your Interpretation of the Crossmatch?

Comments:
NEQAS would change their original interpretation in response to these results

Response	Total (%)	UK&I (%)	RoW (%)	Reasons
Yes	**21 (45%)**	4 (22%)	17 (59%)	• HLA-DRB1*14:04 DSA at MFI of 3610 explains positive B cell crossmatch. • HLA incompatible. • HLA-DPB1*04:01 negative on Lifecodes, potential false positive on One Lambda. • As DPB1*04:01 negative, crossmatch positivity possibly due to non-HLA.
No	**25 (53%)**	13 (72%)	12 (41%)	• Results are supportive of a positive crossmatch. • The already suspected presence of a DRB1*14:04 donor specific antibody has been confirmed. • DRB1*14:04, DPA1*02:07 and DQB1*05:03 donor alleles are not present on the One Lambda panel but are present in the Immucor kit. • Lifecodes results suggest antibody against epitope 16Y.
Undecided	**1 (2%)**	1 (6%)	0	• Further investigation required to determine whether the DRB1*14:04 antibody is only present in the sera causing the positive crossmatch and repeat crossmatch.

Q5: What Level of Immunological Risk Would You Now Assign?





Q5: What Level of Immunological Risk Would You Now Assign?

Response	Total (%)	UK&I (%)	RoW (%)	Reasons
Low/Standard	**2 (4%)**	0	2 (7%)	• MFI <5,000. • No DSA detected, only potential weak DPA1 antibodies.
Intermediate	**33 (70%)**	16 (89%)	17 (59%)	• HLA-DR donor specific antibody. • CDCXM negative. • FCXMT cell negative, B cell positive. • DSA (CII IgG) present at time of transplant. • DSA has low MFI. • Risk of antibody mediated rejection post-transplant. • Oversensitivity not noted in Lifecodes test makes antibodies detected by this kit more clinically relevant. • Non-HLA antibodies.
High	**12 (26%)**	2 (11%)	10 (34%)	• Highly immunised patient. • Re-transplant. • Positive B cell FCXM with circulating DSA. • Donor DPA1*02:07 not represented on single antigen panels.

Q5: What Level of Immunological Risk Would You Now Assign?

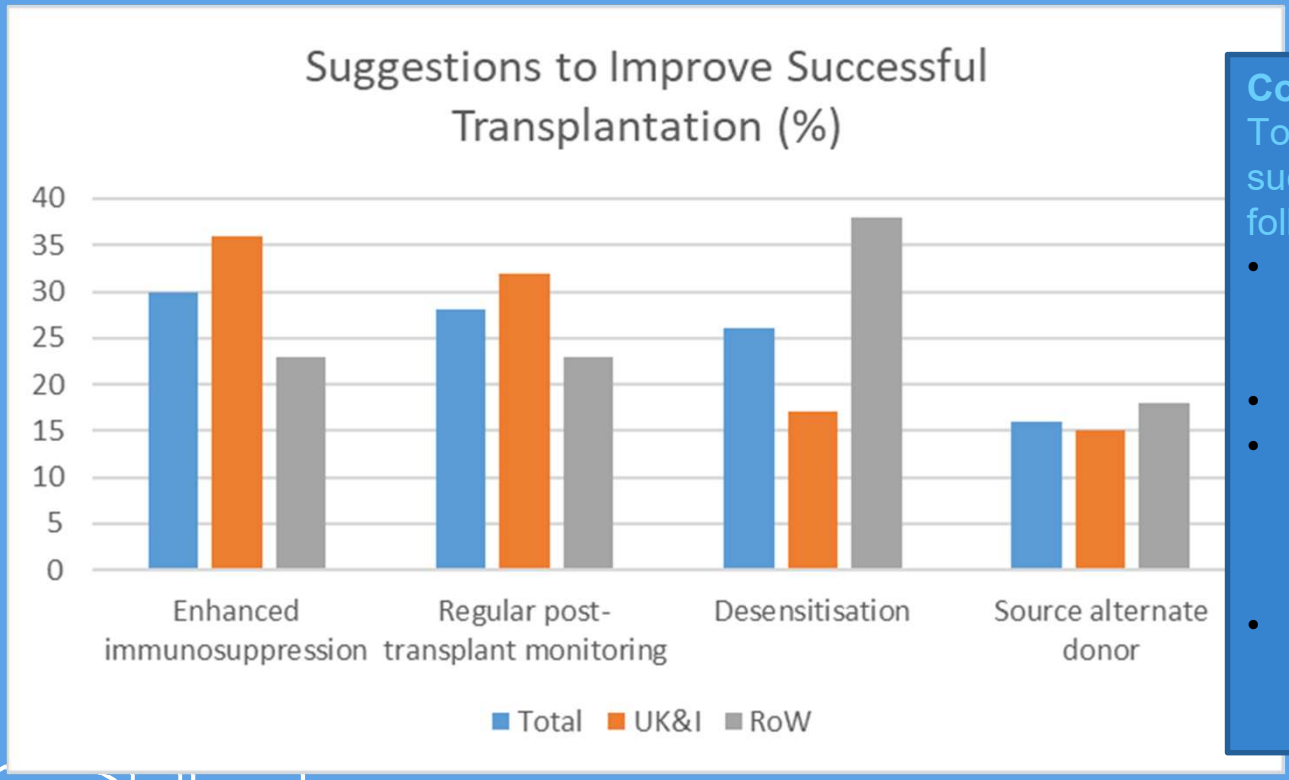
Comments:
We concluded that the Lifecodes results do change the interpretation of the crossmatch as the presence of a DRB1*14:04 bead on the Lifecodes panel has enabled the detection of a donor directed antibody.

Local experience with the Lifecodes Single Antigen assay has shown that the MFI values are generally much lower than those in the One Lambda assay. From our testing the MFI level of the DRB1*14:04 bead could equate to a positive B cell FCXM. We therefore concluded that the FCXM was positive due to donor directed antibody. Following the BSHI/BTS guidelines a positive flow cytometry crossmatch in a current sample due to IgG HLA class II antibody is classed as Intermediate Risk.

Q5: Increasing the Chance of Transplant

Further Testing Identified	Total (%)	UK&I (%)	RoW (%)
Enhanced immunosuppression	**26 (30%)**	17 (36%)	9 (23%)
Regular post-transplant monitoring	**24 (28%)**	15 (32%)	9 (23%)
Desensitisation	**22 (26%)**	8 (17%)	14 (36%)
Source alternate donor	**14 (16%)**	7 (15%)	7 (18%)

Q5: Increasing the Chance of Transplant



Comments:

To increase the chances of successful transplant we suggest the following:

- Enhanced immunosuppression including induction therapy.
- Desensitisation.
- Post plasma exchange antibody screening to assess the effect of the treatment on antibody titre.
- Regular post-transplant DSA monitoring.

Q6: Potential Live Donor, Donor Y

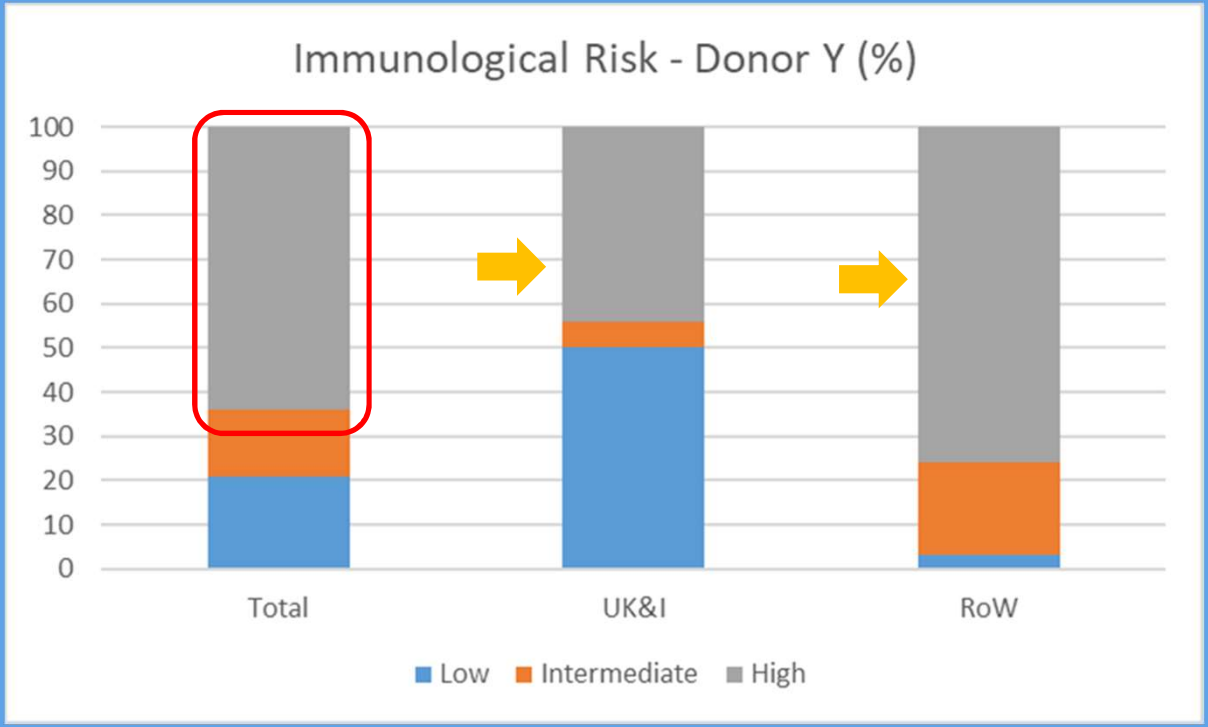
Donor Y, a 24 year old male, was identified from the social media campaign and deemed medically fit to donate:

- HLA type: HLA-A2, A29; B44, B57; Cw6, Cw16; DR7, DR17; DQ2, DQ9; DQA1*02, DQA1*05; DPB1*04:01, DPB1*20:01
- Blood group O+
- A cytotoxic and flow cytometry crossmatch was negative

Q6: Potential Live Donor, Donor Y

Donor Y Type	Historic Levels (MFI)	Lifecodes Single Antigen 14/04/2021 (MFI)	One Lambda Single Antigen 14/04/2021 (MFI)
A2	Negative	<500	Negative
A29		<500	
B44		<500	
B57		<500	
Cw6		<500	
Cw16		<500	
DR7	Negative	<500	<500
DR17	Negative	<1000	<1000
DR52	Negative	<500	<1000
DR53	Negative	<500	<500
DQA1*02	Negative	**3141**-163	**6864**-<500
DQA1*05	**>10,000**	**24523-18088**	**29895-28305**
DQ2	**>10,000**	**19293-11813**	**29895**-<1000
DQ9	Negative	**24293-22206**	**23975-13398**
DPB1*04:01	Negative	<500	**2102**
DPB1*20:01	Negative	*No bead*	<500

Q6: What Level of Immunological Risk Would You Assign?



Q6: What Level of Immunological Risk Would You Assign?

Risk Level	Total (%)	UK&I (%)	RoW (%)	Reasons
Low/Standard	**10 (21%)**	9 (50%)	1 (3%)	• FCXM negative. • Potential DSA. • DQA antibodies (allele type of donor not known). • DQA1*05 shares epitope with DQA1*04 (mismatch from previous transplant). • Clinical relevance of DQA DSA questionable.
Intermediate	**7 (15%)**	1 (6%)	6 (21%)	• Negative crossmatch. • Presence of DSA (DQ2 and DQA1*05). • Potential for antibody mediated rejection.
High	**30 (64%)**	8 (44%)	22 (76%)	• Crossmatch negative but potential prozone effect. • DQ, DQA and DPB1*04:01 DSA with high MFI. • Poor local experience of transplant across DQ antibodies. • Patient sensitisation history. • Risk of antibody mediated rejection.

Q6: What Level of Immunological Risk Would You Assign?

Comments:
This scenario presents a negative crossmatch with detectable donor specific antibodies to HLA-DQ2, DQA1*05 in both One Lambda and Lifecodes kits and a possible DPB1*04:01 antibody positive only in the One Lambda assay. There is also reactivity to DQ9 (a self-antigen) that is potentially due to a DQA antibody but requires further investigation. We would consider repeating the crossmatch to verify the negative result. Also it could be informative to perform third party testing against other cells expressing DQ2 and DQA1*05.

We would consider this Intermediate immunological risk. Local experiences have noted crossmatch negative results in cases where DQ antibodies with high MFI values have been present.

Q6: Which Donor Would You Select?

X

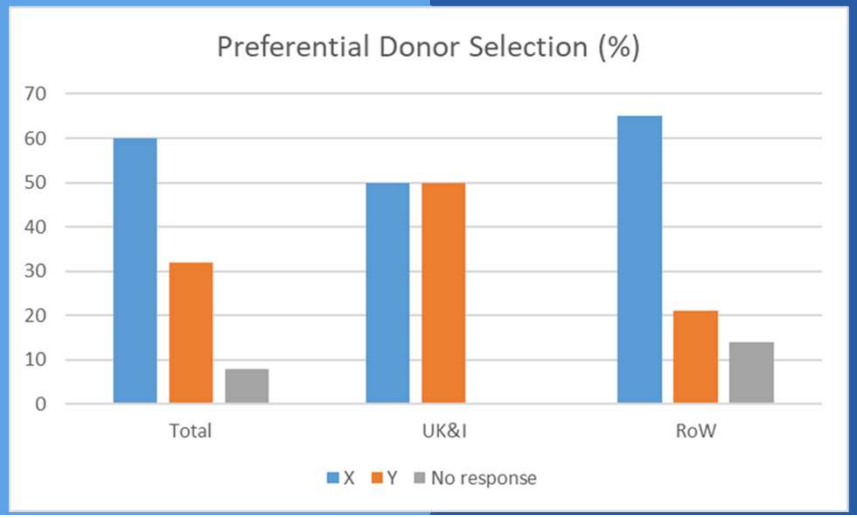
60%

?

8%

Y

32%

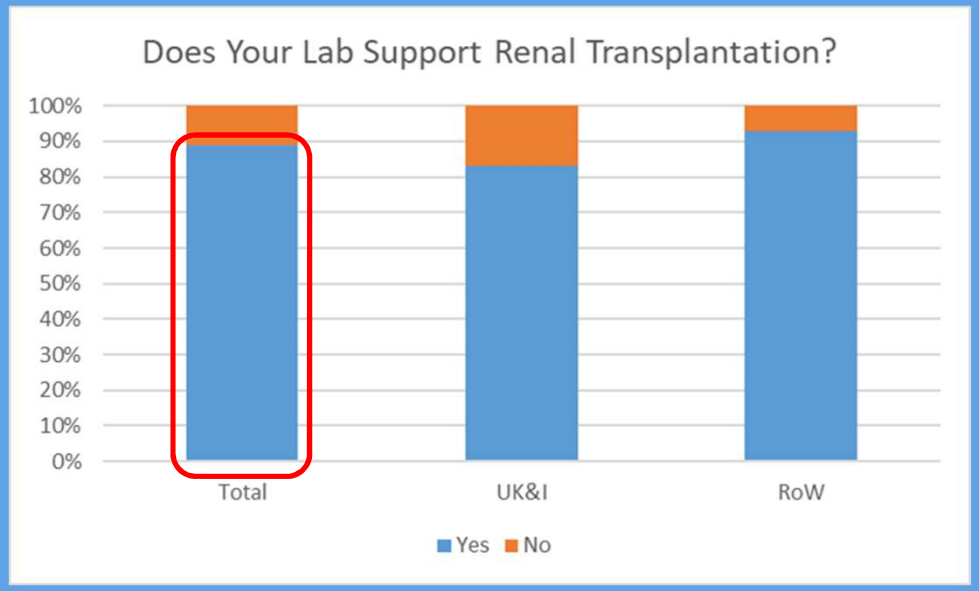


Q6: Which Donor Would You Select?

Response	Total (%)	UK&I (%)	RoW (%)	Reasons
Donor X	**28 (60%)**	9 (50%)	19 (65%)	• DSA present but <5,000 MFI. • No DSA. • Better HLA compatibility - less impact on finding future donors for paediatric patient (Donor Y A2 mismatch). • CDC crossmatch negative. • Can utilise pre-transplant desensitisation. • Questionable validity of crossmatch results for Donor Y.
Donor Y	**15 (32%)**	9 (50%)	6 (21%)	• Negative crossmatch. • No donor chain. • DQA DSA not clinically significant. • Detected antibodies may not be complement binding. • Crossmatch more indicative of donor antigen expression than single antigen testing.
No response	**4 (8%)**	0	4 (14%)	• Neither donor suitable. • DSA to both donors. • Need further testing to assess suitability.

Q7: Does your centre support renal transplantation?

Response	Total (%)	UK&I (%)	RoW (%)
Yes	**42 (89%)**	15 (83%)	27 (93%)
No	**5 (11%)**	3 (17%)	2 (7%)



Further Comments

► Crossmatching of Donor Y would not have been performed by our centre due to potential DSA to the HLA-DQA1*05:01 beads at such a strong level.

► DQA1 type the mother that was the donor from the previous transplant to determine whether patient's DQA1 antibodies are donor-specific.

► Donor X is not standard risk but is not contraindicated. Donor Y has a Negative crossmatch which should make them standard risk but the negative crossmatch result needs to be explained possibly using high resolution HLA typing. The donor Y crossmatch needs to be repeated before the level of risk can be ascertained.

► DSA anti HLA-DQA1*05:01 may not cytotoxic (based on negative Flow and CDC crossmatch) but we wouldn't risk such a transplant with Single Antigen based strong DSA in our Center.

► A positive FXCM with very low titre donor-specific HLA antibodies could also imply the presence of non-HLA antibodies - a negative FXCM with DSA (MFI >25000) then seems quite implausible.

► Our laboratory does not use LifeCodes so we are unfamiliar with cut-offs and therefore interpreting results is difficult.

Further Comments

► Good case highlighting value of analysing epitopes, high resolution extended typing and use of multiple different commercial kits.

► Social media campaign to find a living donor is forbidden in our country.

► We would recommend continued search for a live donor for this patient, either for direct transplantation or entry into the national sharing scheme.

► Would have been good to know the following about the patient: diagnosis; cause of transplant failure; whether allograft has been removed; if patient remained on immunosuppression after graft failure (in relation to serum sample dates); what transfusions were given and when.

► These transplant situations would require extensive discussions with the clinical team. The paediatric patient will require multiple future transplants and an effort ought to be made to minimise additional sensitisation.

Follow Up

- In the real life case that this scenario was based on Donor X was being assessed as the potential donor. Donor Y was a fictious addition.
- At the point where it was determined that the B cell flow crossmatch was positive due to an HLA-DRB1*14:04 allele specific DSA defined by Lifecodes assay the case was discussed with the clinical team.
- The clinical team felt the patient's chance of a transplant was severely limited by the breadth of his class II sensitisation and therefore, following discussion with the family, the decision was made to proceed with a transplant from Donor X.
- The patient had two sessions of plasma exchange and Ivlg the day before the transplant. The surgery went ahead and 3 months post-transplant the patient is very well. His current SCr is 72 and the MFI of the donor directed DRB1*14:04 bead in the Lifecodes assay is currently below the test cut off at 424.

Thanks!

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