

Update on National Highly Sensitized Program (HSP)

BC Kidney Days

Oct 24 2013

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Highly Sensitized Patients

- Currently almost 30% of patients on the active waiting list have cPRA of over 95%
- These patients receive less than 2% of the deceased donor kidneys transplanted

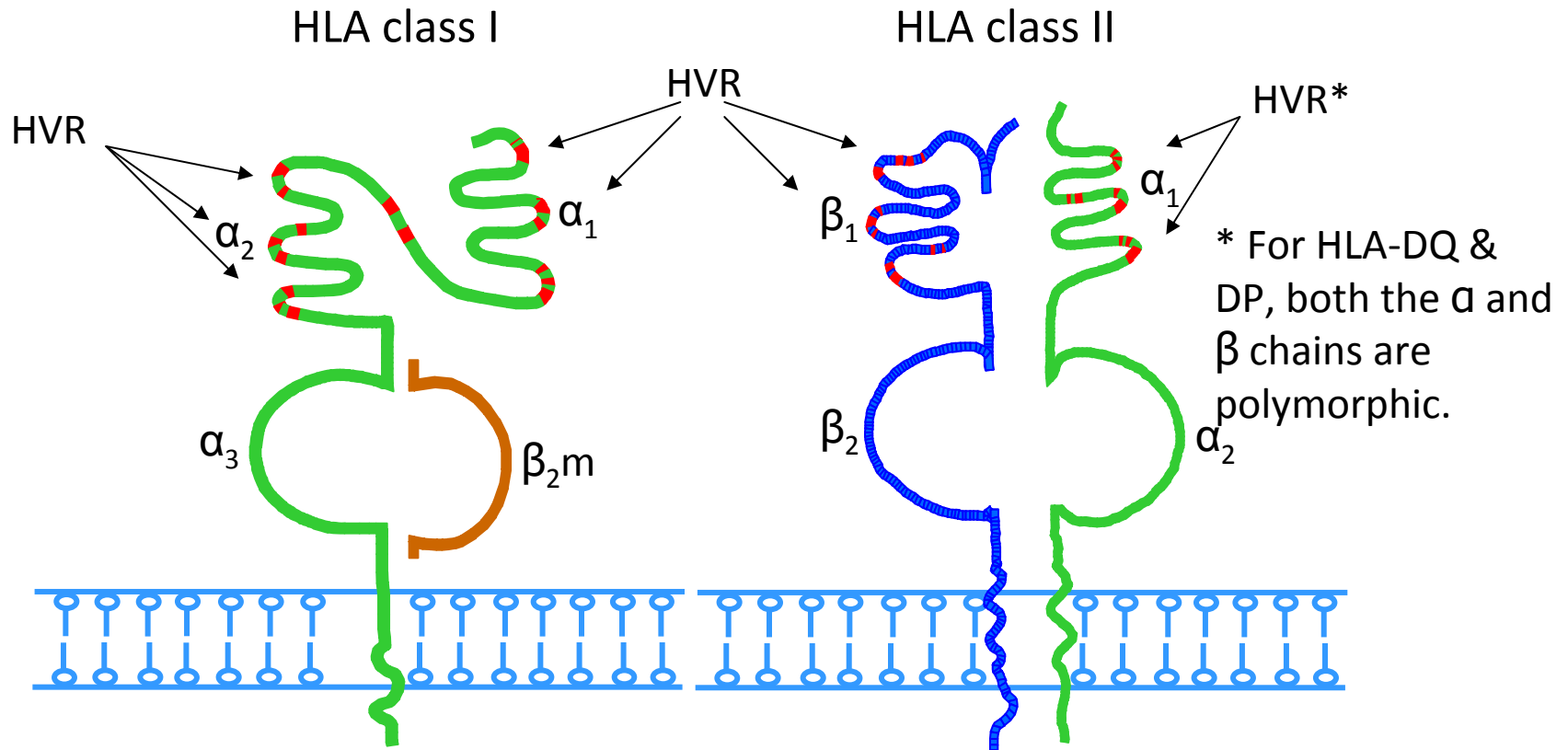
Increasing Transplant Options For Highly Sensitized Patients

- HSP
- LDPE
- Desensitization

Sensitization

- Blood Transfusions
- Pregnancy
- Previous Transplants

Target Sequences for HLA Typing



Typing targets polymorphic or hypervariable regions (HVR) that occur largely in the exons encoding the protein domains that form the peptide binding sites:

- For HLA class I, exons 2 and 3 of the heavy chain genes
- For HLA class II, exon 2 of the alpha and beta chains

HLA Nomenclature

Distinguishes Between Antigen and Allele Level Typing

Antigen Level

Based on Serologic Specificity

HLA- A2
HLA- B7
HLA-Cw8
HLA-DR4
HLA-DR52
HLA-DQ5

Allele Level

Based on DNA Sequence

DRB1*0401

Locus

Allele

Serologic Equivalent
(if known)

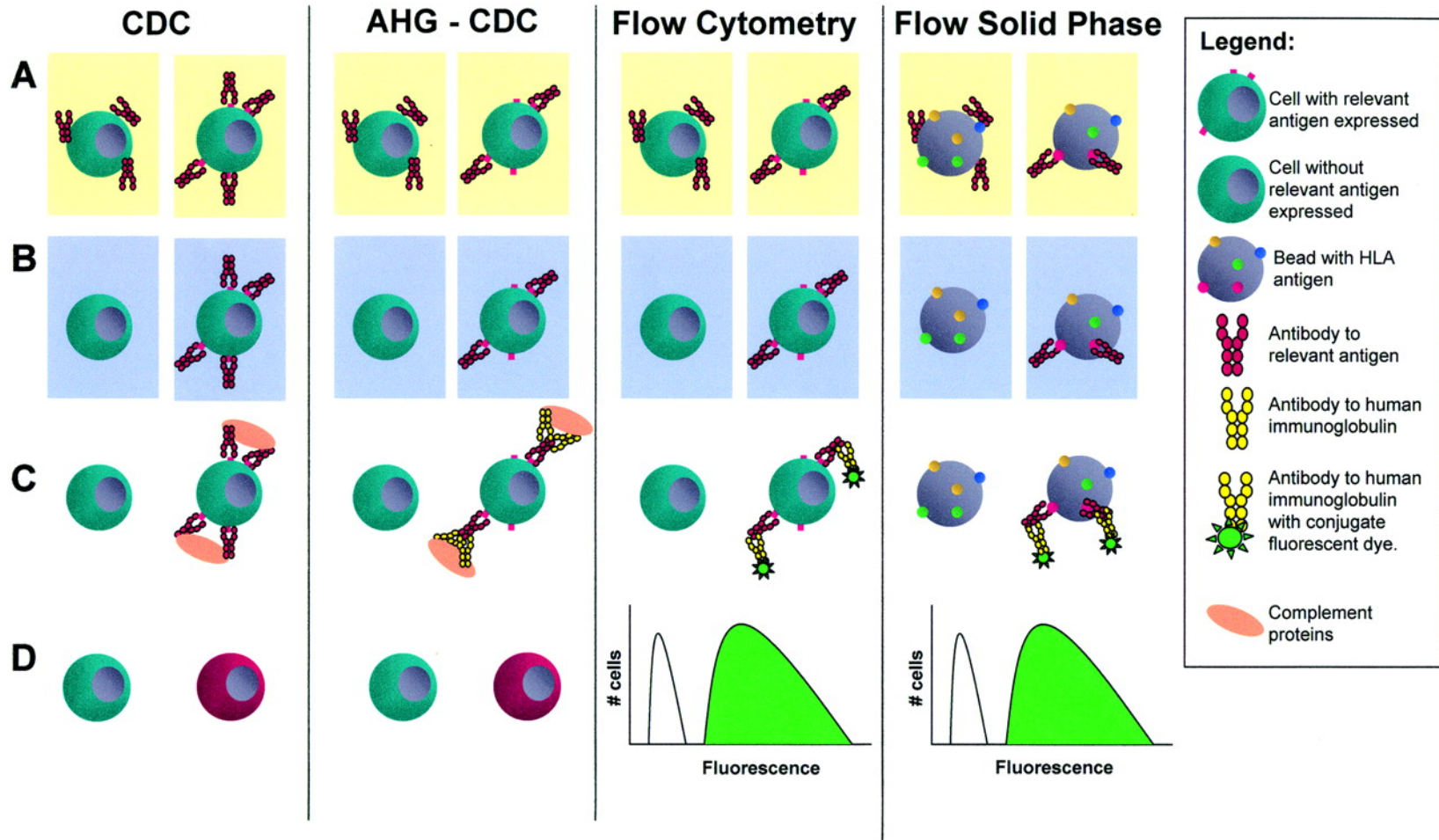
Some antigens can be “split” into closely related antigens:

HLA-A9 splits =
HLA-A24
HLA-A23

Note: Multiple alleles can define the same HLA antigen:

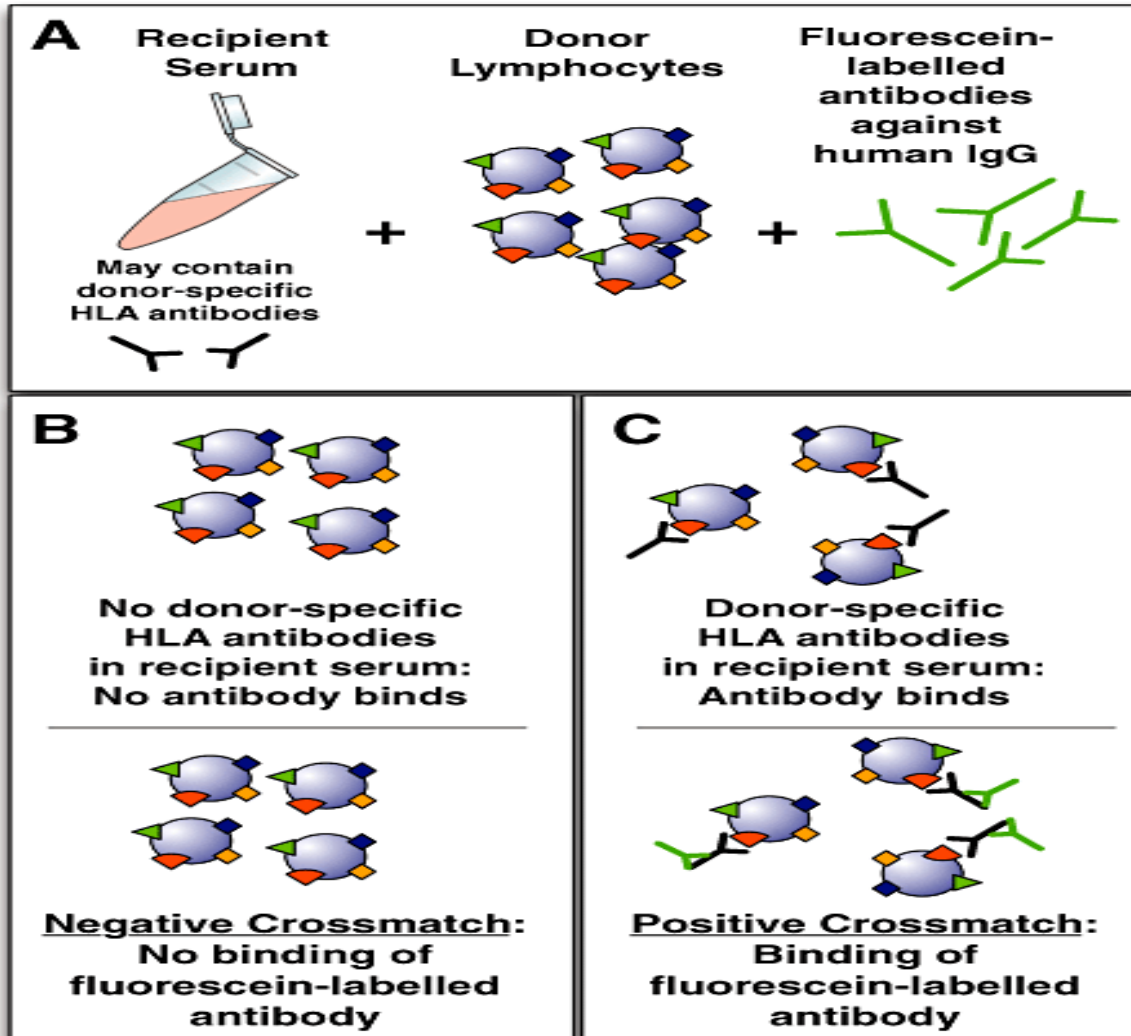
DRB1*0401, *0402,
*0405, *0407 = DR4

Methods of antibody detection methods of increasing sensitivity are shown from left to right.

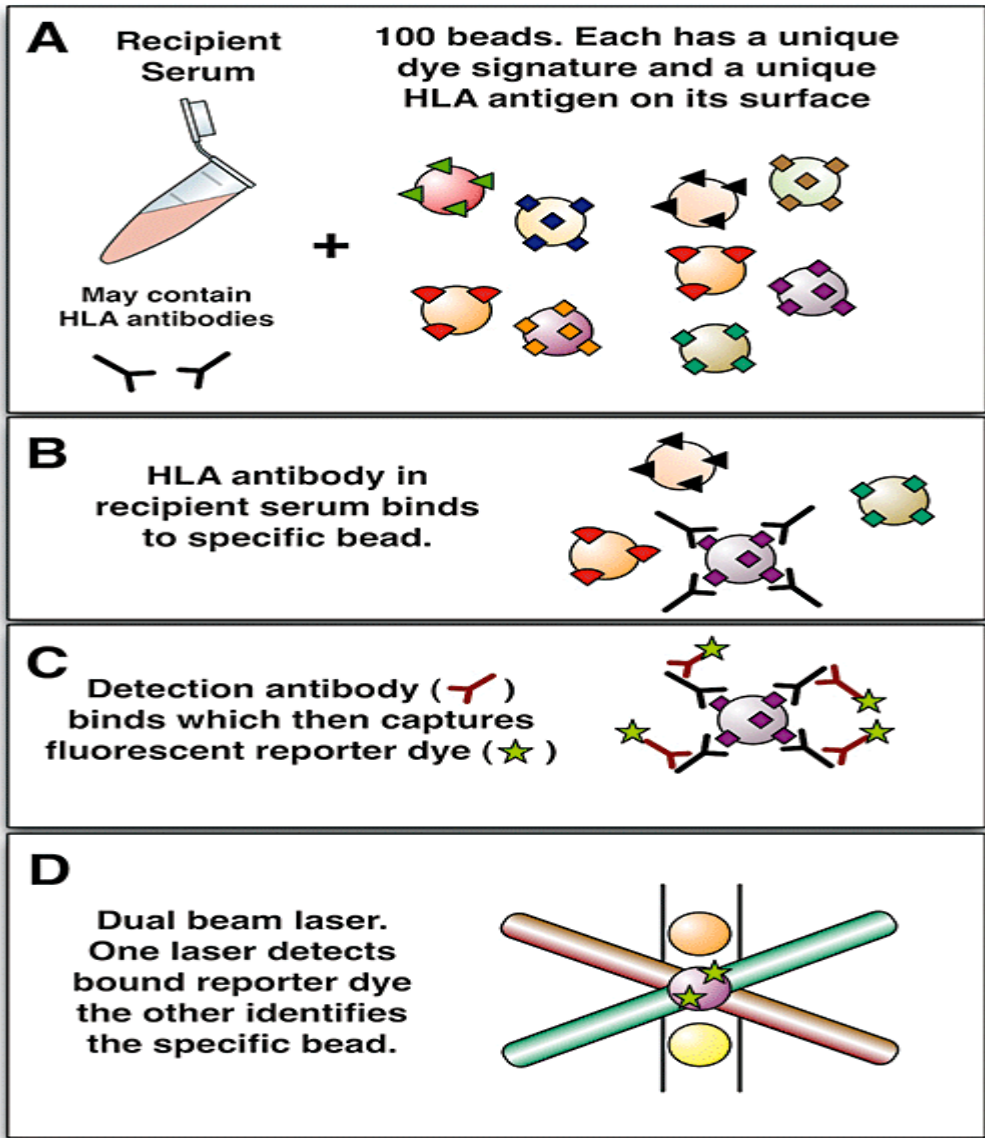


Tinckam K J , Chandraker A CJASN 2006;1:404-414

Flow Crossmatch



Luminex



LDPE Registry Match Cycles

16 Match Cycles completed to date

2009	2010	2011	2012	2013
Jan	Feb	Mar	Feb	Feb
Feb	May	June	June	May
May	Aug	Oct	Oct	
Oct	Nov			

Next Match Cycle:

October, 2013



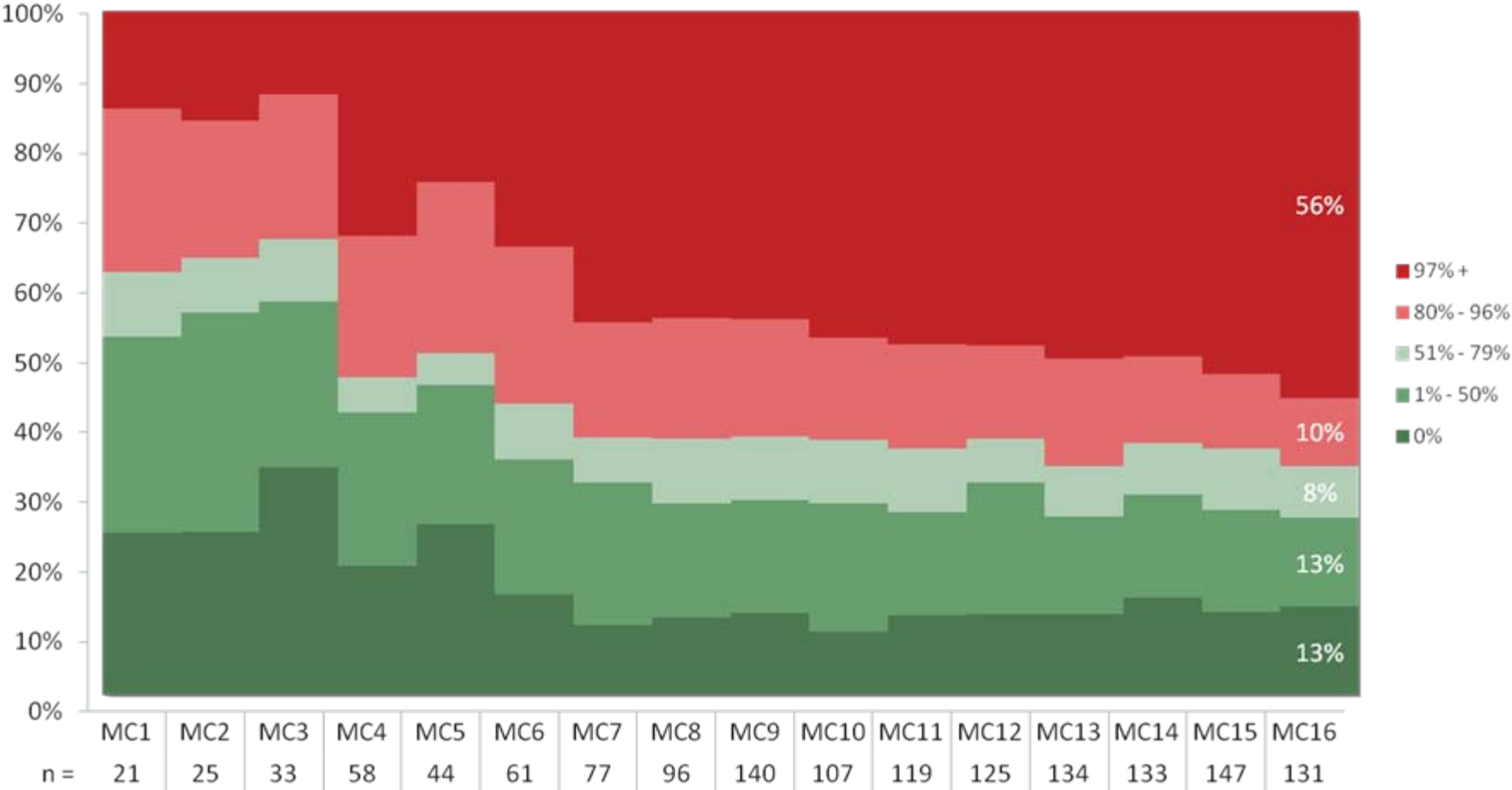
cPRA of the Transplanted O Registered Recipients

cPRA of Transplanted O Recipients	Registered	Transplanted	% of the 79 Transplanted O patients with this PRA	% of the cPRA group Transplanted
0%	55	13	16%	24%
1% - 49%	59	18	23%	31%
50% - 79%	28	15	19%	54%
80% - 96%	41	24	30%	59%
97% +	76	9	11%	12%
Total	259	79	100%	31%

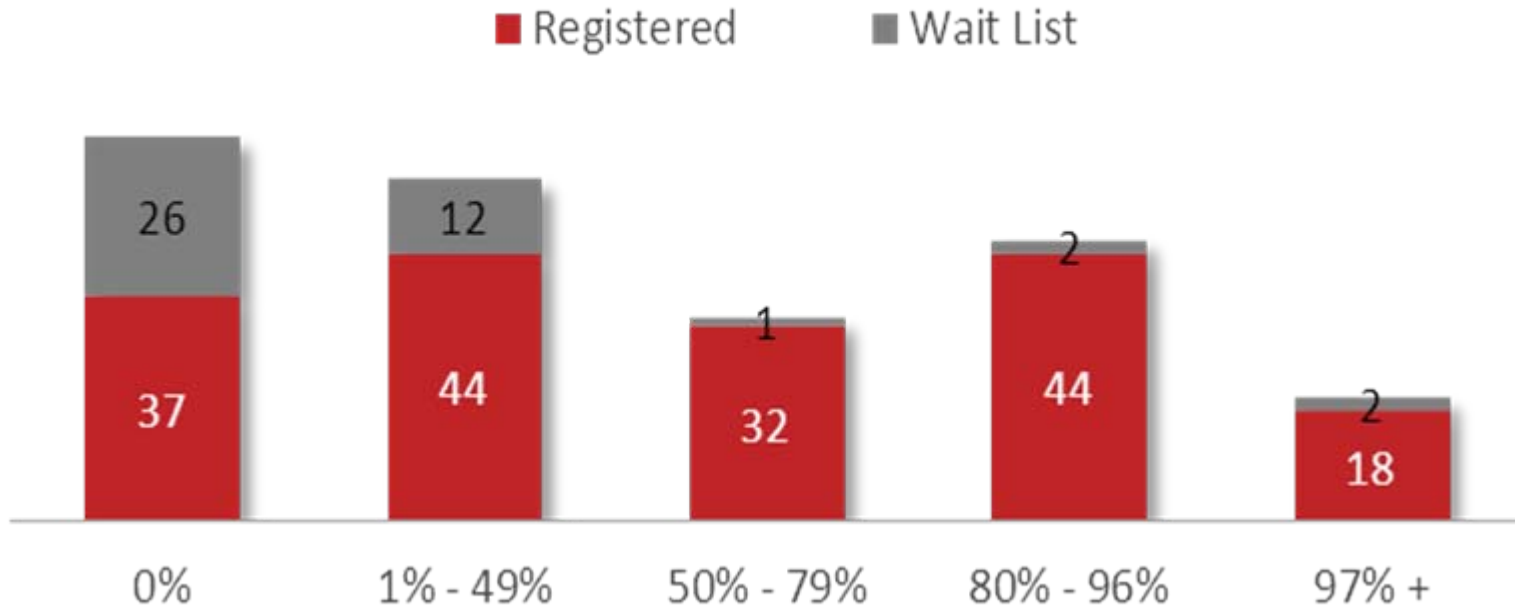
O RRs = 59% of the registry population (259/439)

O RRs have received 45% (79) of the 175 transplants

cPRA of Registered Recipients Through Time



Transplanted Recipients by PRA



% of Registered Recipient population:

18% 22% 12% 17% 32%

% of the total # (175) of RR transplanted:

21% 25% 18% 25% 10%

% of the registered group transplanted:

46% 48% 59% 60% 13%

HSP Waitlist Recipients

16 WLRs transplanted since January 2012:

- 4 were highly sensitized

Match Cycle	Transplant Date	PRA	TXC
11.1	January 2012	100%	QEII
12.1	September 2012	100%	OTT
14.1	February 2013	92%	TGH
14.1	March 2013	94%	TGH

Outcome Results

One Month Post Transplant

Donor Survival	N = 210	100%
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Recipients (N = 210)	Registered Recipients		Waitlist Recipients		Total	
	N	%	N	%	N	%
Patient Survival	166	100%	44	100%	210	100%
Graft Survival	164	99%	44	100%	208	99%
Rejection Episode	8	5%	3	7%	11	5%

Serum Creatinine			
Maximum	Minimum	Mean	Median
683	18	117	112

Serum Creatinine	Registered Recipients		Waitlist Recipients		Total	
	N	%	N	%	N	%
< 100	64	39%	14	32%	78	38%
100-149	76	46%	21	48%	97	47%
150-174	14	9%	5	11%	19	9%
175-199	5	3%	3	7%	8	4%
>199	5	3%	1	2%	6	3%
	164	100%	44	100%	208	100%

One Year Post Transplant

Donor Survival	N = 135	100%
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Recipients (N = 135)	Registered Recipients		Waitlist Recipients		Total	
	N	%	N	%	N	%
Patient Survival	110	100%	25	100%	135	100%
Graft Survival	107	97%	25	100%	132	98%
Rejection Episode	9	8%	2	8%	11	8%

Serum Creatinine			
Maximum	Minimum	Mean	Median
220	29	109	110

Serum Creatinine	Registered Recipients		Waitlist Recipients		Total	
	N	%	N	%	N	%
< 100	47	44%	6	24%	53	40%
100-149	46	43%	17	68%	63	48%
150-174	9	8%	2	8%	11	8%
175-199	2	2%	0	0%	2	2%
>199	3	3%	0	0%	3	2%
	107	100%	25	100%	132	100%

HSP Status

- Waiting to go live
- Challenges
 - Lab
 - Data
 - Transport