

Living Donor Paired Exchange (LDPE)

Why do we need Living Donation?

3,796 patients waiting for an organ transplant

- 2,679 (71%) waiting for a kidney transplant

249 people died while waiting for an organ transplant in 2009

***There is a shortage of kidneys for transplantation.
Living donation is an increasingly important
component of treatment for ESRD patients.***

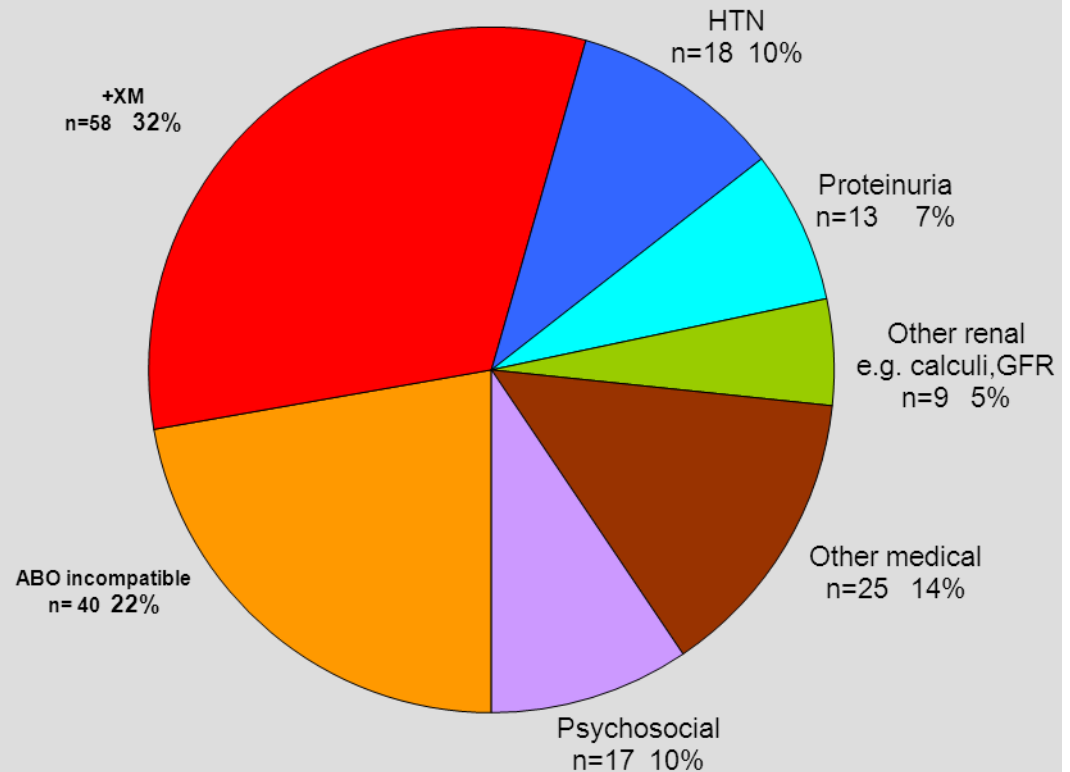
Source: Canadian Organ Replacement Register, Canadian Institute for Health Information (2009 year end tables)

Live Donation

- Considered a better option
- Expected life of kidney 12-20 years
- Sometimes can avoid dialysis
- Can usually avoid delayed graft function
- Planned surgery

Reasons for Living Donor Exclusion in Canada

Reasons for LD exclusion (n=180)



Karpinski *et al.* AJKD 2006

Why Living Donor Paired Exchange?

A novel transplant opportunity for kidney patients who have a **willing**, but unfortunately incompatible, living donor.

The donor has undergone required workup and deemed a suitable candidate for donation.

Benefits of a National LDPE Registry

- Significantly expands the donor pool and therefore the opportunity for patients needing a kidney transplant
- Increases numbers of kidney transplants
- Recipients receive living (vs. deceased) donor kidneys
- Reduced waiting time for kidney transplant recipients
- Improved health outcomes for patients with ESRD

LDPE Registry: History

- Launched January 2009 as a pilot in AB, BC and ON
- Other provinces joined in as their Privacy Impact Assessments were completed
- MOTP joined in Feb 2010
- 11 Match Cycles completed to date
- Match Cycles run 4 times per year



Candidates for LDPE

Potential Recipient and his/her willing living Donor are ABO incompatible

or

Potential Recipient is cross-match positive with his/her willing living Donor and has a donor-specific antibody

or

Potential Recipient is compatible with his/her willing living Donor but they both wish to participate in an exchange

&

Recipient is ready for transplant on the DAY of Activation

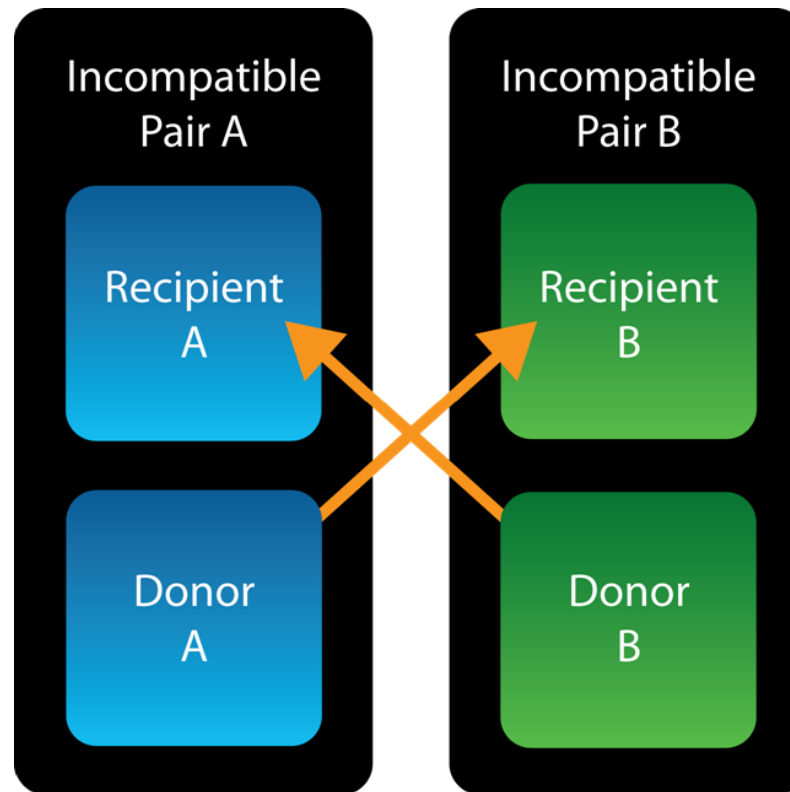
+

Donor has been cleared for surgery including renal vessel imaging

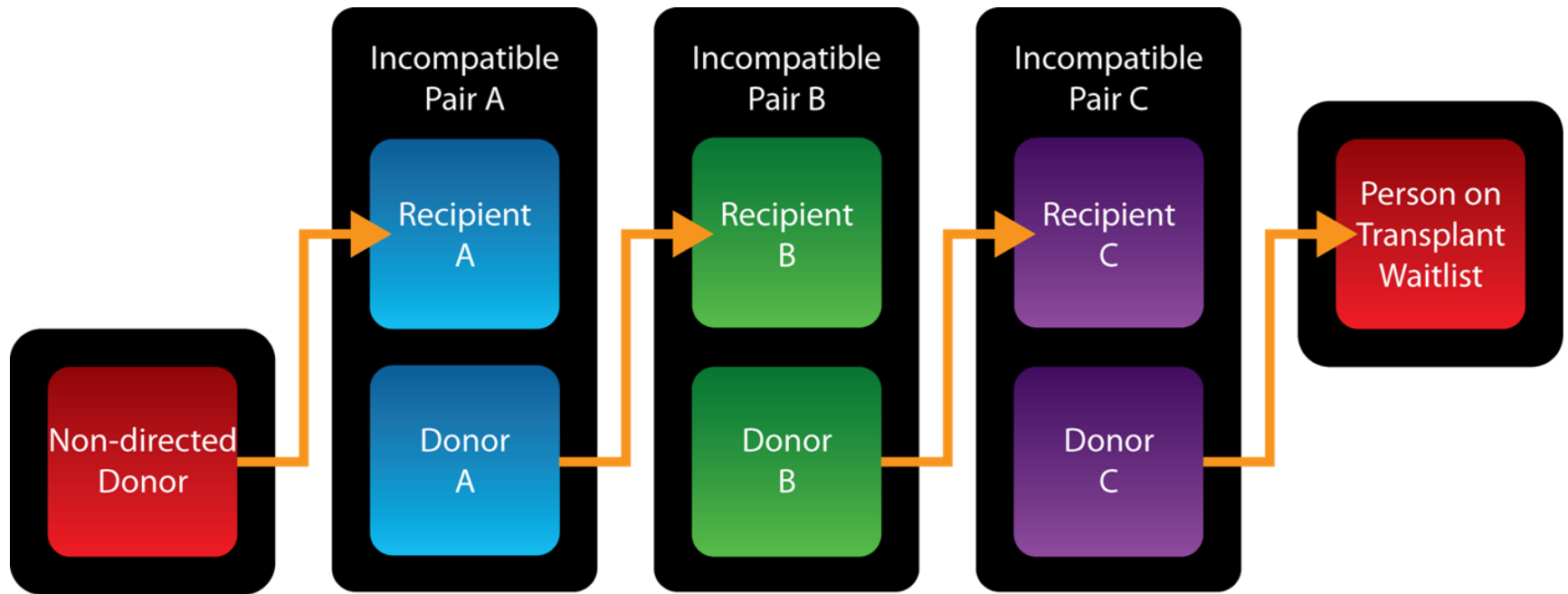
Other Registry information...

- A recipient may be listed with more than one donor.
- Recipient and at least one donor must be medically evaluated and cleared for surgery before they can be activated and considered in a match run.
- Matched pairs will remain anonymous to one another throughout the procedure.
- Whenever possible transplants will occur simultaneously.

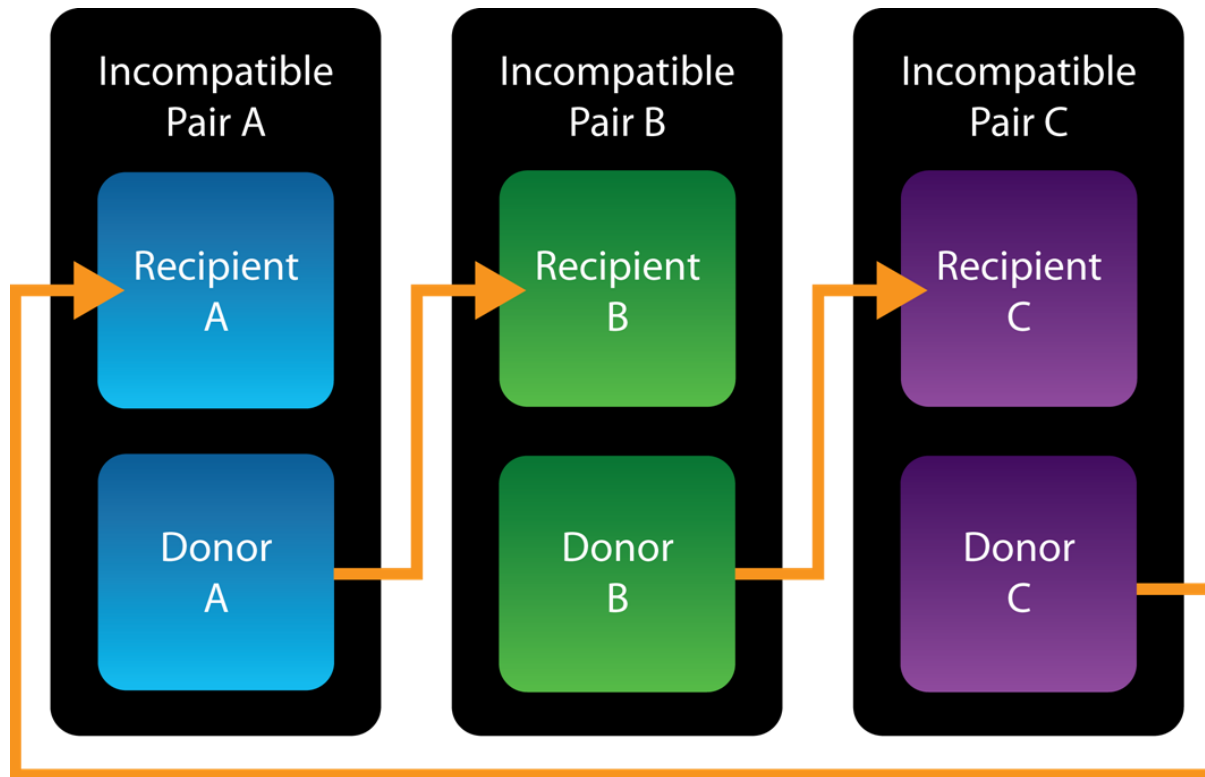
Paired Exchange



Domino



Closed Chain (N-Way)



LDPE ... AS OF September 2011

11 scheduled match cycles completed

247 pairs registered; **21** in first run; **110** in most recent

0 NDAD in first run; **25** NDAD over next **9** cycles

95 transplants completed

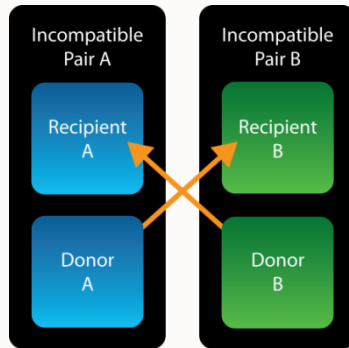
14 scheduled or under review

**Note: most recent Match Cycle was run October 11,
2011**

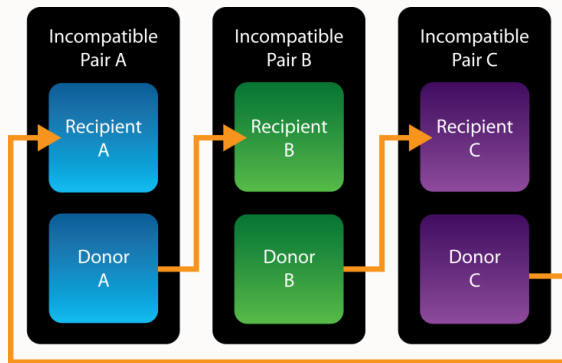
POWER OF DOMINO EXCHANGE

Of the **95** transplants completed to date:

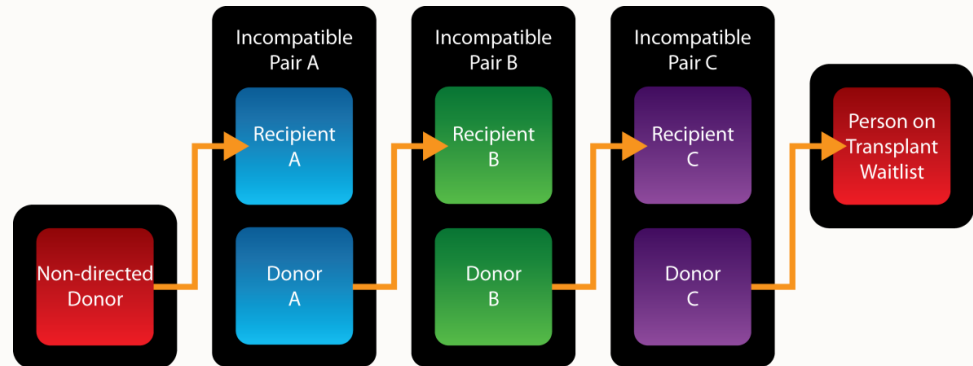
12 from Paired Exchanges



22 from N-Way Exchanges



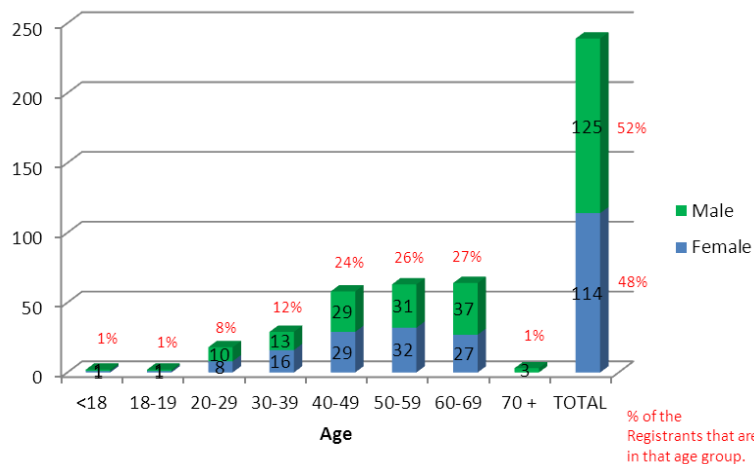
61 from Domino Exchanges



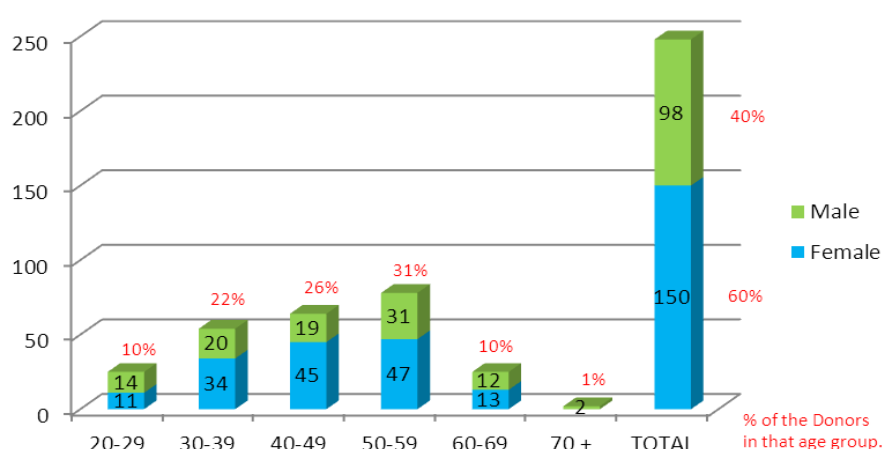
19 dominos of 2 to 5 transplants each

Registrants: Age, Gender, PRA

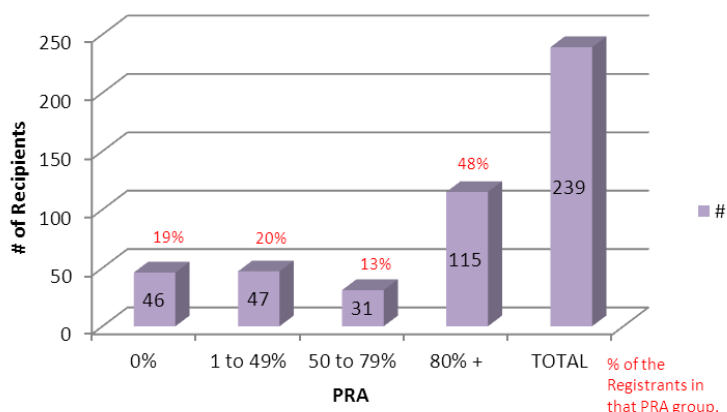
Registered Recipients: Age and Gender



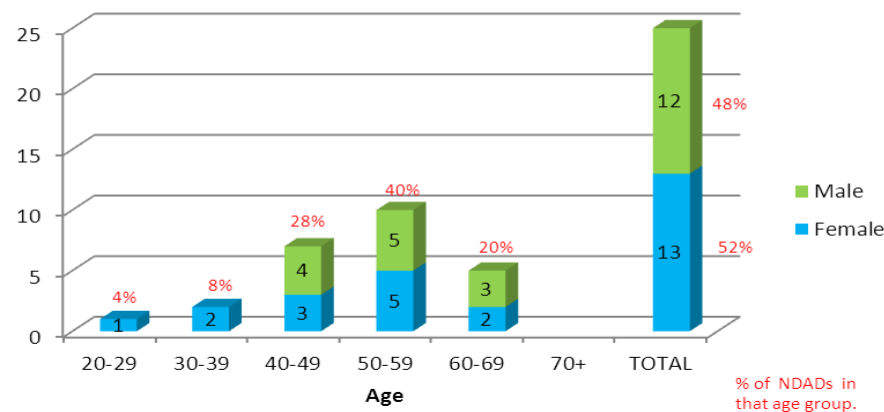
Registered Donors: Age and Gender



Registered Recipients by PRA




Registered NDADs: Age and Gender



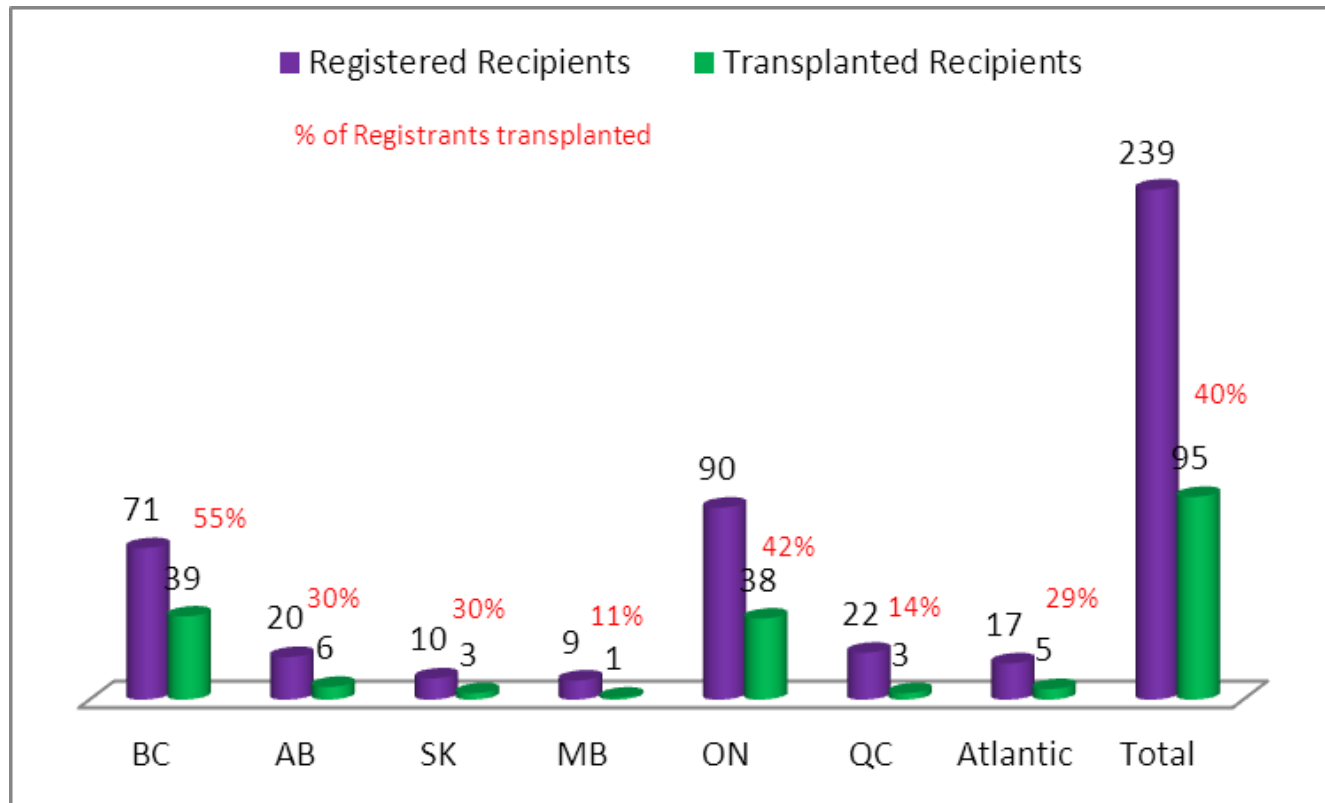
Transplanted Recipients by Province

Recipient Transplant Program	Transplants	Provincial Totals		
Vancouver General	16	BC	39	41%
St. Paul's Hospital	23			
University of Alberta	3	AB	6	6%
Foothills Medical Centre	3			
St. Paul's Hospital	3	SK	3	3%
Health Sciences Centre	1	MB	1	1%
London Health Sciences	1	ON	38	40%
Toronto General Hospital	16			
St. Michael's Hospital	14			
The Hospital for Sick Children	1			
The Ottawa Hospital	6			
C.H. Universitaire de Sherbrooke	1	QC	3	3%
Notre Dame	2			
Queen Elizabeth II Hospital	5	Atlantic	5	5%
TOTAL	95	100%		

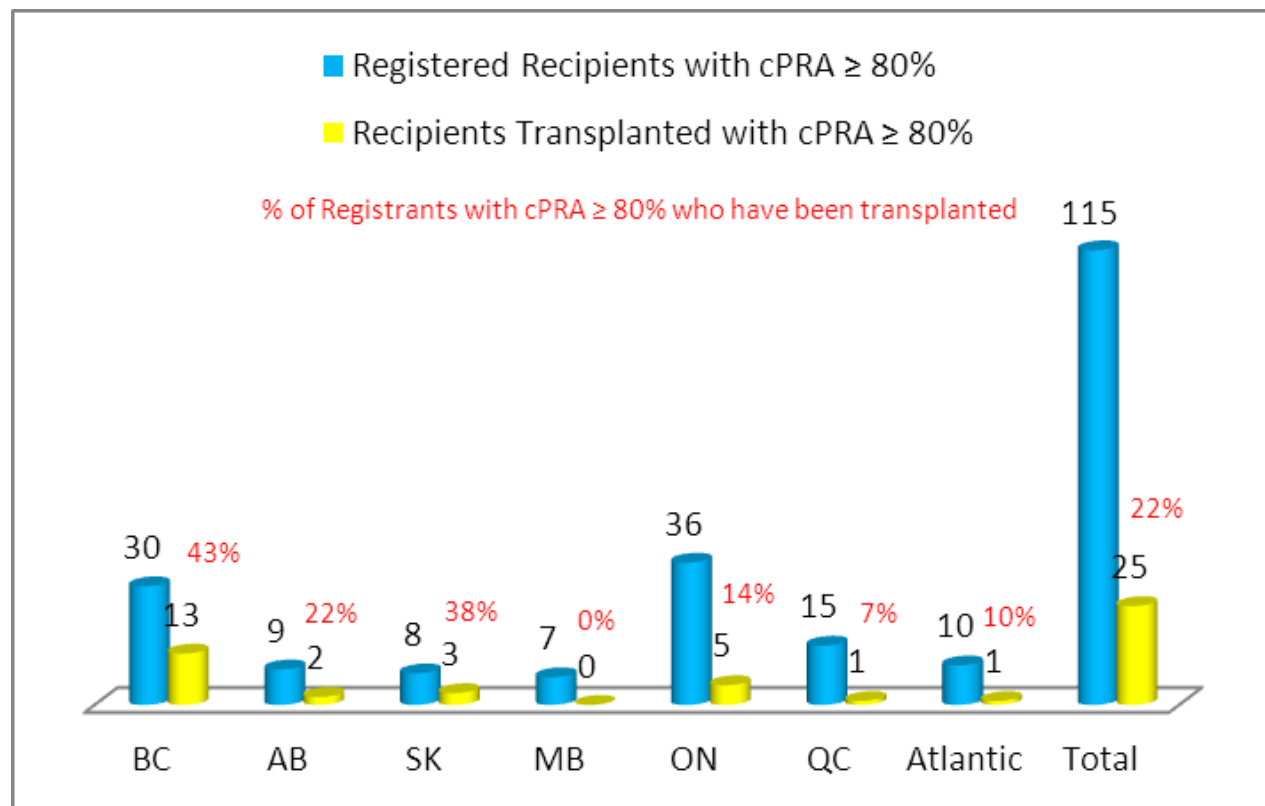


NS	2	2%
NL	3	3%

Registered vs Transplanted Recipients



Registered and Transplanted Recipients with cPRA $\geq 80\%$



Transplanted Recipients versus Activated Registry Recipients

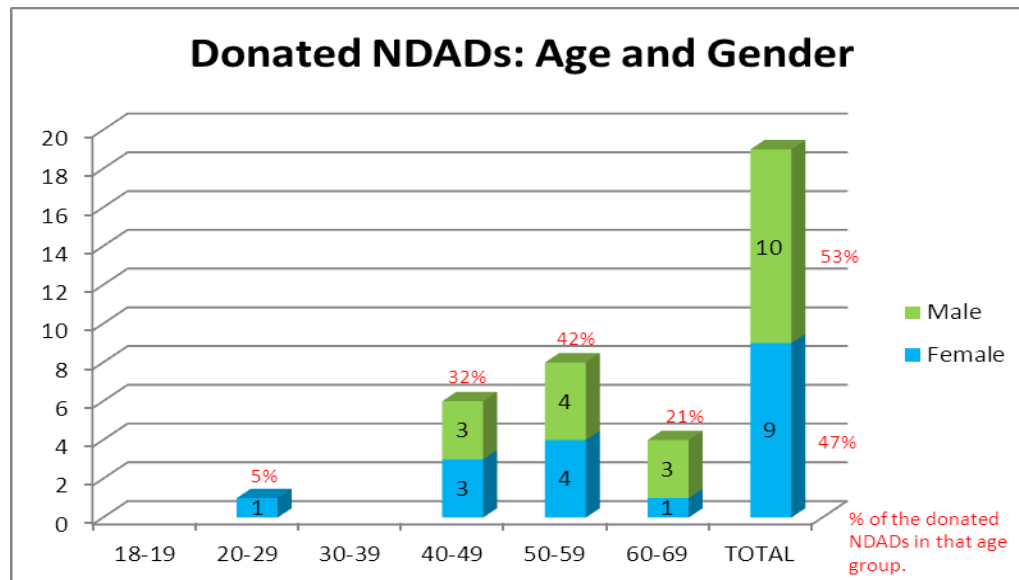
Txd Reg. Recips: Blood Group	#	% of Total Txd	# of Registry Recips.	% of Registry Recips.	% of Blood Group Txd
A	30	39%	68	28%	44%
B	15	19%	34	14%	44%
AB	2	3%	4	2%	50%
O	30	39%	133	56%	23%
TOTAL	77	100%	239	100%	32%

Txd Reg. Recips: PRA %	#	% of Total Txd	# of Registry Recips.	% of Registry Recips.	% of Group Txd
0%	18	23%	46	19%	39%
1 to 49%	20	26%	47	20%	43%
50 to 79%	14	18%	31	13%	45%
80% +	25	32%	115	48%	22%
TOTAL	77	100%	239	100%	32%

Txd Reg. Recips: Months on Dialysis	#	% of Total Txd	# of Registry Recips.	% of Registry Recips.	% of Group Txd
0	28	36%	69	29%	41%
1 to 12	16	21%	49	21%	33%
13 to 24	13	17%	41	17%	32%
25 to 36	7	9%	25	10%	28%
37+	13	17%	55	23%	24%
TOTAL	77	100%	239	100%	32%

Donated Non-Directed Anonymous Donors (NDADs): Age/Gender

Donated NDADs Age		%	Female	%	Male	%
20-29	1	5%	1	100%	0	0%
30-39	0	0%	0	0%	0	0%
40-49	6	32%	3	50%	3	50%
50-59	8	42%	4	50%	4	50%
60-69	4	21%	1	25%	3	75%
TOTAL	19	100%	9	47%	10	53%



Proposals versus Completions

# of Unique Proposed Matches	# of Completed Transplants	Percent of Proposed Matches Completed
154	95	62%

# of Proposed Chains	# of Completed Chains	Percent of Proposed Chains Completed
43	31	72%

Average time to completion by chain length

Chain Type	Average Time
PE (6)	3 months
Domino (19)	3.5 months
Closed (6)	3.5 months

Registry Outcomes at 1 Month Post-Transplant

Donor Survival		N = 95			100%		
Recipients (N=95)		Registry Recipients		Waitlist Recipients		Total	
Patient Survival		77	100%	18	100%	95	100%
Graft Survival		76	99%	18	100%	94	99%
Rejection episodes		4	5%	2	11%	6	6%

Serum Creatinine			
Maximum	Minimum	Mean	Median
254	58	117	103

3 year old child has SCr = 18

Registry Outcomes at 1 Month Post-Transplant

Serum Creatinine	Registry Recipients		Waitlist Recipients		Total	
< 100	26	35%	5	28%	31	33%
100 - 149	39	52%	10	55%	49	53%
150 - 174	6	8%	2	11%	8	9%
175 - 199	1	1%	1	6%	2	2%
≥ 200	3	4%	0	0%	3	3%
Total	75*	100%	18	100%	93*	100%

* does not include 3 year old recipient and 1 failed kidney

MOTP Statistics

- 23 pairs entered into LDPE
- Our first NDAD entered with last cycle
- One recipient has 5 donors entered (1 more being assessed)
- 5 recipients have received transplants (one pending)
- 5 donors donated (3 travelled to another center and 2 stayed here and kidneys were shipped)
- 1 recipient was transplanted from deceased donor list

This was a new experience for us

What we did well....

- Screening
- Preparation with all of the involved parties, in-services, etc
- Privacy and Confidentiality
- OR's
- COMMUNICATION!!!

Future Considerations

- Standardizing criteria for Recipient listing
- Standardizing Donor assessments
- Consistency in Donor reimbursement
- Donor follow-up
- Opportunity for debriefing
- Ongoing evaluation

