



NINE NON-SIMULTANEOUS EXTENDED ALTRUISTIC DONOR (NEAD) CHAINS



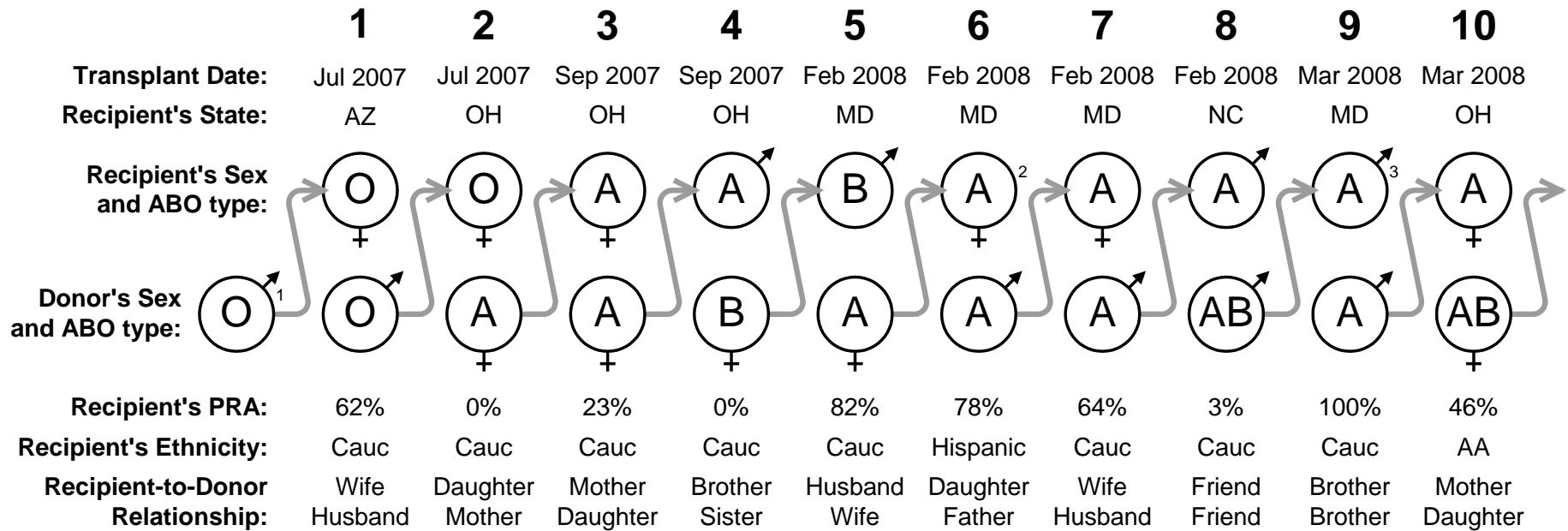
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INTRODUCTION: Kidney paired donation is an evolving strategy for achieving living donor kidney transplants for candidates with willing, but incompatible living donors. Since 2008 kidney paired donation activity in America has eclipsed the total prior activity. Part of this growth has resulted from the incorporation of non-directed donors to produce chains of transplants rather than simple exchanges. It is controversial whether these chains should be performed simultaneously (called domino paired donation, DPD) or nonsimultaneously (called nonsimultaneous extended altruistic donor chains, NEAD). NEAD chains create “bridge donors” whose incompatible recipients receive living donor kidneys before the bridge donor donates. We report our experience with nine NEAD chains.

METHODS: Sixteen transplant centers in thirteen states have transplanted patients as part of a larger network that shared altruistic donors and arranged them into NEAD chains. Altruistic donors initiated NEAD chains that were extended by allowing recipients to receive kidneys before their incompatible donors, referred to as “bridge” donors, donated.

NEAD Chain 1

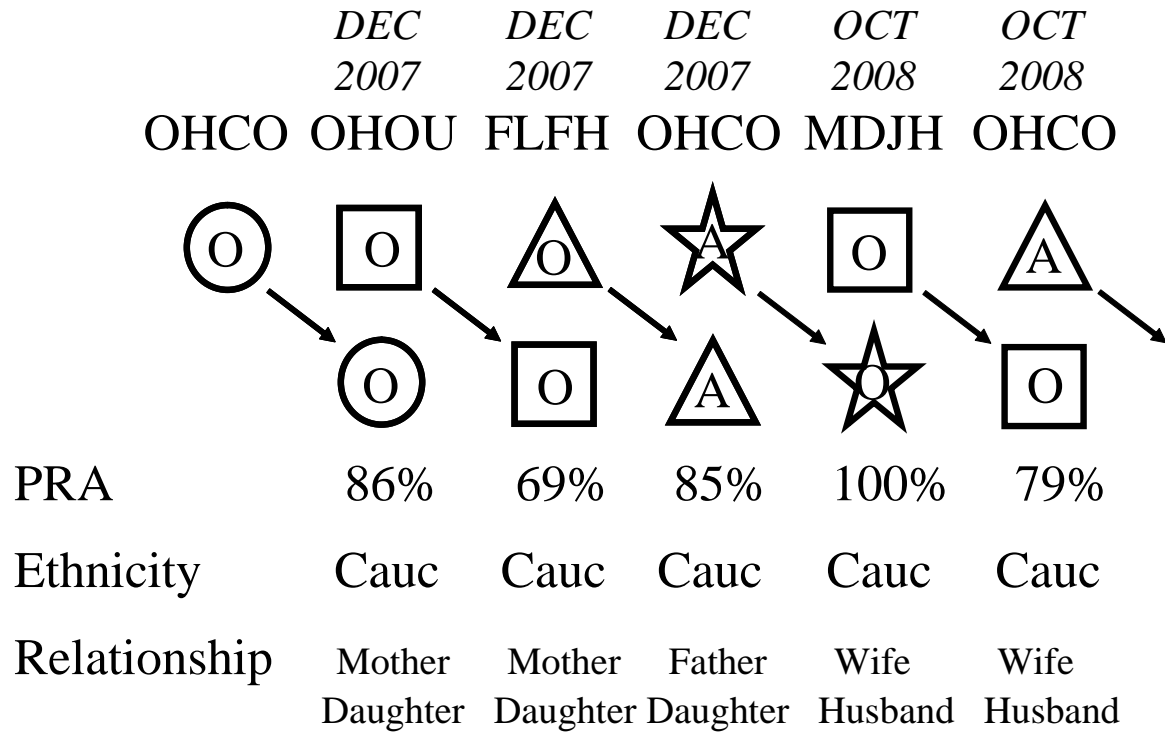


¹ The initiating donor was an unpaired altruistic donor from Michigan.

² The recipient of Transplant 6 required desensitization to HLA DSA by T and B cell flow cytometry.

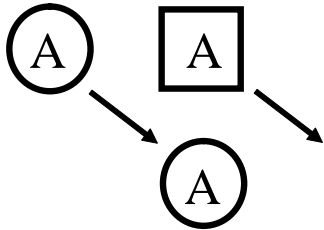
³ The recipient of Transplant 9 required desensitization to blood group (AHG titer of 1:8).

NEAD Chain 2



NEAD Chain 3

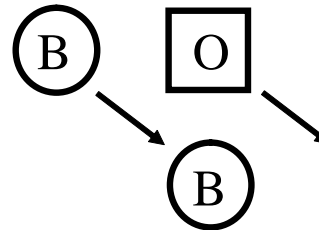
Donor *OCT*
From GA *2008*
OHCO TXHH



PRA 79%
Ethnicity Hisp
Relationship Sister-in-Law
Sister-in-Law

NEAD Chain 4

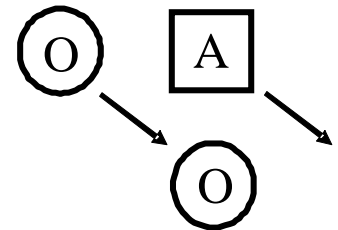
JAN
2009
OHCO OHCO



PRA 27%
Ethnicity Cauc
Relationship Wife
Husband

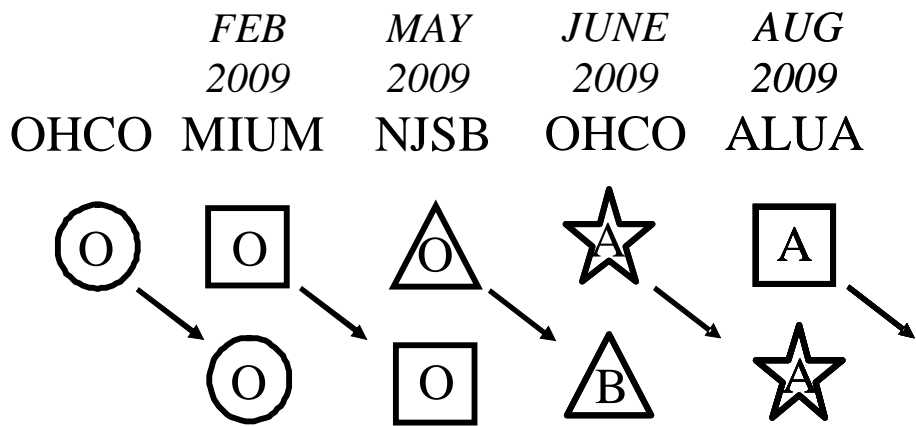
NEAD Chain 6

June
2009
OHCO INIM



PRA 62%
Ethnicity Cauc
Relationship Uncle
Niece

NEAD Chain 5



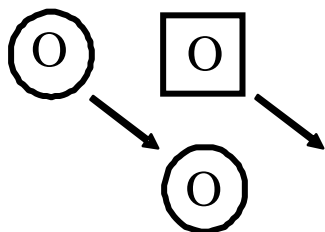
| | | | | |
|--------------|-----------------|-----------------|--------------------------------|-----------------|
| PRA | 55% | 89% | 68% | 26% |
| Ethnicity | Cauc | Cauc | Cauc | Cauc |
| Relationship | Husband Wife | Wife Husband | Sister-in-law Sister-in-law | Wife Husband |

NEAD Chain 7

| | | | | | | |
|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|-----------------|
| | <i>FEB</i> 2010 | <i>FEB</i> 2010 | <i>JAN</i> 2010 | <i>APR</i> 2010 | <i>APR</i> 2010 | |
| | OHCO | ALUA | ALUA | CASM | MISM | MISM |
| | | | | | | |
| | | | | | | |
| PRA | | 70% | 8% | 90% | 0% | 23% |
| Ethnicity | | AA | Cauc | AA | Indian | Cauc |
| Relationship | | Daughter Mother | Wife Husband | Husband Wife | Wife Husband | Wife Husband |

NEAD Chain 8

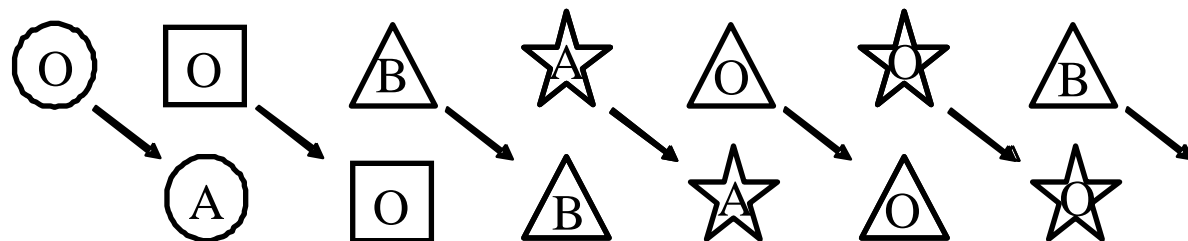
Donor *APR*
From WI *2010*
OHCO OHCO



PRA 12%
Ethnicity *Cauc*
Relationship *Friend*
Friend

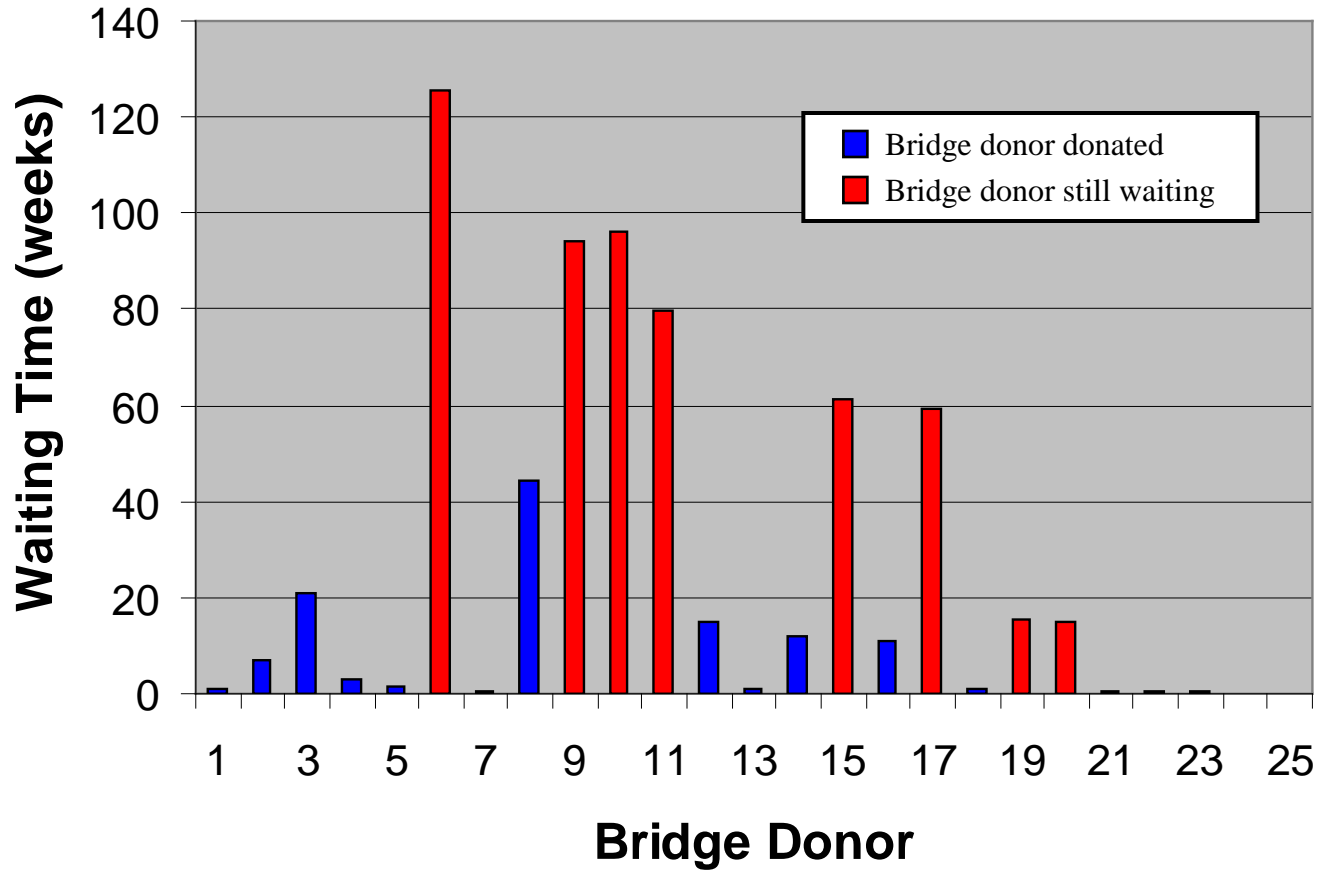
NEAD Chain 9

JULY 2010 *JULY 2010* *AUG 2010* *AUG 2010* *AUG 2010* *AUG 2010*
COUC OHCO OHCO MISM COSL COUC COUC



PRA 0% 0% 77% 68% 90% 0%
Ethnicity *Cauc* *AA* *Cauc* *Cauc* *Cauc* *Cauc*
Relationship *Brother* *Wife* *Cousin* *Husband* *Daughter* *Wife*
Brother *Husband* *Cousin* *Wife* *Mother* *Husband*

Length of Bridge (weeks)



CONCLUSIONS

1. NEAD Chains have allowed for 34 transplants from nine altruistic donors facilitated by the Alliance for Paired Donation (average length of chain is 3.8 transplants).
2. Nineteen of thirty-four (56%) have a PRA over 60%.
3. Fifteen of thirty-four (44%) have blood type O.
4. NEAD Chains increase the quantity AND quality of paired donation transplants compared with simultaneous exchanges.
5. The average bridge donor waits 6.7 months to donate. The longest “bridge donor” donated after a 10 month wait.
6. No bridge donor has reneged.