



# An OPO Offer Acceptance Report for Hard-to-Place Kidneys

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## Introduction

- Kidney offer acceptance behavior for transplant programs varies considerably for several subgroups of offers:

1. High-KDPI (KDRI > 1.75 or an approximate KDPI of 85%)
2. PHS increased infectious risk
3. DCD donors
4. HCV+ donors
5. Over 100 offers

- An organ procurement organization (OPO) offer acceptance report could help place these kidneys by identifying the programs most likely to accept and transplant them.

## Offer Acceptance Model

- An offer acceptance model was developed with offers from match runs that ended in acceptance from July 1, 2015, to June 30, 2016. The model adjusts for candidate and donor factors and candidate-donor interactions, including the number of previous offers, to estimate the expected probability of acceptance for each offer.

## OPO Report

- The report uses the offer acceptance model to categorize programs into five groups ranging from above average to below average offer acceptance.

- The information included in the reported is

1. Program ID
2. History of acceptance (i.e., categorization)
3. Number of offers
4. Number of accepted offers (acceptances)
5. Number of expected offers (expected)
6. Offer acceptance ratio [(Accepted + 2) / (Expected + 2)]

- The report ranks programs by (1) categorization of offer acceptance and (2) offer acceptance ratio.

## Methods

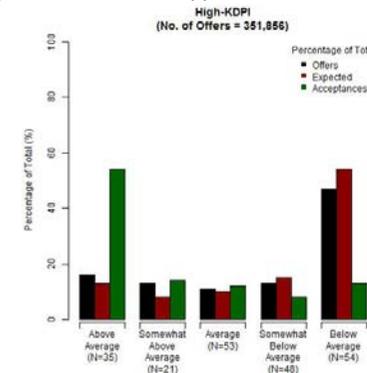
- A bar plot for each subgroup of offers illustrates the percentage of (1) offers, (2) expected number of acceptances, and (3) acceptances across each category of acceptance. The bar plots include the total number of offers in the subgroup and the number of programs in each category.

## Results

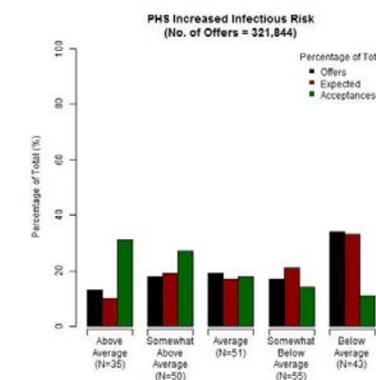
**Figure 1.** An illustration of the OPO offer acceptance report.

Program ID	History of Acceptance	Offers	Acceptances	Expected	Offer Acceptance Ratio
AA	Above Average	1049	53	1.4	16.30
AB	Above Average	970	42	1.0	14.91
AC	Above Average	496	34	0.7	11.56
AD	Above Average	3370	44	1.9	11.04
AE	Above Average	1823	44	1.9	11.78
AF	Above Average	7450	130	10.4	10.67
AG	Above Average	125	19	0.1	5.70
AH	Above Average	10026	144	11.8	5.23
AI	Above Average	6257	95	9.0	6.85
AJ	Above Average	4332	57	5.1	6.27
AK	Above Average	9872	94	8.9	7.90
AL	Above Average	3213	34	3.2	7.42
AM	Above Average	4561	49	5.9	6.42
AN	Above Average	4367	33	4.8	5.12
AO	Above Average	8763	62	12.5	4.42

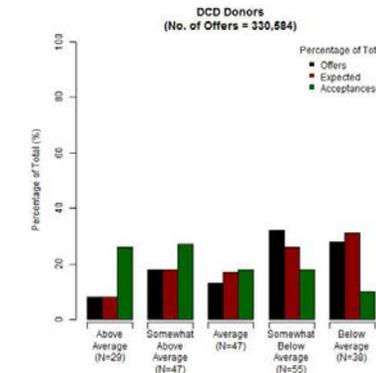
**Figure 2.** The bar plot for high-KDPI kidneys (KDRI > 1.75 or an approximate KDPI of 85%)



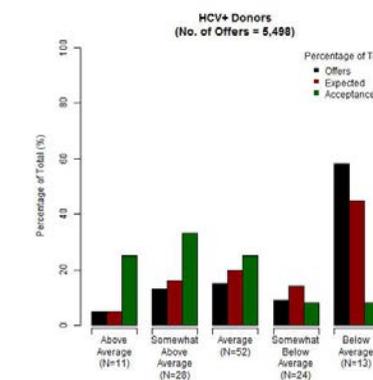
**Figure 3.** The bar plot for PHS increased infectious risk kidneys.



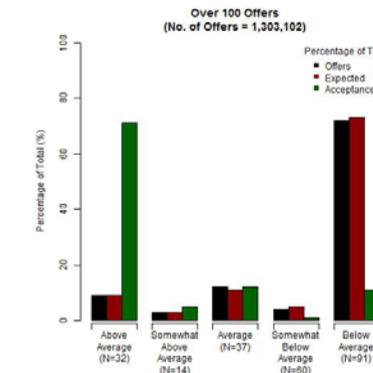
**Figure 4.** The bar plot for DCD Donors.



**Figure 5.** The bar plot for HCV+ kidneys.



**Figure 6.** The bar plot for kidneys that have already been offered over 100 times.



## Conclusions

- Some programs have significantly higher acceptance for certain subgroups of offers.
- The variability is most dramatic for kidneys that have already been offered 100 times.
- A strong effect also exists for high-KDPI and HCV+ kidneys.
- The OPO offer acceptance report may help inform OPOs of the substantial differences in offer acceptance behavior for certain subgroups of kidneys and, within the confines of OPTN policy, help reduce discards and increase transplants by informing the OPOs of programs most likely to accept and transplant such kidneys.

## Next Steps

- Offer acceptance models are being developed for non-renal organs and a similar report could be created.
- Requires identifying the appropriate subgroups of offers.
- The issues and challenges in placement of thoracic organs likely differ from those related to kidney placement. For example, allocation is typically completed prior to recovery and maximum travel distances are typically much shorter.