OPO Performance Metrics: Relationship with Kidney Transplant Program Performance Metrics and Kidney Utilization

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Introduction

- Organ procurement organization (OPO) performance metrics have been scrutinized due to the perceived disincentives of the regulatory system.

- In kidney transplantation, OPOs are evaluated on kidney yield and may perceive that recovery of high-risk kidneys increases the risk of regulatory review.

- OPOs and transplant programs may also perceive that their performance metrics work in opposition to each other. That is, the local programs in OPOs with high kidney yield will have relatively worse posttransplant outcomes due to better placement of marginal kidneys.

- The risk adjustment of OPO kidney yield removes the possibility of regulatory review due to the recovery of kidneys with high measured risk, and reduces the likelihood that OPO and transplant program performance metrics are correlated.

- Since the kidney yield model does not adjust for program behavior, it is possible that kidney utilization of transplant programs within a donation service area (DSA) may affect the performance metrics of the corresponding OPO.

Methods

- OPO Yield Model and Adjustment for High-KDRI Kidneys: A calibration plot assessed the ability of an OPO kidney yield model to adequately account for the lower likelihood of placement for kidneys with high kidney donor risk index (KDRI).

- Relationship between OPO and transplant program performance metrics: A Pearson correlation assessed the association between OPO kidney yield and DSA hazard ratios for 1-year deceased donor posttransplant graft survival. The DSA hazard ratios aggregate every deceased donor transplant performed in the DSA.

- Relationship between OPO Performance Metrics and Kidney Utilization: A Pearson correlation assessed the association of kidney utilization within a DSA with (1) OPO kidney yield, (2) percentage of kidneys within an OPO that required more than 100 offers to place (hard-to-place kidneys), and (3) percentage of kidneys within an OPO that were placed locally.

- Kidney utilization was assessed by offer acceptance ratios estimated from match runs that ended in acceptance for donors recovered between July 1, 2015, and June 30, 2016, and was adjusted for donor and candidate factors.

Methods (Continued)

- Donor yield was estimated with donors recovered between July 1, 2015, and June 30, 2016, and was adjusted for donor characteristics.

- The hazard ratio for 1-year posttransplant graft failure was estimated from deceased donor transplants performed between January 1, 2013, and June 30, 2015, and was adjusted for donor and recipient characteristics.
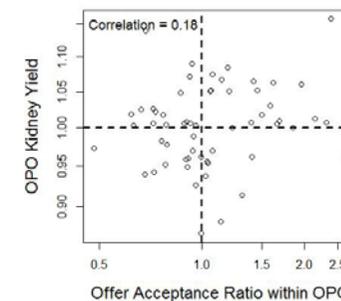
Results

Figure 1. The calibration plot demonstrating that an OPO yield model properly accounts for the reduced likelihood of placement for high KDRI kidneys.
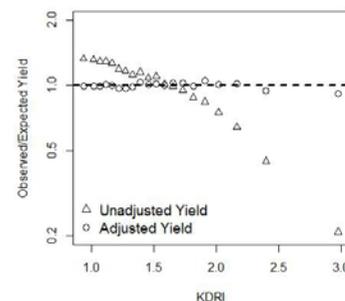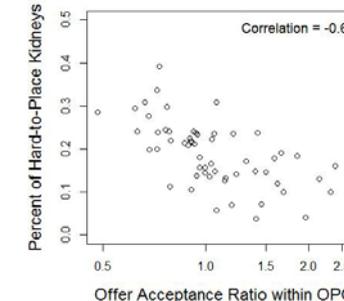

Figure 2. The association between OPO yield and posttransplant outcomes of local programs.
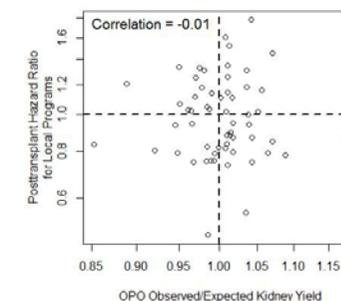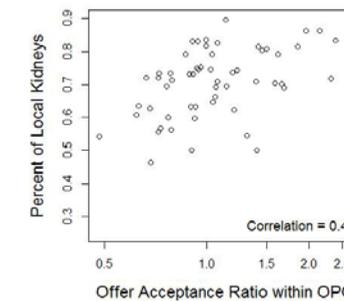

Figure 3. The association between organ utilization and OPO kidney yield.

Figure 4. The association between organ utilization and the percentage of hard-to-place kidneys.

Figure 5. The association between organ utilization and the percentage of locally placed kidneys.

Conclusions

- The OPO yield model currently implemented in the SRTR OPO-specific reports includes the components of the KDRI but not the aggregated score.

- Inclusion of the KDRI in the yield model results in good calibration for the differential placement of kidneys across KDRI.

- There was no evidence of an association between OPO and transplant program performance metrics.

- Below average kidney utilization within a DSA is associated with more difficult kidney placement, including lower kidney yield for the corresponding OPO.

Next Steps

- OPO yield models should include KDRI in addition to the individual components.

Authors have no conflicts of interest to report.