OPTN/UNOS Kidney-Pancreas Workgroup
Meeting Minutes
December 10, 2018
Teleconference Call

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Introduction

The Kidney-Pancreas Workgroup (the Workgroup) met via teleconference on 12/10/2018 to discuss the following agenda items:

1. Kidney-Pancreas Simulated Allocation Model (KPSAM) Modeling Analysis

The following is a summary of the Workgroup's discussions.

1. Kidney-Pancreas Simulated Allocation Model (KPSAM) Modeling Analysis

Scientific Registry of Transplant Recipients (SRTR) staff presented the results of the simulated allocation modeling analysis.

Data summary:

Simulated Allocation Model (SAM) Limitations and Implications for Policy Development

- SAMS rely on aggregate historical data
  - Can't predict changes in organ acceptance behavior or identify trends over time
- SAMs work best for modelling small allocation changes applied to large patient groups
  - Unlikely to give reliable predictions for small population subgroups, can't predict outcomes below an OPO level
- SAMS assume standardized behavior
  - Center and OPO level variation in policy or practice is not modeled
  - Directed/expedited allocations are not modeled
- Organ discard projections are unreliable
  - SAMs are not designed to predict an overall number of transplants
  - Organs are discarded after a fixed number of declined offers, regardless of organ and donor characteristics

Overall, SAMs are good tools to estimate relative magnitude/direction of possible effects of policy change. However some policy changes may be justified even in the absence of clear simulation results.

KPSAM Updates

All predictive models used by KPSAM have been updated to incorporate newer data and methodology:

- Offer acceptance models
- Post-transplant outcome models
- Waitlist mortality matching models

Study Population

KPSAM input files were updated to include transplant candidates listed on the kidney, kidney-pancreas (KP), or pancreas transplant waiting lists between Jan 1,2017-Dec 31, 2017 and donors whose kidneys or pancreata were recovered for transplant in the same time period. It is

possible that this candidate pool included some candidates that were listed pre-KAS implementation, depending on how long they have been on the waitlist.

<u>KPSAM modeled</u>

Simulation models:

- Simulation BL: baseline using current allocation systems
- Simulation 2CR_150: uses distances of 150nm and 300nm replacing local and regional designations
- Simulation 2CR_250: uses distances of 250nm and 500 nm replacing local and regional designations
- Simulations 1CR_nopts, 1CR_shallow & 1CR_steep: uses distance of 500 nm in place of the local designation and regional sharing is eliminated. Instead organs are shared nationally when beyond the 500nm border

<u>Kidney-Pancreas</u>

- Waitlist mortality is essentially unchanged against models
- Graft failure rate is modeled at earliest graft failure and does not use the updated definition from 2018

All the simulations proposed have broader sharing than current allocation systems. It is possible that could cause a shift from driving to more flying.

1CR, 1CR steep and 1CR shallow all have very similar transplant rates when evaluating the maps.

<u>Subgroups of note</u>

Although overall transplant rates declined, several subgroups of interest experienced increased access to transplant with broader sharing.

- Pediatric kidney transplant rates increased
- High CPRA transplant rates increased (KP and PA candidates)
- Relatively more transplants occurred in
    - African Americans
    - Candidates with dialysis 10+ years
    - 0-DR mismatch

<u>Summary of discussion:</u>

One member asked for clarification on the difference between the improvements in transplant rates compared to "relatively more transplants' for the subgroups. The SRTR explained that "relatively more transplants" referred to the percent of transplants metric. The pancreas chair questioned whether there was sufficient information to make a policy decision when the SAM is not reliable for transplant rates or transplant totals. The SRTR staff explained that the SAM modeling is not an accurate predictor for total transplant count as it is a programming limitation, however it is capable of measuring the direction of change for transplant subgroups, distance rates and other parameters of transplant system. It was also emphasized that because SAM can predict waitlist times, that metric can provide an insight into transplant counts.

One member asked if waitlist time included active and inactive candidates, which SRTR confirmed. A member asked if waitlist mortality is a more accurate indicator than transplant counts. SRTR explained that the waitlist mortality metric did not vary significantly between models.

One member asked about whether travel distances reflect particular travel methods. SRTR explained that current modeling only represents travel distance and that it would be necessary for committee members to determine methods of travel based on their clinical experience.

Members discussed the issue of unpredictable organ acceptance behavior that may change with the implementation of new policy. The Pancreas chair expressed concern that some of the most significant metrics were not applicable in this model such as transplant counts, transplant rates and discard rates. An SRTR staff member explained that these metrics are typical for all types of policy development and have been used successfully in the past.

Upcoming Meetings

- December 14, 2018
- December 17, 2018