

OPTN Kidney Transplantation Committee

Meeting Summary

November 28, 2022

Conference Call

Martha Pavlakis, MD, Chair

Jim Kim, MD, Vice Chair

Introduction

The Kidney Transplantation Committee (the Committee) met via teleconference on 11/28/2022 to discuss the following agenda items:

1. Welcome and Announcements
2. Focused Discussion: Longevity Matching

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

1. Welcome and Announcements

Staff and Committee Leadership welcomed the Committee members.

Summary of discussion:

There were no questions or comments.

2. Focused Discussion: Longevity Matching

The Committee continued their discussions on longevity matching.

Presentation Summary:

The Committee reviewed a summary of their previous discussion on longevity matching. Members commented:

- There is not clear consensus in the community on what the goal should be for Estimated Post Transplant Survival score (EPTS) 21+ candidates
- The goal of Continuous Distribution (CD) 1.0 is to convert to the new framework and remove arbitrary hard boundaries, without causing unnecessary or detrimental shock to the system
- Candidates with EPTS score 21+ should have equal access
- The EPTS and Kidney Donor Profile Index (KDPI) calculations should be revisited; this would be a future project outside of CD 1.0
- Perhaps more focus should be given to ensuring appropriate weight is given to waiting time/time on dialysis
- It's difficult to determine impact of modeled scenarios without volume numbers

Initially, a straw poll indicated the Committee was interested in tabling further discussion on longevity matching until a future iteration of CD. However, further discussion indicated the Committee may be interested in exploring further options for an EPTS rating scale beyond the binary top 20 EPTS for top 20 KDPI.

Committee members were then asked some follow-up questions in preparation for the next discussion:

- What should be the goal for the longevity matching attribute? What would you like to see this attribute achieve?
- What should the goal be for candidates with EPTS scores between 21 and 100? Equalized access or varied?
- Based on the previous discussion and review, how would the Committee like to proceed?

Some members responded ahead of the meeting:

- Support for maintaining top 20 to top 20 matching but add in high EPTS/KDPI matching
 - Keep KDPI 0-20 percent to EPTS 0-20 percent matching but add in KDPI greater than 85 percent to EPTS greater than 85 percent matching
 - Expected survival decreases after KDPI 85 percent; Candidates are consented to receive KDPI greater than 85 percent kidneys
 - Concern for lack of data to support longevity matching for KDPI 21-85 percent
 - Longevity matching should place highest quality grafts into candidates with longest expected graft survival; Also to help expedite placement of KDPI greater than 85 percent kidneys
 - Consider addition of KDPI greater than 85 percent to EPTS greater than 85 percent matching along with waiting time (tradeoff curve)
 - Revisit how EPTS and KDPI are calculated as a future project

For the purpose of modeling, the Committee then reviewed options for the longevity matching rating scale to include:

Top-20/Top-20

- This option most closely mimics current policy
- KDPI 0-20 percent kidneys: Top 20 percent EPTS candidates have additional priority
- KDPI 21-100 percent kidneys: EPTS 0-100 percent candidates have equal access, all else equal
- This rating scale would be implemented using priority attribute points and a donor modifier

Top-20/Top-20 and Bottom 15/Bottom 15

- KDPI 0-20 percent kidneys: Top 20 percent EPTS candidates get additional priority
- KDPI 21-85 percent kidneys: All candidates have equal access
- KDPI 86-100 percent kidneys: EPTS greater than 85 percent candidates have additional priority

Expanded Longevity Matching

- Expanded longevity, no peaks: this scale was included in the first round of Organ Allocation Simulator (OASIM) modeling and matches EPTS and KDPI scores in a linear fashion
- Peaks no correction: this scale prioritizes EPTS scores for their corresponding KDPI scores, with gradually decreasing priority for other KDPI kidneys
- Peaks with correction: this scale is similar to the peaks option, but adds a correction factor to equalize access across EPTS categories

To help inform discussion, the Committee also reviewed a chart of projected transplant rates by EPTS for the various longevity matching rating scale options, as developed by the Massachusetts Institute of Technology (MIT).

Summary of discussion:

A member favored expanded longevity matching, as current matching is inefficient. The member further agreed EPTS and KDPI calculators should be revisited. The member commented an expanded longevity

matching rating scale should be included in the first iteration of continuous distribution, as this can be revisited and adjusted moving forward.

Members commented they would not be in favor of an option that projects a transplant rate decrease for EPTS 0-20 percent candidates. The Chair asked the Committee if they are comfortable with an option that could impact a candidate's time on dialysis in order to match with a kidney that could last longer. The Chair also commented it is difficult for the Committee to make a decision on longevity matching on patients' behalf, as individual patient opinions may differ. The Chair also commented current policy requires candidates to be consented to receive high KDPI kidneys, which should also be considered.

A member commented mathematical optimization and modeling may help find a rating scale version that makes access more equal. Staff also reminded the Committee they also have the ability to adjust the weight of the attributes in modeling scenarios. The Vice Chair commented the transplant rate graph is a crude way of looking at the effect of different rating scale options, and there would still be considerations for how all of the attributes work together. The Vice Chair further commented including an expanded longevity matching rating scale in the first iteration of continuous distribution sets the system up for further refinement going forward.

A member commented the goal of longevity matching should be to make the matching more equitable and have roughly the same transplant rate across all EPTS groups. The Vice Chair commented the system should make sure that the low KDPI kidneys are going to the right candidates and that the low EPTS candidates are not getting priority for high KDPI kidneys. The Vice Chair expressed support for exploring the peaks with correction scale in future modeling. The Chair commented they would eliminate the peaks with no correction scale from consideration as it shows a decrease in access for the EPTS 0-20 percent group. A member commented if there are other factors that would get drastically affected by each of the rating scale options. Staff responded that all attributes are correlated, so changes to one would impact other attributes via weights. Further mathematical optimization will help inform this with the goal of finding a point at which there is the most benefit to longevity matching without doing a disservice to other attributes such as waiting time.

The Chair commented the results shown assume a high weight on longevity matching, which aggrandizes the effect of the rating scale. If the weight on the attribute is reduced, it lessens the effect. Staff commented the Committee could try different weights for the attribute with future modeling and mathematical optimization, and that narrowing down the rating scale options to be modeled will help expedite those results. The Committee discussed whether there are any rating scales they would remove from consideration.

The Chair recommended removing the peaks without correction rating scale from consideration. Other members agreed. A member recommended modeling the expanded longevity matching without peaks and the peaks with correction rating scales.

A member asked what the distribution of transplants occurring is among the different EPTS groups. Staff responded it is scaled so that it is evenly distributed and mapping tables are updated each year. The Chair commented that the 86-100 percent EPTS range is higher because those candidates are consenting to receive higher KDPI kidneys with reduced longevity. A member commented the Committee will also need to consider patient consent. Staff commented the Committee will be evaluating policy language and any changes needed as part of the project.

Members supported modeling the top 20/top 20 and bottom 15/bottom 15, expanded longevity without peaks, and the peaks with correction rating scales. Members also agreed the top 20/top 20 rating scale could be a default option if modeling is not favorable as it is closest to current policy.

Members commented more metrics would be helpful to inform decision making. Staff informed the Committee that the Massachusetts Institute of Technology partners will be providing additional metrics. Ideas for more metrics included transplant rate, dialysis time, qualifying time, and one year graft survival.

Next Steps:

The Committee will continue discussing longevity matching on a future call.

Upcoming Meetings

- December 12, 2022 - Teleconference

Attendance

- **Committee Members**
 - Martha Pavlakis
 - Jim Kim
 - Chandrasekar Santhanakrishnan
 - Asif Sharfuddin
 - Elliot Grodstein
 - Jesse Cox
 - Marilee Clites
 - Patrick Gee
 - Peter Lalli
 - Precious McCowan
 - Jason Rolls
- **HRSA Representatives**
 - Jim Bowman
 - Adrienne Goodrich-Doctor
- **SRTR Staff**
 - Jon Miller
 - Peter Stock
 - Caitlyn Nystedt
- **UNOS Staff**
 - Lindsay Larkin
 - Kayla Temple
 - Joann White
 - Keighly Bradbrook
 - Kieran McMahan
 - Kim Uccellini
 - Krissy Laurie
 - Lauren Motley
 - Matt Belton
 - Ross Walton
 - Sarah Booker
 - Thomas Dolan
 - Tina Rhoades
 - James Alcorn
 - Ruthanne Leishman