OPTN Ad Hoc Multi-Organ Transplantation Committee
Meeting Summary
May 15, 2024
Conference Call

Lisa Stocks, RN, MSN, FNP, Chair

Introduction

The Ad Hoc Multi-Organ Transplantation (MOT) Committee, the Committee, met via WebEx teleconference on 5/15/2024 to discuss the following agenda items:

1. Multi-Organ Transplant Allocation Scheme Overview
2. Organ Snapshots: Hearts and Lungs
3. Values Prioritization Exercise: Design and Example Profiles
4. Lung Monitoring Data Report
5. Open Forum

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

1. Multi-Organ Transplant Allocation Scheme Overview

Staff provided an overview and timeline for the development of a multi-organ allocation scheme that will help organ procurement organizations (OPOs) prioritize MOT combinations across multiple different match runs.

Summary of Presentation:

The plan is to distribute a values prioritization exercise (VPE) during the summer of 2024 so the committee can review the results during its August 2024 meeting. Additionally, the previously requested descriptive data as well as the modeling for waitlist mortality and post-transplant survival should be available for the meeting as well so the committee can work to finalize MOT allocation priorities.

Summary of Discussion:

> **The Committee did not make any decisions.**

- There were no comments or questions from the committee members.

2. Organ Snapshots: Hearts and Lungs

Representatives from the Heart and Lung Transplantation Committees presented an overview of allocation policy for each organ type. The intent of this review was to increase committee members' understanding of candidates listed for organs outside their area of expertise. This will also help inform the discussion of the values prioritization exercise.

Presentation summary:

Heart Allocation

The Heart Committee representative provided an overview of each of the heart statuses for both adult and pediatric candidates, as shown below:

Adult

- Status 1: Critically ill, mechanical support, hospitalized
- Status 2: Hospitalized with mechanical support or severe ventricular arrhythmias (50% of transplant candidates) (13 days, previously 7 days)
- Status 3: Hospitalized and have complications with ventricular assist device (VAD)
- Status 4: Stable with a VAD or serious heart condition e.g. congenital heart disease
- Status 5: Listed for a heart and at least one other organ (and doesn't meet criteria for 1 – 4)
- Status 6: Stable without a need for mechanical support or IV meds

Pediatric

- Status 1A: Hospitalized with breathing support and/or high-dose IV meds
- Status 1B: May or may not be hospitalized with IV meds
- Status 2: Meet the requirements for transplantation but do not need IV meds or other hospital services

The member also provided information on median time to transplant for heart candidates. This ranged from 5 days for adult status 1 candidates to 384 days for adult status 5 candidates.

Summary of Discussion:

> **The Committee did not make any decisions.**

A member asked about where the heart/lung candidates fit within the statuses. The Heart Committee representative responded that it depends on the condition of the heart as they do qualify for MOT Status 5 if their heart is stable, but the volume of heart-lungs is lower than the heart-abdominal organ combinations. Additionally, either the lung or the heart will pull the heart-lung candidates into a higher status. The member responded that heart-lung candidates usually fall within Status 4 or 5 and can depend on how OPOs run their lists.

The Chair noted that this information will be available as the committee works on the values prioritization exercise. There was a level of surprise that Status 5 candidates make up so many MOTs. It was noted that as heart patients become sicker and require hospitalization, the risk of primary graft dysfunction increases and becomes a contraindication for a heart-kidney transplant.

A member asked why the median time to transplant was not calculated for pediatrics. Staff responded that the information was not part of the 5-year data report but would be included as part of the MOT data request.

Lung Allocation

The Lung Committee representative provided an overview of current lung allocation policies.

Summary of Presentation:

Lung allocation policy is based on the continuous distribution framework which uses a composite allocation score (CAS) to determine the candidate priority on a match run. The CAS subscore comprises of medical urgency, post-transplant survival, biological disadvantage and patient access. The median CAS subscore (prior to placement efficiency points) is approximately 24 points, with a score higher than 55 being rare even though the maximum CAS is 100.

Travel efficiency and proximity efficiency are added at the time of the match run based on the location of the donor.

Each attribute has a rating scale which is multiplied by the attribute weight. For example, an adult candidate is assigned a waiting list survival rating based on clinical data enter and that rating is multiplied by the weight assigned to waiting list survival to get the waiting list points.

Pediatric candidates under the age of 12 are assigned to pediatric priority 1 or 2. While the waiting list and post-transplant survival scores used for candidates over 12 are well-defined, we did not have similar calculations for candidate aged 0-11. Therefore, with pediatric priority 1 candidates and pediatric priority 2 candidates with estimated waitlist survival of 247 and 325 days respectively, all candidates under age 12 are assigned 18.6336 points for this attribute. In addition to these assigned scores, all candidates registered before age 18 receive 20 additional points for patient access as pediatric candidates.

For the post-CD era, median time to transplant was shortest for the most medically urgent candidates.

Summary of discussion:

The Committee did not make any decisions.

A member asked about the average proximity points being added to the score. The Lung Committee representative noted there has been an increase in distance traveled with continuous distribution and it depends on how far a transplant program is willing to travel for organs. The maximum number of additional points are 5 for travel efficiency and 5 for proximity efficiency, so the added score could be between 0-10.

3. Values Prioritization Exercise: Design and Example Profiles

Staff provided an overview of a values prioritization exercise and how the attributes can help compare candidates.

Summary of Presentation:

Staff noted that the exercise would compare candidates that are ranked on different match runs, but not compare candidates that are ranked on the same match run since this is already determined by the individual organ allocation system. The same attributes would be used across organ types and should only include those that are expected to impact the committee's decision on allocation across match runs.

Staff provided an example of three candidates using the attributes organ registration, medical urgency, sensitization, candidate age group, and prior living donor. The example compared kidney alone, heart-kidney, and liver-kidney candidates using the various attributes. Staff presented several potential attributes such as alternative therapies, median time to transplant, distance, and blood type. Previous discussions focused on whether the candidates have other options that would allow them to wait for another offer. This might only apply to kidney candidates if they become medically urgent due to loss of dialysis access. Heart candidates on a ventricular assist device (VAD) might also have other options.

The median time to transplant was excluded because comparable data was not currently available although it will be part of the committee's data request.

Distance and blood type are accounted for in the organ allocation system in that higher status candidates have access to organs over a greater distance. Additionally, the allocation system varies in how organs are allocated based on blood type such as identical versus compatible and MOT prioritization will probably be driven more by medical urgency statuses.

Summary of discussion:

The Committee did not make any decisions.

A member asked if the types of donors should be considered, similar to how kidney allocation is stratified by donor kidney donor profile index (KDPI). For example, a high Model for End-Stage Liver Disease (MELD) patient might not need the best kidney available but could use the first one that becomes available. Staff noted that for the first iteration of attributes for the VPE, the committee is assuming the donor is younger with a lower KDPI. The committee could consider other donor characteristics later when updating the exercise. The member responded by noting that some recipients need to have a lower KDPI kidney because it is associated with better outcomes, such as pediatrics.

A member asked if there would be multiple iteration of the VPE and expressed concern about response fatigue. Staff noted that the plan is to conduct the VPE with the committee only due to the timeline.

A member asked if the same attributes must be used for all the organ combinations. For example, prior living donor is not relevant for heart-lung. Another member added that it should be included but possibly weighed differently by organ combination.

A member provided an example of a previous kidney donor who is a Status 4 heart candidate and was never going to get an offer at Status 4, would you want that person to compete with Status 2s because of their prior living donor history? Another member responded that from a heart perspective, those patients are at greater risk of advancing kidney dysfunction because the heart disease will cause the kidneys to fail and create challenges with managing their disease. A member commented that adding priority for prior living donation should be included because of past altruism. The Chair added that it might be beneficial to look at the numbers because it might be small.

Next Steps:

- Review example candidate profiles for liver, kidneys, pancreas, and intestines during the June conference call.
- Committee to agree on attributes to compare candidates.

4. Lung Monitoring Data Report

Research staff provided an overview of the multi-organ data from the 1-year lung continuous distribution monitoring report.

Presentation summary:

The monitoring report evaluated data 1-year pre and post continuous distribution implementation. Research staff noted that all multi-organ analyses are separate from lung-alone analyses.

Waiting List Mortality Rate by Multi-Organ Type

- Heart-lung, lung-kidney, lung-liver, and lung with 2 or more organs.
- Mortality rate is defined as deaths or removal for too sick per 100 patient years.
- Results show no difference in the waiting list mortality rates for these combinations between the pre and post implementation era.
- It was noted that the "post policy era" is not shown due to the small sample size.

Transplant Rate by Multi-Organ Type

- Transplant rate is calculated as number of transplants per 100 patient years.
- There are no significant changes in the transplant rate for any individual multi-organ type.

- The heart-lung transplant rate is quite a bit lower than the lung-kidney and lung-liver combinations.

Median Time to Transplant by Multi-Organ Type

- Median time to transplant for heart-lung increased from 73 days in the pre-implementation era to 124 days in the post-implementation era.
  - Heart-lungs were predominantly placed using the heart match run.
- Median time to transplant for lung-kidney decreased from 69 days in the pre-implementation era to 31 days in the post-implementation era.
- Median time to transplant for lung-liver decreased slightly from 110 days in the pre-implementation era to 103 days in the post-implementation era.

Distance from Donor Hospital to Transplant Program by Multi-Organ Type

- Heart-lung – distance increased from a median distance of 218 to 303 nautical miles.
- Lung-kidney – distance increased significantly from 122 to 713 nautical miles.
- Lung-liver - distance increased from 108 to 366 nautical miles.

Research staff noted that while the distance for lung-kidney has increased significantly, it aligns with the overall increase in distance under lung continuous distribution.

Sequence Number of Recipient by Multi-Organ Type

- The sequence number for lung-kidney increased from a median of 4 to a median of 12.
- The sequence number for lung-liver increased from a median of 4 to a median of 8.5.
- Heart-lung transplants were excluded from the analysis because almost all heart-lungs were allocated off the heart match run.

Summary of discussion:

> **The Committee did not make any decisions.**

The Lung Committee representative commented that the committee has requested additional information about the scores and subscores. Additionally, the number of heart-lungs has not increased, which is an area of concern for the committee.

5. Open Forum

The Committee received a request from a public member to provide comments to the committee. This was part of the process that allows members of the public to request the opportunity to speak to OPTN Committees.

Presentation Summary:

The member summarized an incident where a highly sensitized pediatric kidney candidate at their center missed an opportunity to receive a kidney offer. The member noted that this was not a result of an OPTN policy violation as the kidney was originally offered to a kidney-pancreas candidate. The series of events led to the kidney being offered to another candidate following a subsequent decline of the kidney-pancreas. The member commented that it underscores the importance of the MOT Committee's current work to ensure that kidneys are available for kidney alone candidates, especially those in special need such as pediatric, highly sensitized, and medically urgent candidates.

Summary of discussion:

Several committee members asked additional questions about the case. A member commented that this case highlights some of the issues with multi-organ allocation and the potential to disadvantage certain populations of patients. Another member commented about the support for exceptions for certain populations. Lastly, a member noted that late turndowns have been an issue for simultaneous kidney pancreas offers.

Upcoming Meeting

- June 12, 2024

Attendance

- **Committee Members**
  - Lisa Stocks
  - Sandra Amaral
  - Alejandro Diez
  - Marie Budev
  - Vincent Casingal
  - Alden Doyle
  - Rachel Engen
  - Jonathan Fridell
  - Shelley Hall
  - Kenny Laferriere
  - Oyedolamu Olaitan
  - Nicole Turgeon
- **HRSA Representatives**
  - Jim Bowman
- **SRTR Staff**
  - Katie Audette
  - Jon Miller
- **UNOS Staff**
  - Jessica Higgins
  - Samantha Weiss
  - Chelsea Weibel
  - Sara Langham
  - Sarah Roache
  - Robert Hunter
  - Susan Tlusty
  - James Alcorn
  - Kaitlin Swanner
  - Houlder Hudgins
  - Ben Wolford
  - Ross Walton
- **Other Attendees**
  - Meredith Barrett