OPTN ORGAN PROCUREMENT AND TRANSPLANTATION NETWORK

OPTN Thoracic Committee: Continuous Distribution of Lungs Workgroup
Meeting Minutes
May 30, 3019
Conference Call

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Introduction

The Lung Workgroup met via Citrix GoTo teleconference on 05/30/2019 to discuss the following agenda items:

1. Continuous Distribution: Geography

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

1. Continuous Distribution: Geography

The Workgroup continued the discussion regarding travel mode. SRTR discussed how the Workgroup might request travel mode-related data.

Summary of discussion:

To begin the discussion, a Workgroup member questioned how real data concepts would be determined, such as at the time of organ offer, projected operating room time or average time. The Workgroup member stated that such information may not be available at the time of organ offer, and therefore adopting a "live data" concept may not be realistic. However, if there are local conditions that consistently make distance less meaningful (e.g. typical traffic or "rush hour"), this can be factored into estimated travel time. UNOS staff continued the discussion by reviewing the polling results from the May 16th meeting call regarding travel distance.

Next, SRTR staff discussed a potential data request, including estimating travel time between donor and recipient facilities. One Workgroup member asked whether the SRTR had data about the relationship between distance or travel time and organ utilization. SRTR staff replied that no data analysis has been conducted comparing when organ offers are turned down and the distance at which the organ is accepted at. A Workgroup member suggested that SRTR analyze the donor distance from transplant hospital and likelihood of organ discard. For example, there was an increase in lung discards since the removal of DSA. UNOS staff clarified that the discard rate did change, but the utilization rate remained stable. Also, the use of perfusion nearly doubled from pre to post and there was an increase in the use of DCD lungs.

Another Workgroup member asked if the data request would use only descriptive statistics, or if it would include allocation modeling. UNOS staff clarified that the data analysis will use descriptive statistics at first in order to verify that the correct thresholds regarding travel mode are correct prior to modeling. This Workgroup member went on to recommend that historical data be analyzed and agreed that all possible pairings (donor hospitals to transplant hospitals) be compared against historical data. Workgroup members also discussed how the data analysis will determine between different modes of transportation (e.g. fixed wing versus car). SRTR stated that in their estimates, the data will analyze both pre and post policy implementation data, along with analyzing data by OPTN region. The advantage of a regional analysis is that Workgroup members could weigh in on the results and compare them to what really occurs in their respective region.

Next, Workgroup members proposed various other variables that could be included in the data request. For example, one member supported including ischemic time because of its importance when correlated with travel time. However, this member recommended to not include outcomes as a variable until after ischemic time is modeled. One Workgroup member was concerned about excluding analysis on OPOs that have their own surgical centers, because there may be discrepancies in the distances traveled by donor hospitals. Though UNOS staff recommended using the donor hospital over a procurement center for calculating distance, the Workgroup member was still concerned that the estimated distances may be too drastically different to be accurate. This Workgroup member suggested conducting a separate data analysis on procurement centers. UNOS staff clarified that they do not have data on which organs go through a procurement center, though another Workgroup member clarified that candidates can be marked as "going to be recovered at a different facility then the originating facility" by OPOs in DonorNet. Yet, other Workgroup members stated that if there is no reliable data being captured on procurement centers, then this may not be feasible to include in the data request. Also, though OPOs may track this data, there are a minority of procurement centers operating. Most Workgroup members supported including ischemic time and not including procurement centers into the modeling at this time.

A few Workgroup members voiced concerns about the "rural vs. urban" variable. Specifically, a member asked whether this variable was being used as a surrogate for population density around a transplant program. Though SRTR staff clarified that there are no rural transplant centers, one Workgroup member stated that their population of 100,000 is not considered "urban". Furthermore, this member replied that if their program is not considered rural, then no program is rural and therefore the variable should not be included. Other Workgroup members supported analyzing population density around the donor hospital, such as the number of donors per square mile. UNOS staff clarified that the analysis will be based on the donor hospital, not the transplant program. SRTR clarified that they are trying to model the transition between driving and flying. The variables are strata with which to analyze the data with, not a variable to include into the modeling.

Next, the Workgroup members discussed which time cut off points should be included in the data request. One member clarified that SRTR will first model estimated drive time between donor and transplant hospitals. Second, the data analysis will estimate direct distance between the hospitals (estimated flying time), and then will use the cutoff times to assign a travel mode (for example, traveling greater than 2 hours will be assigned flying as the travel mode). This model will be compared to pre-allocation changes to see how predictive times would change. Next, SRTR staff asked the Workgroup to determine the time cut-offs to use in the data request (e.g. 1 hour for driving, 1.5 hours for flying). SRTR asked for three cut-off times for the descriptive statistics. Based on the polling results from the May 16th meeting and published literature, UNOS staff recommended that 1 hour, 1.5 hours and 2 hours be chosen as the three cut off times. One Workgroup member did not see the benefit in including three cut off times because the May 16th polling results did not support that many centers switch from driving to flying at 2 hours. However, this Workgroup member stated that if there is no detriment to including three cut off times, then they would support using 1 hour, 1.5 hours and 2 hours. SRTR clarified that including three cut off times may allow for the analysis to show if there is a "transition zone", and that including three cut off times will not make the data analysis take any longer to perform. Other Workgroup members supported the three cut off times because this may prevent having to go back and redo the data request.

One Workgroup member asked whether the third cut off time could be when the driving time becomes less than the flying time. SRTR responded that the algorithm may be able to incorporate this, but there would need to be a lower time limit. The Workgroup member stated

that the flying will never be below a certain threshold, and that this is how people choose which mode to use. For example, people ask themselves if it is faster to fly by taking into account how long it would take to drive to and from an airport. SRTR staff clarified that when the liver group modeled flying time, they incorporated an estimated time for driving to and from the airport. However, the Workgroup member commented that if such data was derived from commercial flights, then the flight time may be inaccurate because it does not account for the use of charter planes or helicopters. In this way, the actual drive time may be less important than whether the driving time becomes less than flight time. In the end, the Workgroup members agreed to adopt the cut off times of 1 hour, 1.5 hours and 2 hours, because the results may not vary even if the modeling incorporated the time when driving becomes less than flight time.

Upcoming Meeting

- June 13, 2019