

**OPTN Thoracic Organ Transplantation Committee
Continuous Distribution Data Taskforce
Meeting Summary
June 11, 2020
Conference Call**

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Introduction

The Thoracic Committee's Continuous Distribution Data Taskforce met via Citrix GoTo teleconference on 06/11/2020 to discuss the following agenda item:

1. Alternate Approaches for Incorporating Efficiency in Continuous Distribution

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

1. Alternate Approaches for Incorporating Efficiency in Continuous Distribution

The Taskforce discussed five alternate approaches, other than travel cost, for incorporating efficiency in continuous distribution: (1) minimizing recovery team travel, (2) proximity efficiency, (3) likelihood of offer acceptance, (4) composite score "aura," and (5) organ offer efficiency. The Vice Chair explained that the goal of the discussion is to determine whether the Taskforce believes these concepts should be developed further, and if so, if the concepts could be incorporated in the first iteration of continuous distribution, or if they will require more time to develop.

Summary of discussion:

Minimizing Recovery Team Travel

This approach would preserve surgeon, staff, and operating room availability by assigning maximum points to candidates for whom transplant centers are willing to accept locally recovered lungs. Candidates from transplant centers that choose to fly out would receive a lower rating, proportional to the estimated round trip travel time. Members expressed concerns about the availability of local surgeons for pediatric donors and whether surgeons would support this approach. A member said that there are a lot of things that can go wrong during the donor operation that can make the transplant procedure more difficult for the implanting surgeon. A member agreed, noting that there is a lot of variability in how surgeons handle the donor operation, and that surgeons may not find it appropriate to include a measure promoting local recovery in allocation.

A member noted that local recovery does not necessarily result in cost savings because sometimes it is cheaper for the transplant program's recovery team to travel using the flight company that they have under contract. When the transplant program uses local procurement, the cost of air travel is cut in half but there is the additional cost of the procuring surgeon and the usual acquisition fees. The member said that they are also using ex vivo lung perfusion (EVLV) more in local procurement, which is an additional cost. The member noted that organ procurement organizations (OPOs) may also have concerns about local recovery because if the organ does not get used, then the OPO does not get paid. The member explained that her transplant program works with surgeons that were trained at her program but are now located at other programs across the country. The member said that a few other programs are doing this, but those relationships have to be established. A member expressed concern

about encouraging local recovery before the infrastructure exists, since not every transplant program has built those relationships. The Vice Chair said that this approach may not be worthwhile if it would not change costs much. A member suggested looking at data from the pandemic to see how much programs were spending on local recovery.

UNOS staff asked if there is an inefficiency related to traveling to procure an organ that can be mitigated through local procurement. UNOS staff asked what is that inefficiency related to organ procurement teams traveling long distances, and whether this should be introduced as a separate attribute that could be defined with a rating scale. The Chair recommended stepping back and asking more broadly whether there is an inefficiency for accepting an organ that is far away, especially since surgeons may not support an approach that encourages local recovery.

Proximity Efficiency

The Taskforce identified several inefficiencies associated with having to travel farther for an organ, including OPO coordination with multiple teams traveling in from longer distances; cost; availability of procurement teams; the impact on donor operating room time; and the risk that organ will not be used because of all these factors. A member noted that a lot of these things cannot be directly measured.

A member said that the fundamental question the group is trying to answer is how to prioritize two otherwise equal candidates when one is close to the donor hospital and one is some distance away, and prioritize those candidates in a way that reflects the inefficiency of traveling for a candidate farther from a donor hospital. There are two parts to that process: (1) providing a mechanism to rank those two candidates in terms of efficiency, and (2) determining how much importance efficiency will have relative to the other donor characteristics. The member noted that the relative inefficiency between those two donors is proportionate to the distance between them. The member suggested assuming that the relationship is linear until there is more robust data to build into the system. Alternatively, this could be evaluated in terms of population density or candidate density rather than distance.

Taskforce members agreed that there is not currently a way to measure efficiency beyond knowing that it is proportional to distance. A member noted that the Committee will have to ensure that this approach is compliant with the Final Rule. A member said that there is some evidence of inefficiency from broader sharing of other organs, but it is challenging to use that data to inform the composite allocation score. For example, one study found that costs went up for lung transplants when allocation expanded to a 250 nautical mile circle.¹

HRSA staff asked if Taskforce members have experienced issues of organ discards due to travel for organs. Members did not report issues with discards but noted that delays can change the quality of the organs and impact outcomes. Members said that there are more delays in procurement for organs at greater distances, and it is generally more efficient when all teams are local. A member noted that OPOs will go to the operating room if the donor has become unstable so that the organs can be placed locally. Another member said that discards are not common because OPOs have back-ups for every offer.

UNOS staff recommended reviewing the transportation cost curve to consider what else could be included in relation to traveling farther distances. UNOS staff explained that later in this project, the Committee will have the opportunity to use simulation modeling to see how the composite allocation score works from a system level, and how candidates would be ranked. The analytical hierarchy process (AHP) exercise will provide an initial baseline for how the attributes are weighted against each other, but

¹ Varun Puri et al., "Unintended consequences of changes to lung allocation policy," *American Journal of Transplantation* 19 (2019): 2164.

the Committee will be able to change the attribute weights and the rating scales in simulation modeling to shape the system so that it aligns with the goals of the Committee and the community.

A member said that efficiency should never be prioritized more than patient access or medical urgency, and suggested that the efficiency measure could serve as a tiebreaker, like waiting time. For example, for two candidates with the same lung allocation score (LAS), the travel efficiency measure would preference one over the other. A member said that is exactly what the composite allocation score will do, just on a more granular level. The Committee will develop a composite allocation score that will essentially determine the instances in which LAS is high enough to overcome inefficiency, and when proximity overcomes the difference in LAS. UNOS staff said that based on preliminary AHP results, efficiency would be weighted at less than 10% so it would essentially function as a tiebreaker. The preliminary AHP results are heavily weighted towards LAS, so that one point of LAS works out to about 300 miles of distance. UNOS staff noted that the Committee will be able to have a richer discussion about these tradeoffs when comparing current policy to the AHP results.

Likelihood of Offer Acceptance

This approach would reduce organ placement time because candidates would receive proportionally fewer points for lower expected likelihood of acceptance. The Taskforce previously discussed how this could work with distance, but this approach could also take into account factors unique to candidates, such as specific donor/candidate combinations, like height. The Vice Chair said that this concept, as it relates to distance, aligns with the general concept of using distance to account for various inefficiencies, since programs are less likely to accept offers at longer distances, especially for patients who are not as sick. The Vice Chair said that this concept also incorporates that idea of selecting the closer candidate for two otherwise equal candidates.

Composite Score "Aura"

This approach would reduce the number of offers made to different transplant programs, because a program would be permitted to accept an organ for one candidate, but transplant the organ into another candidate whose composite score falls within a prescribed range of scores. The Vice Chair opposed this approach because it would be susceptible to gaming and would be detrimental to smaller programs. A member agreed that this approach would allow programs to bait-and-switch organ offers.

Organ Offer Efficiency

A member suggested considering the inefficiency of expanding the total number of candidates and transplant programs receiving organ offers. The member asked if there is any data to predict time to placement based on the number of programs and candidates on the list. UNOS staff said an unpublished article describes an optimal number. If there are too many candidates, it is inefficient because the OPO is trying to coordinate with too many people. If there are too few candidates, there is not enough competition. UNOS staff explained that the composite score aura was one way to try to include population density or hospital density into this concept so that the OPO would only have to coordinate with a smaller number of hospitals at a time, though members had concerns with that approach.

The member said another way to think about it is how far an OPO needs to go to find someone with a meaningfully higher urgency score, though this approach would eliminate offers to the really urgent candidate who is far away. The member suggested thinking about it in terms of the complexity of placing the organ based on the increased number of candidates and transplant programs that require coordination at longer distances. The member explained that for a donor in New England, the OPO would have the same complexity of allocation within a shorter distance than for a donor in St. Louis. The Vice Chair asked if this approach would involve setting benchmarks for the number of candidates and

programs considered on the match run, for example, 5 programs and 50 patients, regardless of the distance. The member said that the complexity is proportional to one of those two numbers. For example, if there are two transplant programs within 100 miles, the complexity is two at 100 miles. If there are 65 programs within 2,000 miles, then the complexity is 65. The rating scale would be a stepping-point curve instead of a smooth curve since transplant programs are distributed irregularly. The member was not necessarily advocating for this approach but said that it is another way of thinking about the problem. The member suggested that UNOS staff draw a curve for the number of transplant programs within a circle of distance from a donor hospital, noting that it would vary across the country. The member recommended that UNOS staff provide a map of the transplant programs to help the Committee to visualize this approach. HRSA staff suggested providing the size of the waitlist for each of those programs. The member acknowledged that the number of transplant programs is a rough estimate and said that considering the number of candidates with a high enough LAS to be included on the match run would refine that estimate further.

Next steps:

The Taskforce agreed that a general measure of proximity efficiency should be incorporated into continuous distribution at this time to reflect inefficiencies other than cost. The Taskforce agreed that this rating scale can be refined further in the future when more data is available. HRSA staff asked the Committee to keep the patient perspective in mind as they consider how to incorporate distance into the continuous distribution model.

Upcoming Meeting

- June 18, 2020 – Continuous Distribution Workgroup