

Notice of OPTN Policy Change

Modify Lung Allocation by Blood Type

Sponsoring Committee:	OPTN Lung Transplantation Committee
Policy Affected:	<i>Policy 10.1.C.1 Blood Type</i>
Public Comment:	August 24, 2023 – September 7, 2023
Board Approved:	September 22, 2023
Effective Date:	Pending implementation and notice to OPTN members (expected implementation date September 27, 2023)

Purpose of Policy Change

The purpose of this policy change is to modify how blood type is incorporated into lung allocation to provide more proportional access to lung transplantation for candidates of all blood types and to improve access to lung transplantation for blood type O candidates. The policy change updates the points assigned for blood type based on modifications to the rating scale that accounts for the proportion of donors with which a candidate is expected to be blood type compatible.

Proposal History

Continuous distribution of lungs was implemented on March 9, 2023.¹ One goal of continuous distribution is to increase transplant opportunities for patients who are medically harder to match² based on biological characteristics like blood type. Blood type O lung candidates can generally only receive organs from blood type O donors,³ so they received more points for blood type in lung continuous distribution policy than candidates of other blood types because they are compatible with fewer donors. Simulation modeling reviewed in the development of the lung continuous distribution policy indicated that the policy would increase transplants for blood type O candidates. However, the proportion of lung transplants performed for blood type O transplant recipients decreased in the first three months of continuous distribution compared to the previous policy.⁴ Further analysis found that under the continuous distribution policy, a higher proportion of blood type O donor lungs went to recipients of other blood types relative to the former policy; median waiting time for transplant increased for blood type O candidates and decreased for candidates of other blood types; and blood type O candidates had higher medical urgency points at the time of transplant relative to candidates of other blood types.⁵

¹ "Establish Continuous Distribution of Lungs," OPTN, Policy Notice, accessed September 22, 2023, available https://optn.transplant.hrsa.gov/media/b13dlep2/policy-notice_lung_continuous-distribution.pdf.

² Ibid.

³ Pediatric blood type incompatible lung transplants are permitted by OPTN *Policy 10.4 Eligibility Criteria* in certain circumstances given that "newborn infants do not produce isohemagglutinins, and serum Anti-A or Anti-B antibody titers usually remain low until the age of 12 to 14 months" per West, Lori J, Stacey M Pollock-Barziv, Anne I Dipchand, K. Jin Lee, Carl J Cardella, Leland N Benson, Ivan M Rebeyka, and John G Coles. "ABO-Incompatible Heart Transplantation in Infants." *The New England Journal of Medicine* 344, no. 11 (2001): 793–800. <https://doi.org/10.1056/NEJM200103153441102>.

⁴ "Lung Continuous Distribution Three Month Monitoring Report," OPTN, accessed September 22, 2023, available https://optn.transplant.hrsa.gov/media/fzhh1e5r/data_report_lung_committee_cd_07_13_2023.pdf.

⁵ OPTN Lung Transplantation Committee Meeting Summary for August 3, 2023, accessed September 22, 2023, available https://optn.transplant.hrsa.gov/media/x4sfpi05/20230803_lung-ms.pdf.

While evaluating why actual transplant volume for blood type O recipients did not match the modeling results, it was determined that the modeling overestimated blood type O transplant rates because the simulation allowed for recipients to receive lungs from donors of any blood type, regardless of compatibility. Based on this finding, trends observed in the policy monitoring, and concerns from the community about access to transplant for blood type O candidates, this policy change was released for a special two-week public comment period and rapidly approved by the OPTN Board of Directors for implementation to provide more proportional access to transplant by blood type so that candidates of all blood types have more proportional access to transplant relative to their representation on the waiting list. This change is also expected to provide candidates of equal medical urgency have more similar access to transplant, regardless of blood type.

Summary of Changes

This policy changes the points assigned for blood type in the lung composite allocation score (CAS) so that blood type O candidates receive 5 points, and the points assigned for blood types A and B are increased proportionally based on donor compatibility. Candidates with blood type AB do not receive points for blood type because they are blood type compatible with donors of all blood types.

Blood type	Points assigned under initial continuous distribution policy	Points assigned based on this policy change
AB	0	0
A	0.0455	0.3032
B	0.2439	2.2382
O	0.4550	5.0000

Implementation

Transplant programs do not need to take any action for their candidates to receive updated points for blood type. However, transplant programs must educate staff on the changes to the points assigned to candidates for blood type as part of the lung CAS and update any professional and patient education materials accordingly. Regarding exception requests:

- Exception requests for the biological disadvantages score that are pending at the time of implementation will be withdrawn by the system
 - Pending exception requests are those that have not been resolved by the Lung Review Board (i.e., have not been approved or denied)
 - Pending exceptions at the time of implementation will not incorporate the updated points for blood type
 - These requests would be withdrawn by the system so that the Lung Review Board is not considering requests with outdated information
 - If the transplant program believes the candidate's lung composite allocation score with the blood type points adjustment does not appropriately prioritize the candidate for transplant, the candidate's transplant program may submit a new exception request
- Approved exceptions to the biological disadvantages score will remain in place
 - If the candidate's calculated biological disadvantages score is higher than the approved exception, then the system will use the calculated score (the system will use whichever value is greater between an approved exception and the calculated score)

- If the exception is no longer needed, the transplant program could choose to withdraw the exception
- If the transplant program believes the candidate’s approved exception does not appropriately prioritize the candidate for transplant, the candidate’s transplant program may submit a new exception request
- Previously denied exceptions to the biological disadvantages score will remain denied
 - If the transplant program believes the candidate’s current lung composite allocation score does not appropriately prioritize the candidate for transplant, the candidate’s transplant program may submit a new exception request

The OPTN will conduct outreach to transplant programs with candidates holding approved or unresolved exceptions to their biological disadvantages scores to notify them of the policy change. Transplant programs who have candidates with approved or pending exceptions to the biological disadvantages score are advised to review their candidates and assess if approved exceptions should be withdrawn by the transplant program; if pending exceptions withdrawn by the system should be resubmitted by the transplant program; and if any new exception requests should be submitted by the transplant program. Upon implementation, the OPTN will also contact any transplant programs who had candidates with pending exception requests for the biological disadvantages score to notify them that those exception requests were withdrawn by the system.

The OPTN Computer System will be updated with the modified points for candidate blood type so that the appropriate scores display in OPTN Waiting List, and so that the appropriate scores are used for allocation in the OPTN Donor Data and Matching System.

Affected Policy Language

New language is underlined (example) and language that is deleted is struck through (~~example~~).

10.1.C.1 Blood Type

Each lung candidate is assigned lung blood type points determined based on the proportion of donors the candidate could accept based on blood type compatibility, according to *Table 10-1: Points by Blood Type*. Candidates who are eligible to accept blood group incompatible donors according to *Policy 10.4.A Eligibility for Intended Blood Group Incompatible Offers for Deceased Donor Lungs* receive the same blood type points as other candidates in their blood group.

Table 10-1: Points by Blood Type

A candidate with a blood type of	Will receive this many lung blood type points
AB	0
A	0.455 <u>0.3032</u>
B	2.439 <u>2.2382</u>
O	4.550 <u>5.0000</u>

#