

Lung Continuous Distribution Three Month Monitoring Report

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By:

Samantha Weiss, MS; Chelsea Weibel, PhD;
Tatenda Mupfudze, PhD
UNOS Research Department

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Executive Summary

Monitoring began upon implementation of continuous distribution on March 9, 2023. Based on the first 3 months of data collection, compared to the pre policy era (December 07, 2022 - March 08, 2023), in the post policy era (March 09, 2023 - June 08, 2023):

Key Metrics

- The number of lung-alone transplants increased by 15.9% (from 672 to 779).
- Fewer candidates were removed from the waiting list due to death or being too sick to transplant (a decrease from 52 to 30).
- There was no negative impact on lung utilization (pre: 16.5%, post: 17.83%).
- The number of transplants decreased for blood type O recipients (from 308 to 276) and increased for recipients of all other blood types.
- The median distance between the donor hospital and transplant center increased overall from 193 nautical miles to 344 nautical miles.
- The number of registrations with at least one submitted exception request increased from 38 to 120.

Other Noteworthy Results

- The number of candidates ever waiting increased slightly from 1673 to 1789.
- The number of heart/lung candidates ever waiting decreased from 62 to 50.
- The greatest proportion of candidates removed from the waiting list for death or too sick to transplant were those with the highest medical urgency scores, lowest post-transplant survival scores, and highest CAS subscores.
- A larger percent of exception requests were denied (an increase from 15.4% to 32.4%).
- The number of transplants decreased for recipients aged 65+ years and increased for all other recipient age groups, most noticeably for those between 35 and 64 years.
- A larger percentage of transplant recipients had an approved exception request (an increase from 3.0% to 6.7%).
- Distances between the donor hospital and transplant center were greatest for recipients with the highest medical urgency scores, lowest post-transplant survival scores, highest CAS subscores, and both the highest and lowest CAS (with lungs for intermediate CAS scores traveling shorter distances).
- The number of heart/lung transplants decreased (from 18 to 12) and the number of lung/liver transplants increased (from 2 to 8).
- The non-use rates (pre: 8.34%, post: 7.98%) and percent of lungs perfused (pre: 9.67%, post: 10.05%) were similar.
- The median time from first electronic offer to cross clamp increased from 28.56 hours to 31.39 hours.
- The median sequence number of the final acceptor increased from 7 to 14.

Overall, it is still early post-implementation. Changes such as those to behavior or clinical practice may have an impact on the system. The implications of the policy change will continue to be monitored closely with regular reports to the OPTN Lung Transplantation Committee.

Background/Purpose

On March 9, 2023 the lung allocation policy switched to a continuous distribution framework. Continuous distribution (CD) uses a composite allocation score to determine the preferential order of candidates on a match run when a medically suitable lung donor becomes available. This point-based system replaces the previous, classification-based system. Under the classification-based system, candidates were first arranged into ordered groups (e.g., “blood type identical, within 250 nautical miles of the donor hospital”) and then, within each group, preferentially ordered by Lung Allocation Score (LAS). In contrast, continuous distribution does not use candidate groupings. All candidates are prioritized using a composite allocation score (CAS) that takes into account medical, biological, and other factors permitted by the Final Rule to determine preferential ordering on a match run. These attributes include:

- Medical urgency: a metric that captures the patient’s predicted 1-year survival on the waiting list without a transplant (this measure was a component of LAS)
- Post-transplant survival: a metric that captures the patient’s predicted 5-year survival were they to receive a transplant (a 1-year version of this measure was a component of LAS)
- Biological disadvantage: a measure of how disadvantaged a candidate is to receive a transplant based on aspects of their biology, including blood type, CPRA (calculated panel reactive antibody), and height
- Patient access: a measure that considers whether the candidate is pediatric or a prior living donor
- Efficiency: a measure that captures the efficiency of the transplant, in terms of both distance from the donor hospital to transplant center and logistical planning

The purpose of this report is to provide early metrics summarizing the impact of the policy change. In an effort to provide data as soon as possible, this report was produced before the 90 day data lag allotted by OPTN policy has fully passed; therefore, data are subject to change. As more data accumulate over time, more extensive analyses will be performed. The OPTN will respond to further requests by the OPTN Lung Transplantation Committee.

Committee Request

Monitoring reports using pre vs. post comparisons will be presented to the Committee after approximately 3 months, 6 months and then annually for 3 years following the allocation change.

The Committee will consider overall waiting list deaths and post-transplant deaths, as well as variance in waiting list deaths, post-transplant deaths, and distance between donor and candidate transplant hospitals as key metrics to evaluate the effectiveness of the proposal.

Metrics to be evaluated include:

- Waiting List
 - Number of candidates ever waiting, additions, and removals
 - Distribution of WLAUC and PTAUC
 - Population characteristics such as CPRA, prior living donor, height, age group at time of listing, and diagnosis group
 - Number of candidates by OPTN region
 - Candidate waiting time by OPTN region
 - Numbers of patient deaths, overall and by diagnosis group, medical urgency score, post-transplant survival score, and OPTN region
 - Overall waiting list mortality rate and transplant rate by diagnosis group, WLAUC and PTAUC groups, and OPTN region
 - Number of exception requests, overall and by diagnosis group
 - Number of multiorgan candidates
- Transplants
 - Number of recipients
 - Distribution of WLAUC and PTAUC
 - Population characteristics such as CPRA, prior living donor, height, age group at time of listing, and diagnosis group

- Number of recipients by OPTN region
- Patient post-transplant survival
- Number of recipients transplanted with an exception request, overall and by diagnosis group
- Distance between the donor hospital and transplant center
- Distance between the donor hospital and transplant center by medical urgency group, post-transplant survival, and by composite allocation score group
- Transplant rate changes by transplant program size (small, medium, large)
- Distribution of ischemic time
- Number of multiorgan recipients
- Utilization
 - Non-use rate by OPTN region and donation after circulatory death (DCD) vs. non-DCD
 - Utilization rate by OPTN region and DCD vs. non-DCD
 - Number & percentage of perfused lungs by OPTN region
 - Number & percentage of DCD lungs transplanted by OPTN region
 - Time from first electronic offer to cross clamp
 - Distribution of sequence number of the final acceptor

Analysis of post-transplant outcomes will be performed after sufficient follow-up data have accrued, which is dependent on submission of follow-up forms. The OPTN and SRTR contractors will work with the committee to define the specific analyses requested for ongoing monitoring for each update. The OPTN equity in access dashboard will also be used to evaluate the impact of this policy on transplant rates by various candidate attributes.

Methods

Data Sources:

Organ Procurement and Transplantation Network (OPTN) data were used for this analysis. The OPTN data system includes data on all donors, waitlisted candidates, and transplant recipients in the US, submitted by members of the OPTN. Continuous distribution was implemented on March 9, 2023. This report compares metrics for the 3 months before and after the implementation date. The dates for the pre and post era were defined such that both eras contain exactly 91 days, with the pre era spanning December 07, 2022 to March 08, 2023 and the post era spanning March 09, 2023 to June 08, 2023. In an effort to provide data as soon as possible, this report was produced with OPTN data as of July 07, 2023 and before the 90 day data lag allotted by OPTN policy has fully passed. Data are subject to change due to future database submission or correction.

All analyses described below compare metrics pre versus post policy change, unless otherwise stated. For categorical variables, counts and frequencies were reported. For continuous variables, medians and ranges were reported. Diagnosis groups utilized in this monitoring report align with those outlined in OPTN lung allocation policy: A- obstructive lung disease, B- pulmonary vascular disease, C- cystic fibrosis and immunodeficiency disorder, and D- restrictive lung disease {OPTN Policies, https://optn.transplant.hrsa.gov/media/1200/optn_policies.pdf Accessed 7/10/2023}.

Waiting List

Cohort: Candidates added to the lung waiting list, removed from the waiting list, or ever waiting for a lung-alone transplant from December 07, 2022 through March 08, 2023 (pre) and March 09, 2023 through June 08, 2023 (post) were included. A separate analysis was conducted for candidates listed for a lung-multiorgan transplant, which included all candidates waiting for a lung and at least one other organ from December 07, 2022 through March 08, 2023 (pre) and March 09, 2023 through June 08, 2023 (post).

Analysis: All of the CAS attributes were calculated based on clinical data entered in the OPTN Waiting List. For all candidates on the waiting list, a CAS subscore was calculated. This subscore summed all the CAS attribute points except for the efficiency points (i.e., medical urgency points, post-transplant survival points, biological disadvantage points, and patient access points). Efficiency points are not known until the time a match is made and the distance between the donor hospital and transplant center is known. For this reason, all analyses in this section used the CAS subscore, rather than the final CAS.

For all CAS attributes (including medical urgency, post-transplant survival, and the CAS subscore), candidates have both a calculated and a match score; these differ when a candidate has an approved exception request, which causes the match score to be higher than the calculated score. For all analyses, the match scores (the same scores used for allocation) were used as reported at the time of removal from the waiting list.

Exceptions in each era were determined based on submissions to the National Lung Review Board. Under the previous allocation system (LAS), a single registration could only have one approved and active exception request at a time (although a registration could submit more than one request if the first request was denied). Under continuous distribution, using the CAS, a single registration can have multiple exception requests. Prior to CD implementation, centers could submit CAS exception requests through an interim process so that those requests, if approved, would be in place at the start of implementation. Twenty-six lung requests and one heart/lung request were submitted through this process and were not included in these analyses. Exceptions were analyzed at the registration level whenever possible (where one registration can have more than one exception request submitted and approved under CD). However, when the metric of interest depended on the outcome of a specific request submission (i.e., request approvals), analyses were performed at the form submission level.

Transplant

Cohort: Recipients that received a lung-alone transplant from December 07, 2022 through March 08, 2023 (pre) and March 09, 2023 through June 08, 2023 (post) were included. A separate analysis was conducted for lung-multiorgan transplants which included all recipients who received a lung and at least one other organ from December 07, 2022 through March 08, 2023 (pre) and March 09, 2023 through June 08, 2023 (post).

Analysis: For all analyses using CAS attributes, the match score at the time of transplant was used.

Utilization

Cohort: All donors from which at least one organ was recovered for the purposes of transplantation from December 07, 2022 through March 08, 2023 (pre) and March 09, 2023 through June 08, 2023 (post) were included.

Analysis: The utilization rate is defined as the percent of lungs that are transplanted based on all possible lungs from every deceased donor with at least one organ recovered for the purpose of transplant; this assumes that each donor has two possible lungs for donation. The non-use rate is defined as the number of lungs recovered for the purpose of transplant but not transplanted out of all lungs recovered for transplant.

Results

Waiting List

Candidates Ever Waiting and Waiting List Additions

There was a slight increase in the number of candidates ever waiting in the post policy era.

Figure 1: Number of Lung Candidates Ever Waiting by Era

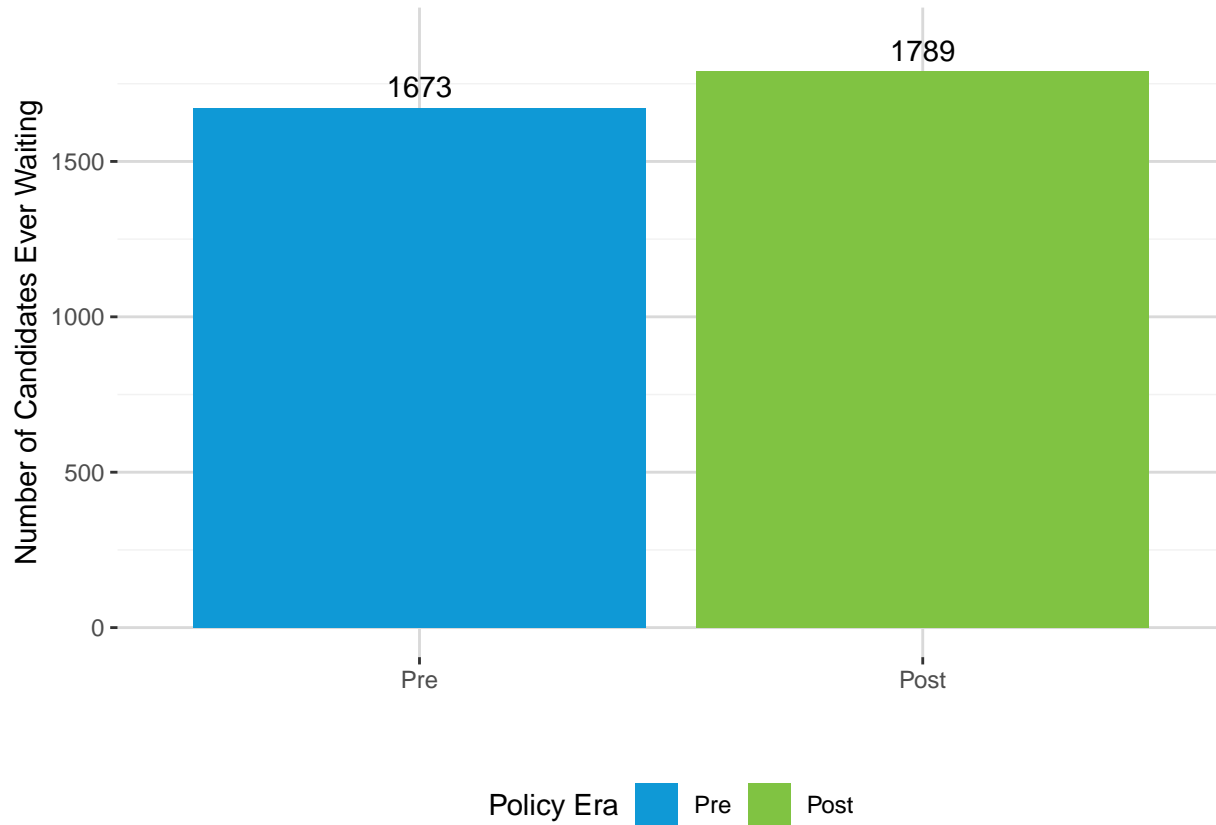
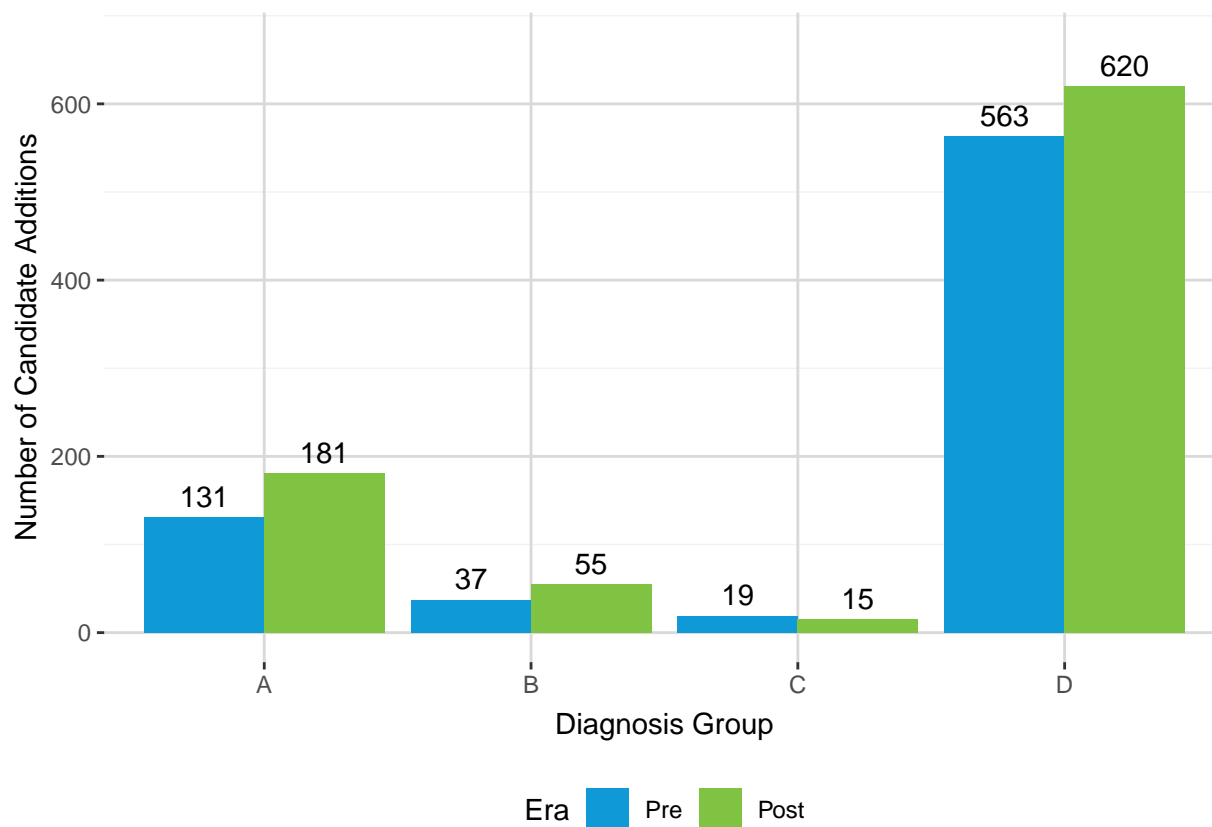


Table 1: Number of Lung Candidates Ever Waiting by Era

Era	N
Pre	1673
Post	1789

Candidate additions to the waiting list increased slightly in diagnosis groups A, B, and D but decreased slightly for diagnosis group C.

Figure 2: Number of Candidate Additions to the Waiting List by Era and Diagnosis Group



Diagnosis groups are defined as follows:

- Group A = Obstructive lung disease (e.g., emphysema)
- Group B = Pulmonary vascular disease (e.g., primary pulmonary hypertension)
- Group C = Cystic fibrosis or immunodeficiency disorder
- Group D = Restrictive lung disease (e.g., idiopathic pulmonary fibrosis)

Table 2: Number of Candidate Additions to the Waiting List by Era and Diagnosis Group

Diagnosis Group	Pre	Post
A	131 (17.5%)	181 (20.8%)
B	37 (4.9%)	55 (6.3%)
C	19 (2.5%)	15 (1.7%)
D	563 (75.1%)	620 (71.2%)
Total	750 (100.0%)	871 (100.0%)

There were slightly fewer heart/lung candidates and slightly more other multiorgan candidates ever waiting in the post policy era.

Figure 3: Number of Multiorgan Candidates Ever Waiting by Era and Multiorgan Type

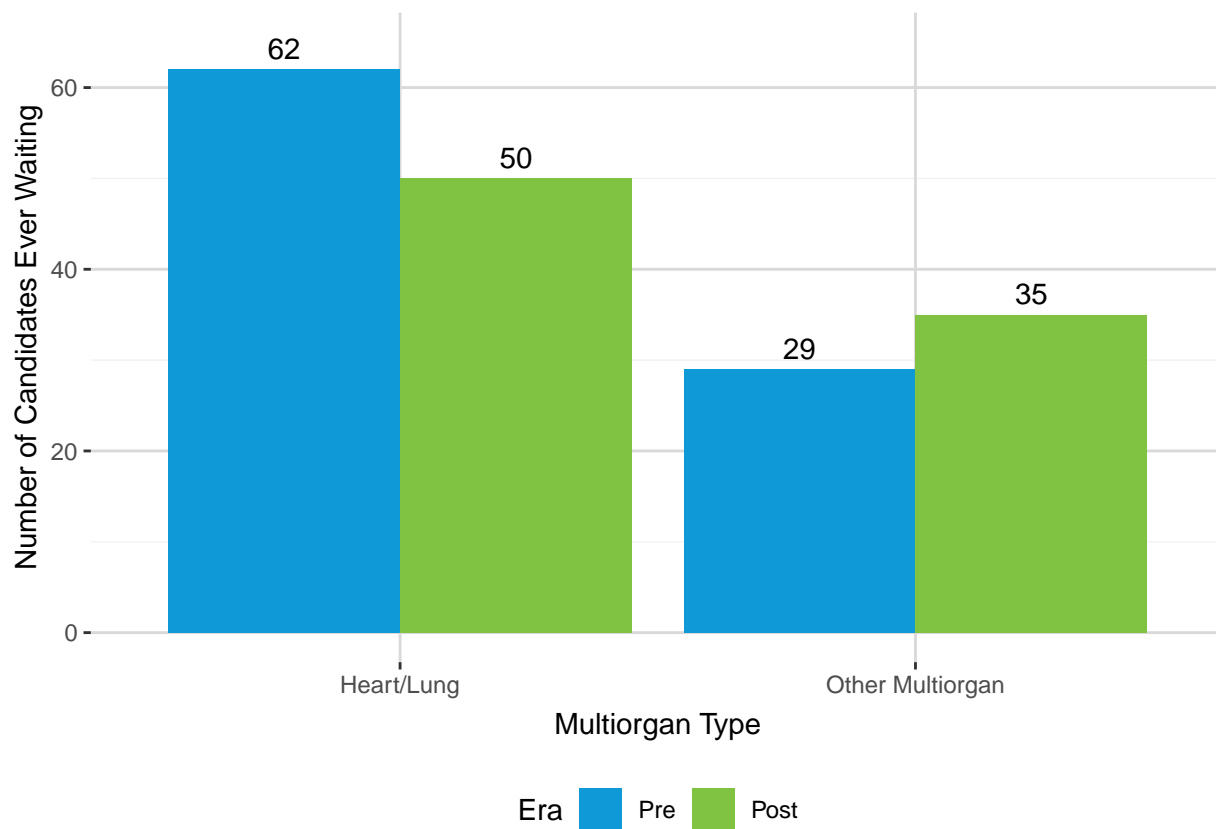


Table 3: Number of Multiorgan Candidates Ever Waiting by Era and Multiorgan Type

Multiorgan Type	Pre	Post
Heart/Lung	62 (68.1%)	50 (58.8%)
Other Multiorgan	29 (31.9%)	35 (41.2%)
Total	91 (100.0%)	85 (100.0%)

Waiting List Removals for Death or Too Sick

Waiting list removals for death or too sick were too small in individual regions to draw definitive conclusions, although OPTN regions 4 and 9 saw a notable decrease in removals for death or too sick.

Figure 4: Number of Waiting List Removals for Death or Too Sick by Era and OPTN Region

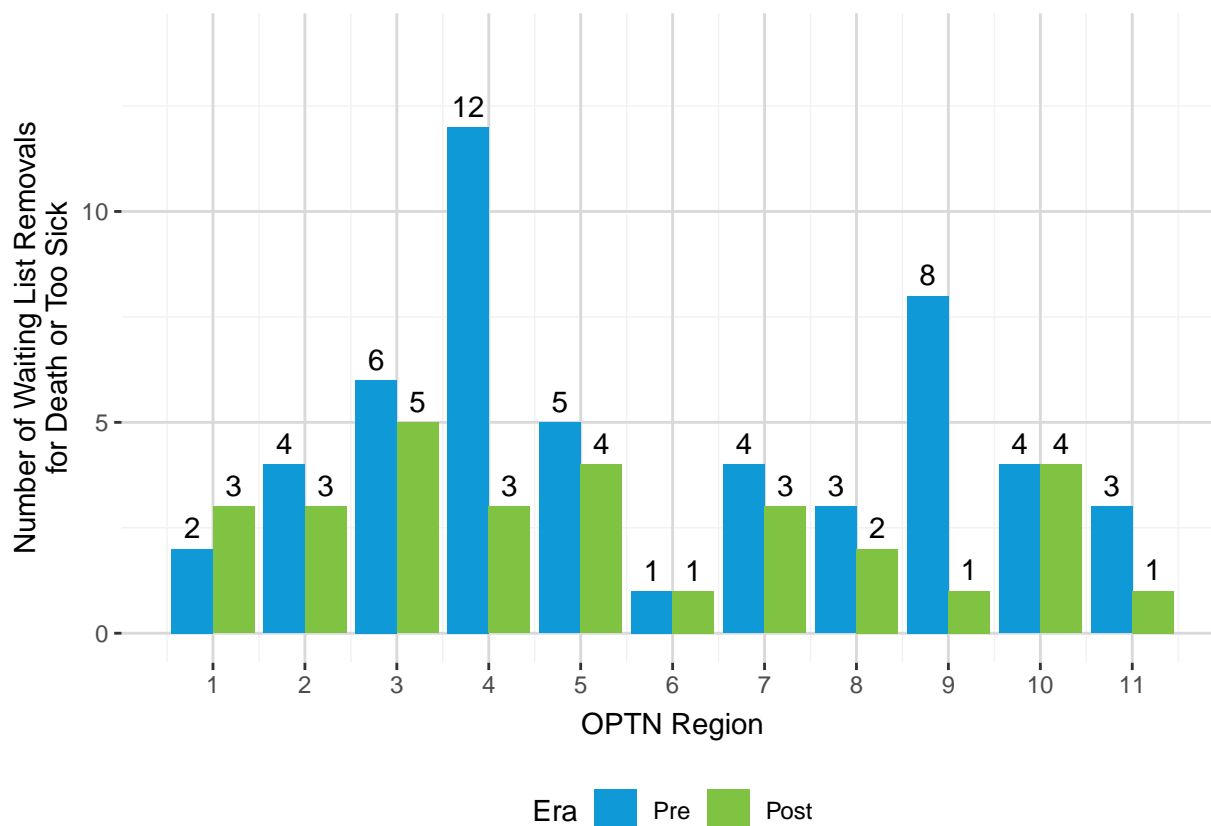


Table 4: Number of Waiting List Removals for Death or Too Sick by Era and OPTN Region

OPTN Region	Pre	Post
1	2 (3.8%)	3 (10.0%)
2	4 (7.7%)	3 (10.0%)
3	6 (11.5%)	5 (16.7%)
4	12 (23.1%)	3 (10.0%)
5	5 (9.6%)	4 (13.3%)
6	1 (1.9%)	1 (3.3%)
7	4 (7.7%)	3 (10.0%)
8	3 (5.8%)	2 (6.7%)
9	8 (15.4%)	1 (3.3%)
10	4 (7.7%)	4 (13.3%)
11	3 (5.8%)	1 (3.3%)
Total	52 (100.0%)	30 (100.0%)

Waiting list removals for death or too sick remained relatively consistent by diagnosis group across the policy eras, except for diagnosis group D where removals for death or too sick fell from 40 in the pre era to 21 in the post era.

Figure 5: Number of Waiting List Removals for Death or Too Sick by Era and Diagnosis Group

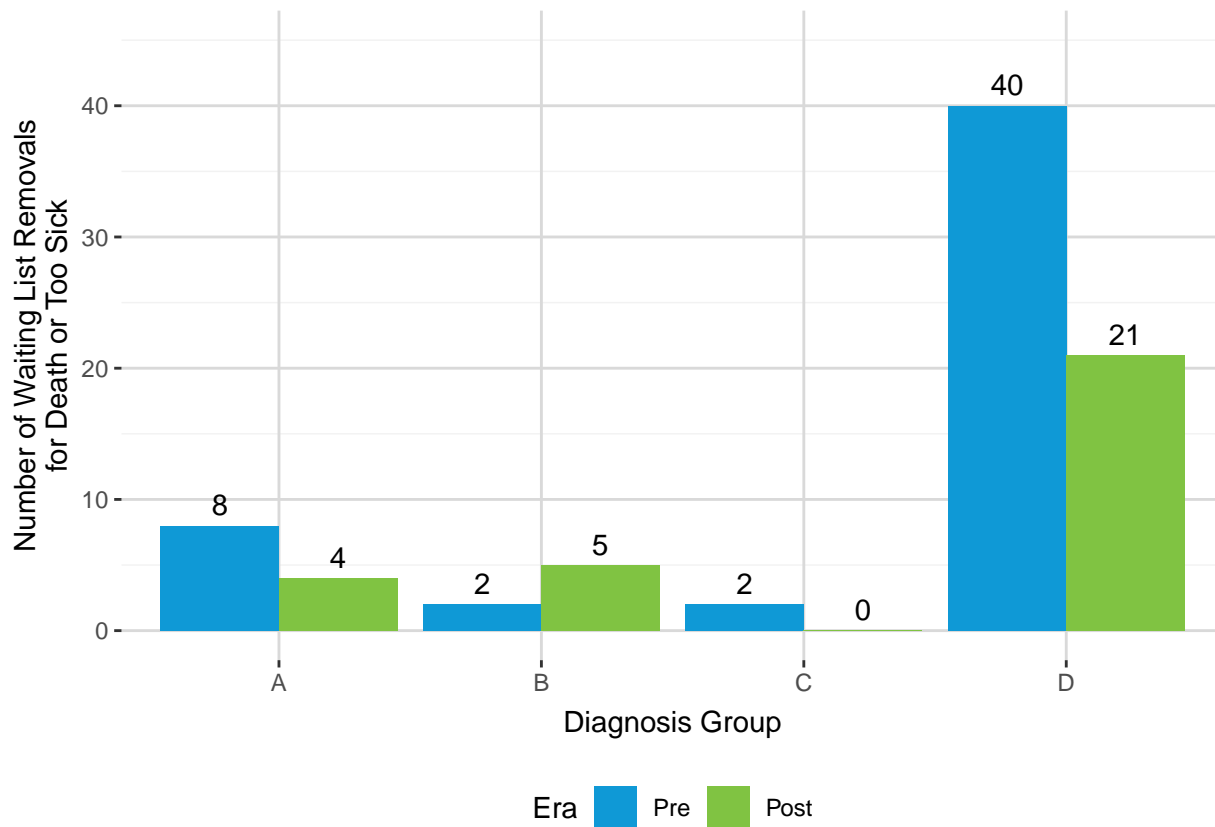
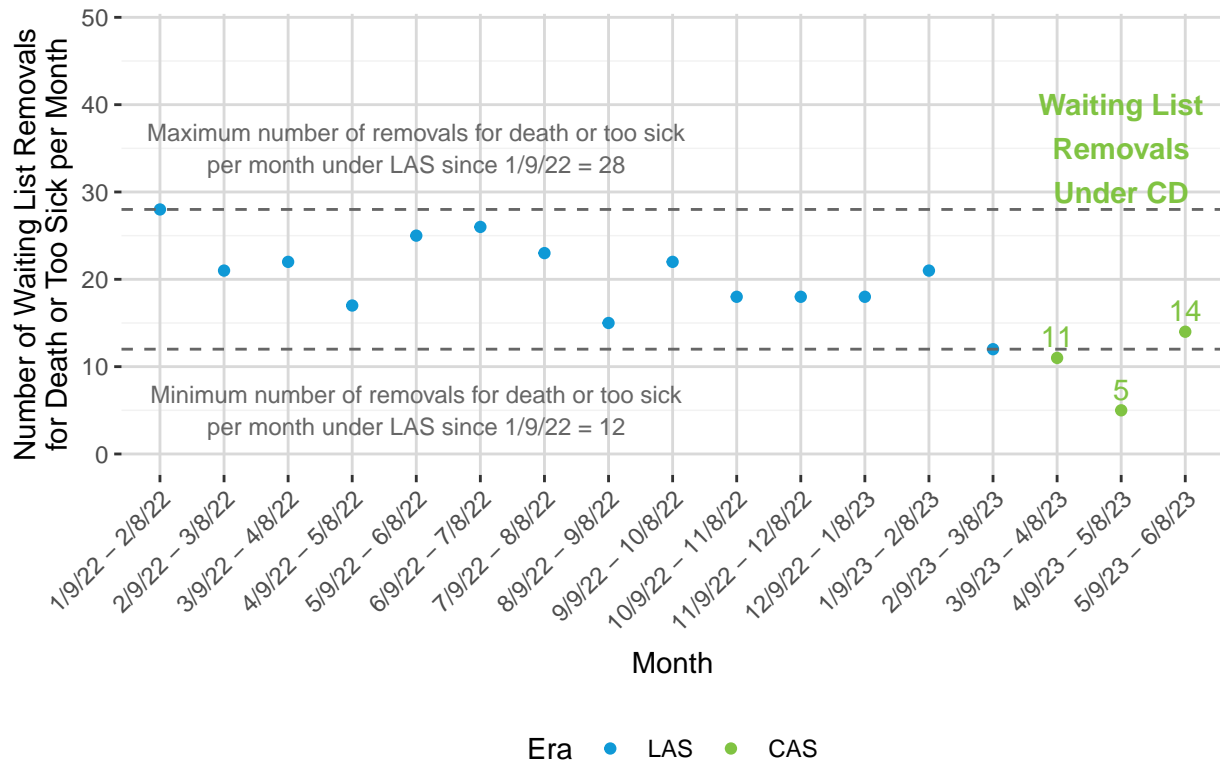


Table 5: Number of Waiting List Removals for Death or Too Sick by Era and Diagnosis Group

Diagnosis Group	Pre	Post
A	8 (15.4%)	4 (13.3%)
B	2 (3.8%)	5 (16.7%)
C	2 (3.8%)	0 (0.0%)
D	40 (76.9%)	21 (70.0%)
Total	52 (100.0%)	30 (100.0%)

Since January 9th, 2022 the number of removals per month from the waiting list for death or too sick under LAS have ranged from 12 to 28. Removals per month from the waiting list for death or too sick under CD have ranged from 5 to 14.

Figure 6: Number of Waiting List Candidate Removals for Death or Too Sick Per Month



Note that all months are defined from the 9th to the 8th; therefore, the last three months under LAS do not perfectly overlap with the defined pre policy era.

Table 6: Number of Waiting List Candidate Removals for Death or Too Sick Per Month

Policy Era	Month	Removals from the Waiting List for Death or Too Sick
LAS	1/9/22 - 2/8/22	28
	2/9/22 - 3/8/22	21
	3/9/22 - 4/8/22	22
	4/9/22 - 5/8/22	17
	5/9/22 - 6/8/22	25
	6/9/22 - 7/8/22	26
	7/9/22 - 8/8/22	23
	8/9/22 - 9/8/22	15
	9/9/22 - 10/8/22	22
	10/9/22 - 11/8/22	18
	11/9/22 - 12/8/22	18
	12/9/22 - 1/8/23	18
	1/9/23 - 2/8/23	21
CAS	2/9/23 - 3/8/23	12
	3/9/23 - 4/8/23	11
	4/9/23 - 5/8/23	5
	5/9/23 - 6/8/23	14

^a Note that all months are defined from the 9th to the 8th; therefore, the last three months under LAS do not perfectly overlap with the defined pre policy era.

Waiting list removals of multiorgan candidates for death or too sick were too small to draw definitive conclusions on trends in removals by organ type.

Figure 7: Number of Multiorgan Candidate Waiting List Removals for Death or Too Sick by Era and Multiorgan Type

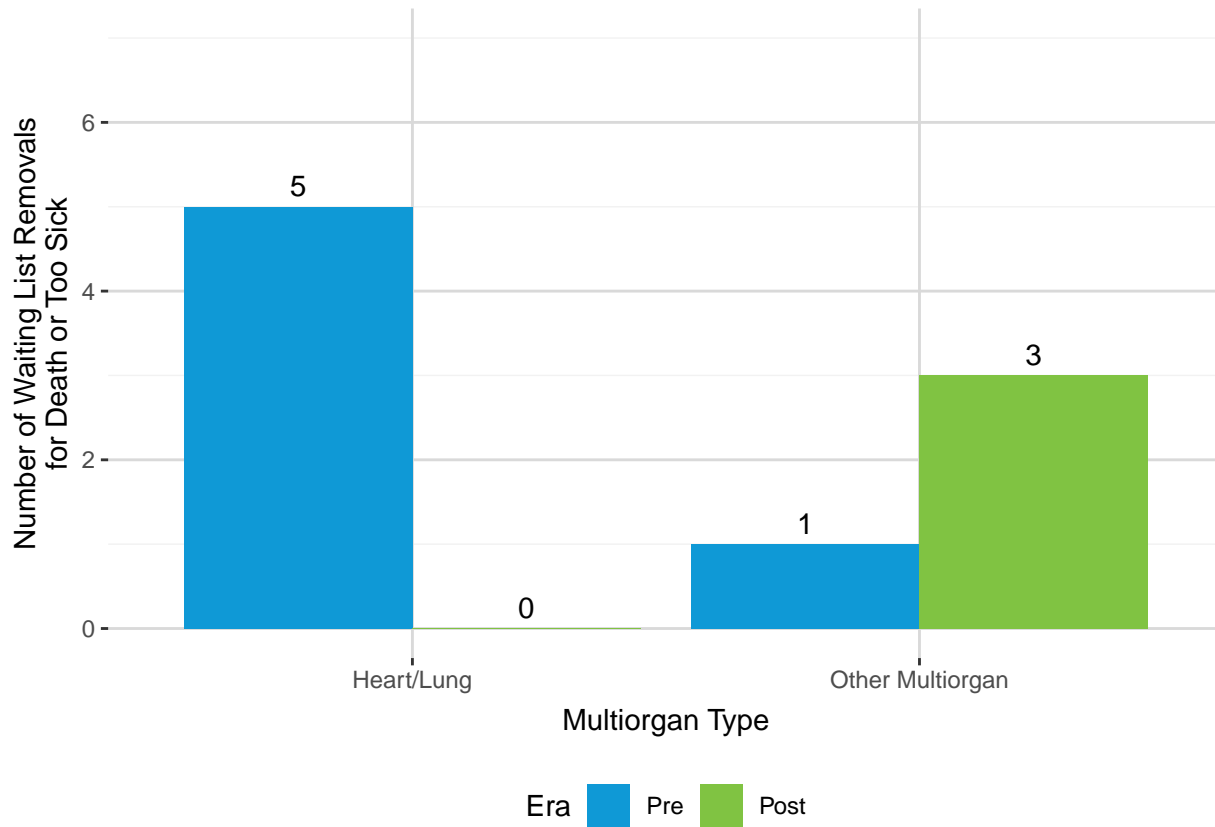


Table 7: Number of Multiorgan Candidate Waiting List Removals for Death or Too Sick by Era and Multiorgan Type

Multiorgan Type	Pre	Post
Heart/Lung	5 (83.3%)	0 (0.0%)
Other Multiorgan	1 (16.7%)	3 (100.0%)
Total	6 (100.0%)	3 (100.0%)

The following figures summarize waiting list removals for death or too sick in the post policy era.

In the post policy era, the majority of waiting list removals for death or too sick to transplant were for candidates with at least 2.5 medical urgency points.

Figure 8: Number of Waiting List Removals for Death or Too Sick by Medical Urgency Points in the Post Policy Era

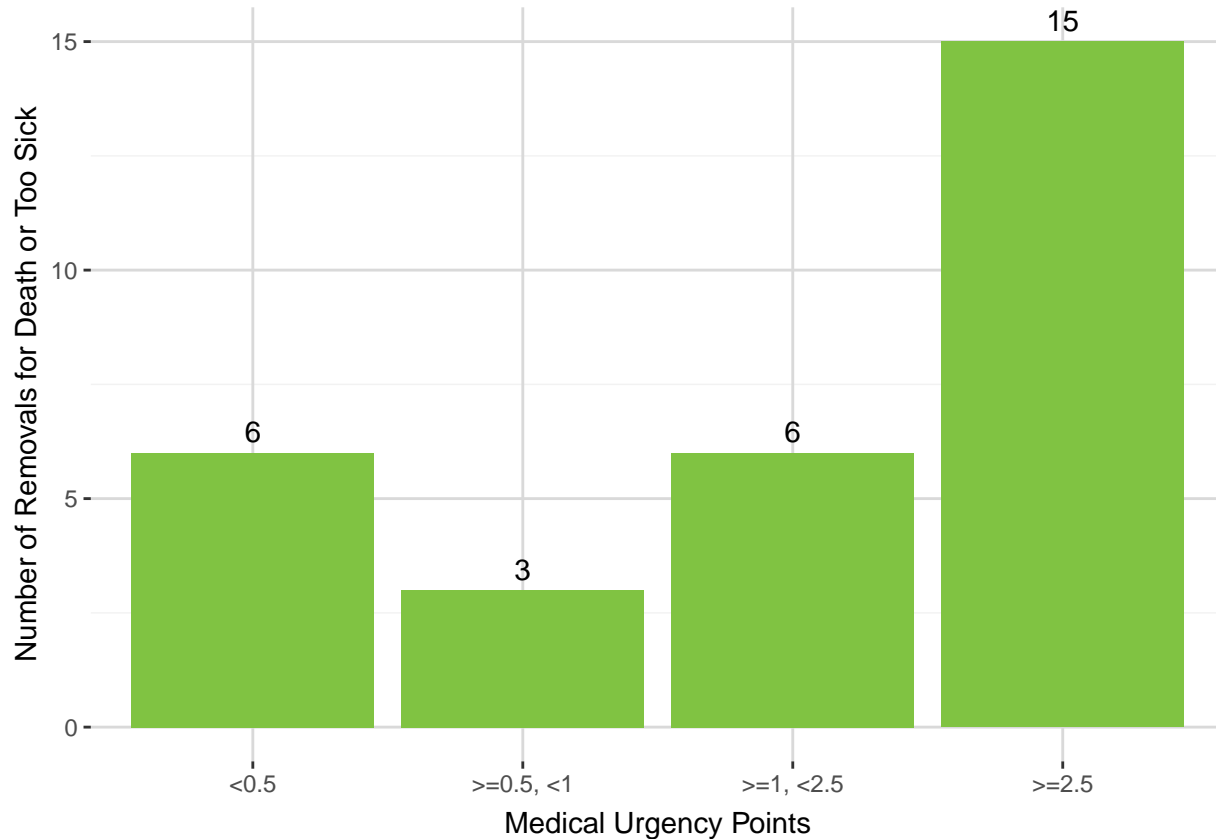


Table 8: Number of Waiting List Removals for Death or Too Sick by Medical Urgency Points in the Post Policy Era

Medical Urgency Points	N
<0.5	6 (20.0%)
>=0.5, <1	3 (10.0%)
>=1, <2.5	6 (20.0%)
>=2.5	15 (50.0%)
Total	30 (100.0%)

In the post policy era, the majority of waiting list removals for death or too sick had less than 20 post-transplant survival points.

Figure 9: Number of Waiting List Removals for Death or Too Sick by Post-Transplant Survival Points in the Post Policy Era

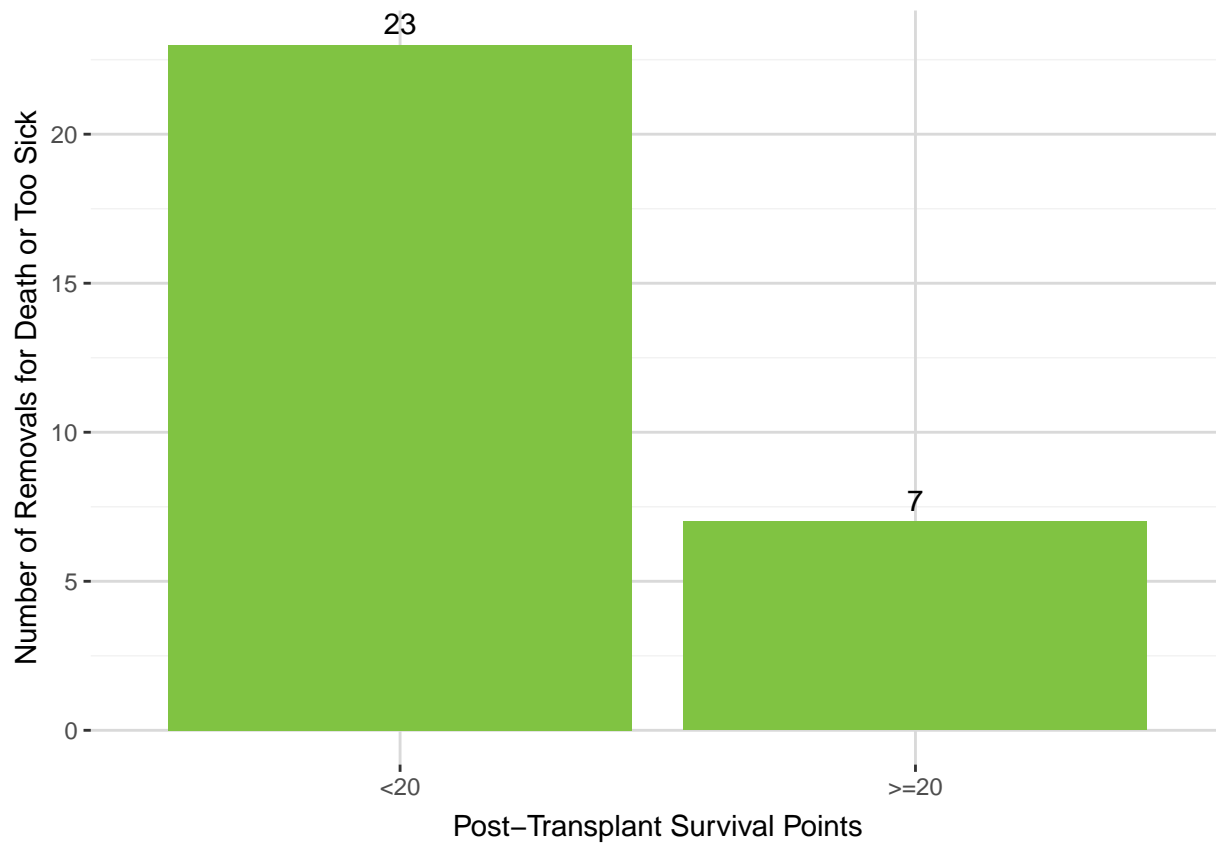


Table 9: Number of Waiting List Removals for Death or Too Sick by Post-Transplant Survival Points in the Post Policy Era

Post-Transplant Survival Points	N
<20	23 (76.7%)
>=20	7 (23.3%)
Total	30 (100.0%)

In the post policy era, the majority of candidates removed from the waiting list for death or too sick had a CAS subscore of at least 24 points.

Figure 10: Number of Waiting List Removals for Death or Too Sick by CAS Subscore in the Post Policy Era

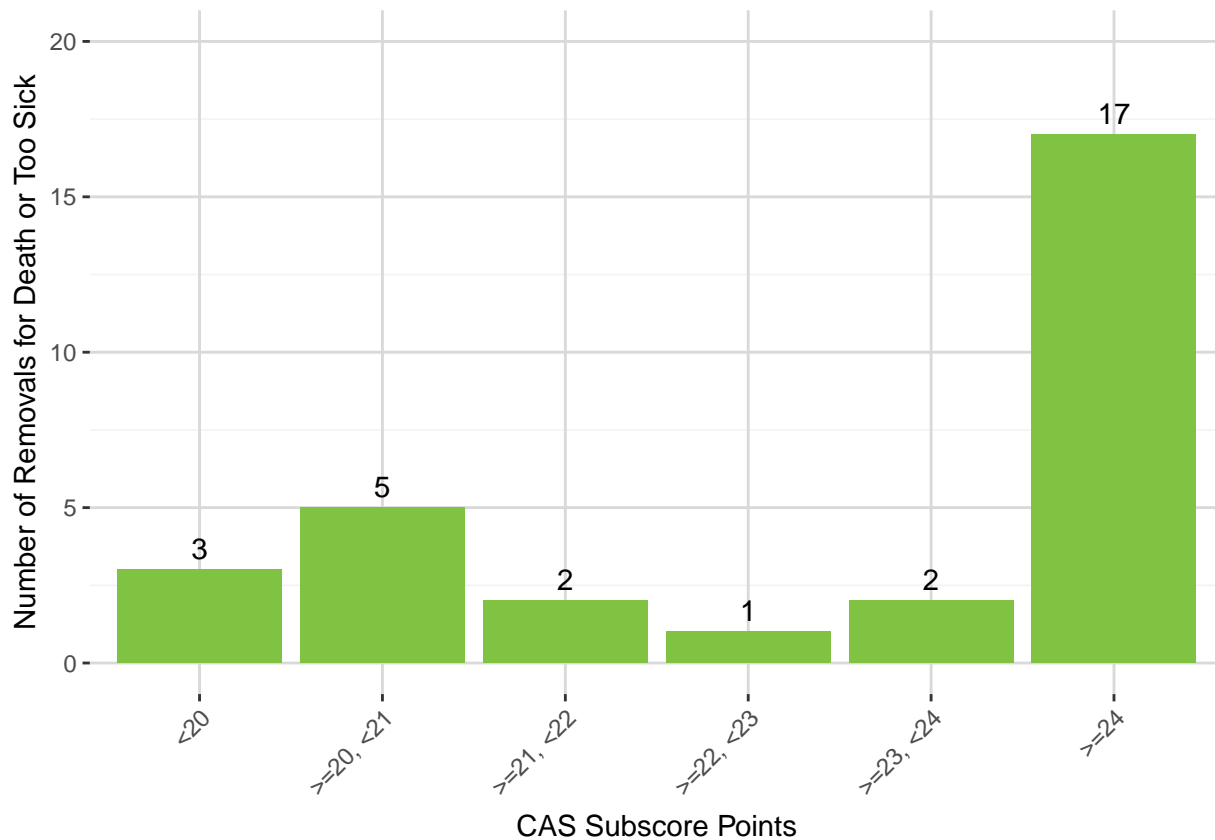


Table 10: Number of Waiting List Removals for Death or Too Sick by CAS Subscore in the Post Policy Era

CAS Subscore	N
<20	3 (10.0%)
>=20, <21	5 (16.7%)
>=21, <22	2 (6.7%)
>=22, <23	1 (3.3%)
>=23, <24	2 (6.7%)
>=24	17 (56.7%)
Total	30 (100.0%)

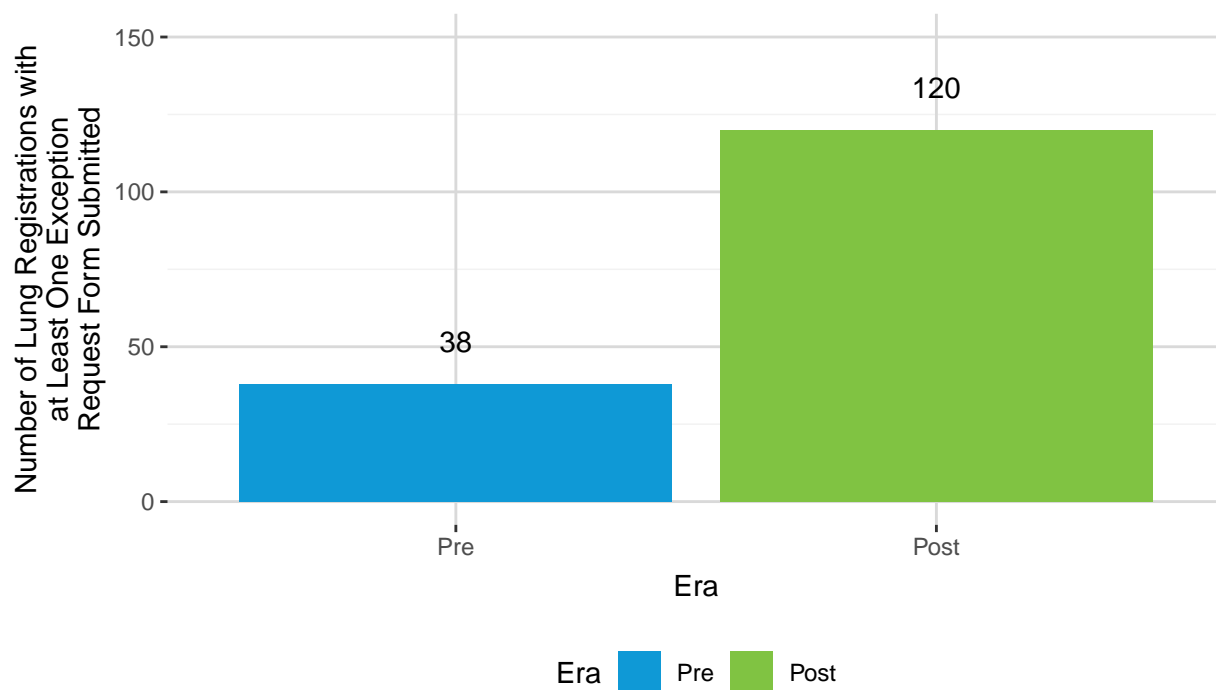
Exceptions

The National Lung Review Board experienced a large increase in the quantity of exception forms submitted. This trend may be a bolus effect and may stabilize over time. The number of exceptions submitted will be included in future monitoring. Under LAS, a single registration could only have one exception request associated with it. Under continuous distribution (CD), a single registration can have multiple exception requests, provided the exception requests are under different goals.

Prior to implementation, centers could submit CAS exception requests through an interim process so that those requests, if approved, would be in place at the start of implementation. 26 requests were submitted through this process and were not included in the below charts. In the charts below, all LAS requests were submitted prior to lung CD implementation and all CAS requests were submitted after CD implementation.

The figure and table below show the number of registrations with exception requests submitted. Multiple exception requests can be submitted for a single registration. There were more registrations with submitted exception requests in the post policy era than in the pre policy era.

Figure 11: Number of Lung Waiting List Registrations with at Least One Submitted Exception Request Form by Era



This chart does not include the 26 exceptions that were submitted to the National Lung Review Board prior to the implementation of Lung Continuous Distribution on 3/9/23. Under LAS, a single registration could only have one exception but under CD, a single registration can have multiple exceptions. Results include exceptions for multiorgan candidates but excludes exceptions on heart/lung (HL) registrations. Exceptions submitted on the lung registration of a HL candidate are included.

Table 11: Number of Lung Waiting List Registrations with at Least One Submitted Exception Request Form by Era

Era	Number of Lung Waiting List Registrations with at Least One Submitted Exception Request
Pre	38
Post	120

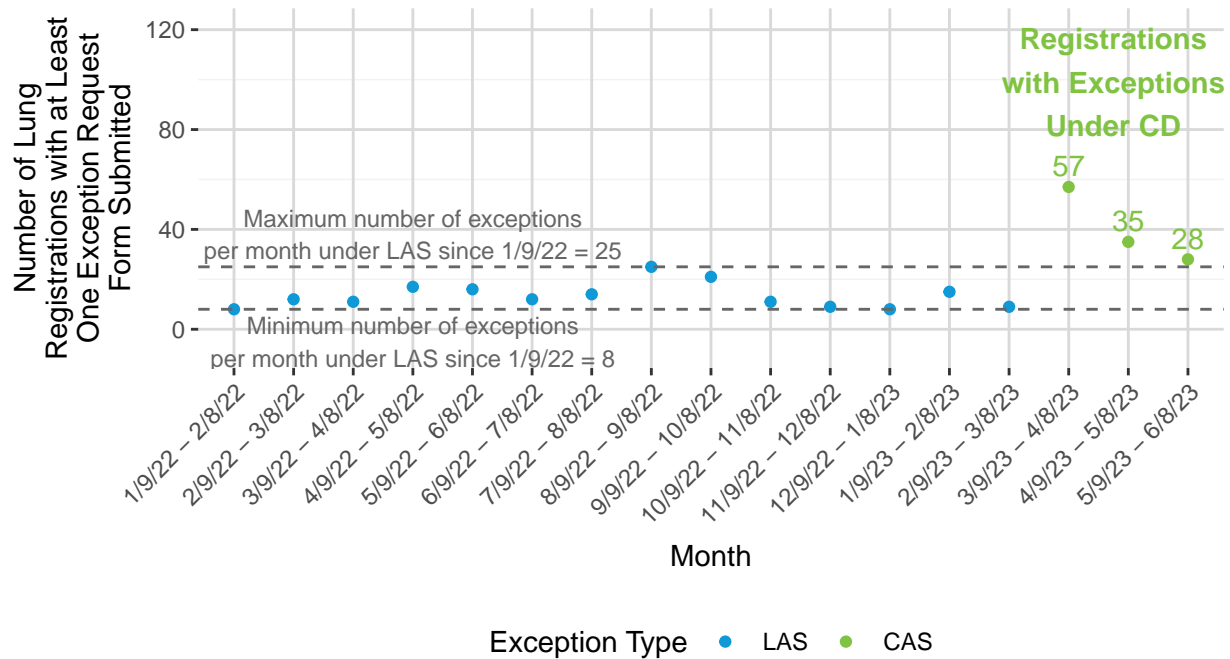
^a This table does not include the 26 exceptions that were submitted to the National Lung Review Board prior to the implementation of Lung Continuous Distribution on 3/9/23.

^b Under LAS, a single registration could only have one exception but under CD, a single registration can have multiple exceptions.

^c Results include exceptions for multiorgan candidates but excludes exceptions on heart/lung (HL) registrations. Exceptions submitted on the lung registration of a HL candidate are included.

Since January 9th, 2022, the number of LAS exception requests submitted in a month ranged from 8 to 25. The number of exception requests submitted in the first 3 months of CD implementation exceeded this range.

Figure 12: Number of Lung Registrations with at Least One Exception Request Form Submitted Per Month



This chart does not include the 26 exceptions that were submitted to the National Lung Review Board prior to the implementation of Lung Continuous Distribution on 3/9/23. Under LAS, a single registration could only have one exception but under CD, a single registration can have multiple exceptions. Results include exceptions for multiorgan candidates but excludes exceptions on heart/lung (HL) registrations. Exceptions submitted on the lung registration of a HL candidate are included. Note that all months are defined from the 9th to the 8th; therefore, the last three months under LAS do not perfectly overlap with the defined pre policy era.

Table 12: Number of Lung Registrations with at Least One Exception Request Form Submitted Per Month

Policy Era	Month	Number of LAS or CAS exceptions requests submitted
LAS	1/9/22 - 2/8/22	8
	2/9/22 - 3/8/22	12
	3/9/22 - 4/8/22	11
	4/9/22 - 5/8/22	17
	5/9/22 - 6/8/22	16
	6/9/22 - 7/8/22	12
	7/9/22 - 8/8/22	14
	8/9/22 - 9/8/22	25
	9/9/22 - 10/8/22	21
	10/9/22 - 11/8/22	11
	11/9/22 - 12/8/22	9
	12/9/22 - 1/8/23	8
CAS	1/9/23 - 2/8/23	15
	2/9/23 - 3/8/23	9
	3/9/23 - 4/8/23	57
	4/9/23 - 5/8/23	35
	5/9/23 - 6/8/23	28

^a This table does not include the 26 exceptions that were submitted to the National Lung Review Board prior to the implementation of Lung Continuous Distribution on 3/9/23.

^b Under LAS, a single registration could only have one exception but under CD, a single registration can have multiple exceptions.

^c Results include exceptions for multiorgan candidates but excludes exceptions on heart/lung (HL) registrations. Exceptions submitted on the lung registration of a HL candidate are included.

^d Note that all months are defined from the 9th to the 8th; therefore, the last three months under LAS do not perfectly overlap with the defined pre policy era.

The number of lung registrations with at least one exception request form submitted increased in all diagnosis groups except for diagnosis group C, where the registrations with exceptions remained similar.

Figure 13: Number of Lung Registrations with at Least One Exception Request Form Submitted by Era and Diagnosis Group

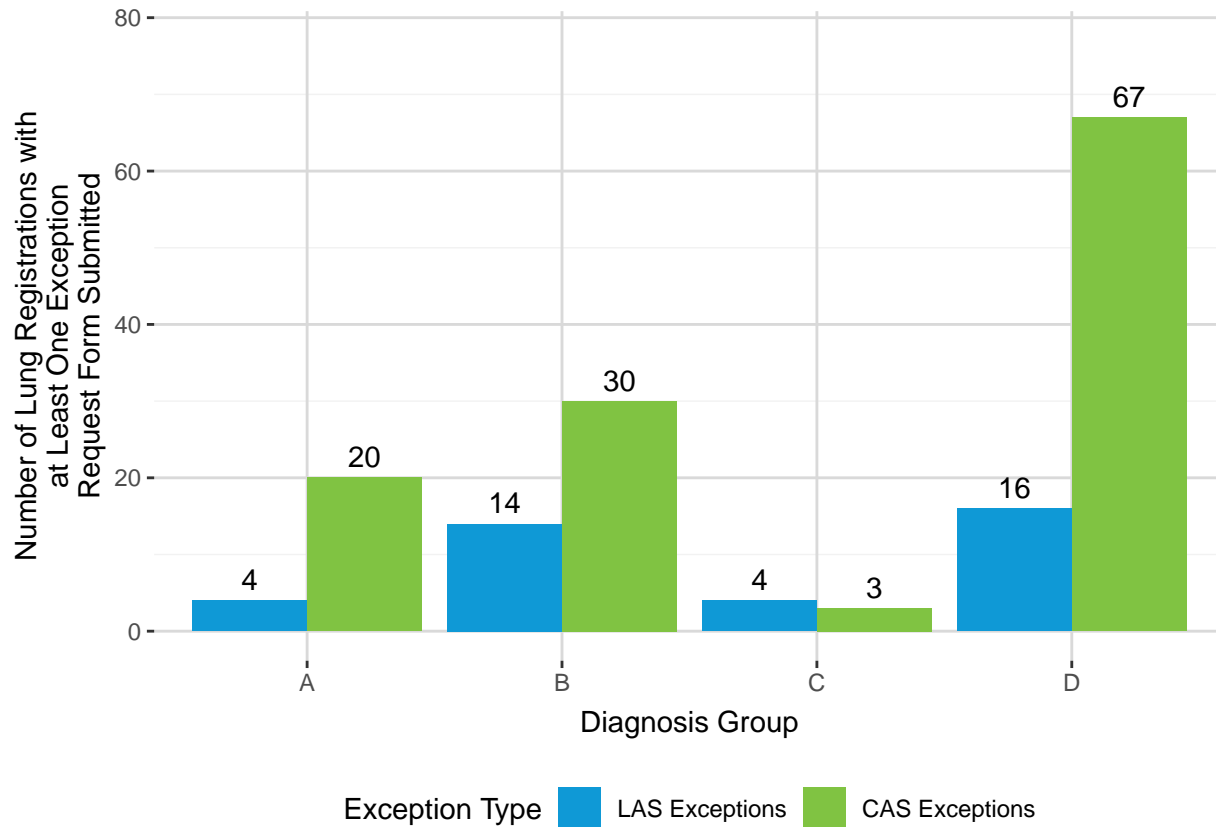


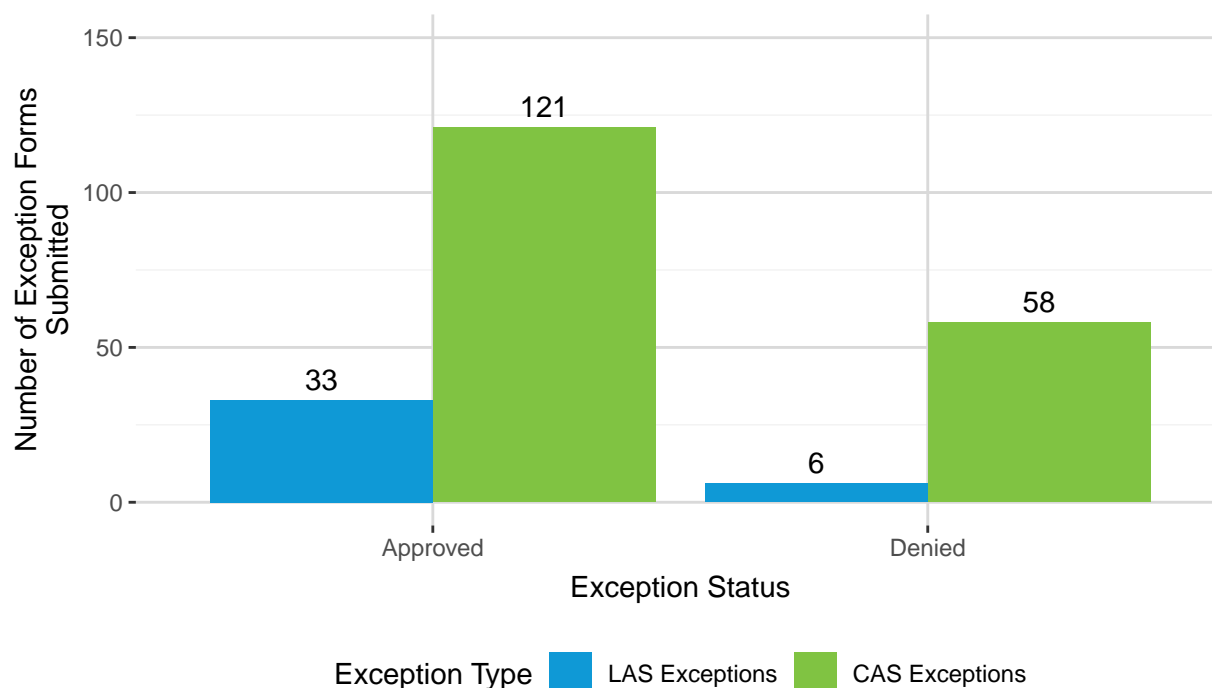
Table 13: Number of Lung Registrations with at Least One Exception Request Form Submitted by Era and Diagnosis Group

Diagnosis Group	LAS Exceptions	CAS Exceptions
A	4 (10.5%)	20 (16.7%)
B	14 (36.8%)	30 (25.0%)
C	4 (10.5%)	3 (2.5%)
D	16 (42.1%)	67 (55.8%)
Total	38 (100.0%)	120 (100.0%)

The following figures and tables examine data at the exception form level.

Although more exception requests were submitted in the post implementation era, a greater proportion of these exception requests were denied.

Figure 14: Number of Lung Exception Request Forms Submitted by Era and Status



This chart does not include the 26 exceptions that were submitted to the National Lung Review Board prior to the implementation of Lung Continuous Distribution on 3/9/23. Under LAS, a single registration could only have one exception but under CD, a single registration can have multiple exceptions. Results include exceptions for multiorgan candidates but excludes exceptions on heart/lung (HL) registrations. Exceptions submitted on the lung registration of a HL candidate are included.

Table 14: Number of Lung Exception Request Forms Submitted by Era and Status

Status	LAS Exceptions	CAS Exceptions
Approved	33 (84.6%)	121 (67.6%)
Denied	6 (15.4%)	58 (32.4%)
Total	39 (100.0%)	179 (100.0%)

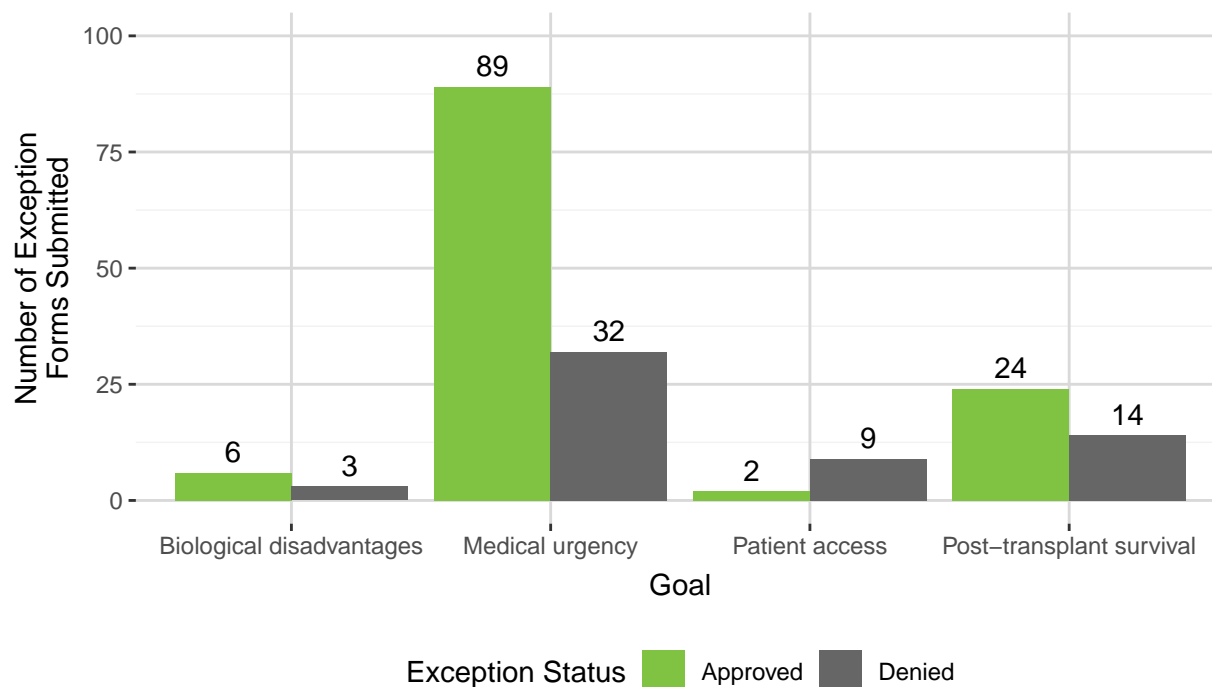
^a This table does not include the 26 exceptions that were submitted to the National Lung Review Board prior to the implementation of Lung Continuous Distribution on 3/9/23.

^b Under LAS, a single registration could only have one exception but under CD, a single registration can have multiple exceptions.

^c Results include exceptions for multiorgan candidates but excludes exceptions on heart/lung (HL) registrations. Exceptions submitted on the lung registration of a HL candidate are included.

The majority of exception requests were submitted for the medical urgency goal.

Figure 15: Number of Lung CAS Exception Request Forms Submitted by Status and Goal in the Post Policy Era



This chart does not include the 26 exceptions that were submitted to the National Lung Review Board prior to the implementation of Lung Continuous Distribution on 3/9/23. Under LAS, a single registration could only have one exception but under CD, a single registration can have multiple exceptions. Results include exceptions for multiorgan candidates but excludes exceptions on heart/lung (HL) registrations. Exceptions submitted on the lung registration of a HL candidate are included.

Table 15: Number of Lung CAS Exception Request Forms Submitted by Status and Goal in the Post Policy Era

Goal	Approved	Denied
Biological disadvantages	6 (5.0%)	3 (5.2%)
Medical urgency	89 (73.6%)	32 (55.2%)
Patient access	2 (1.7%)	9 (15.5%)
Post-transplant survival	24 (19.8%)	14 (24.1%)
Total	121 (100.0%)	58 (100.0%)

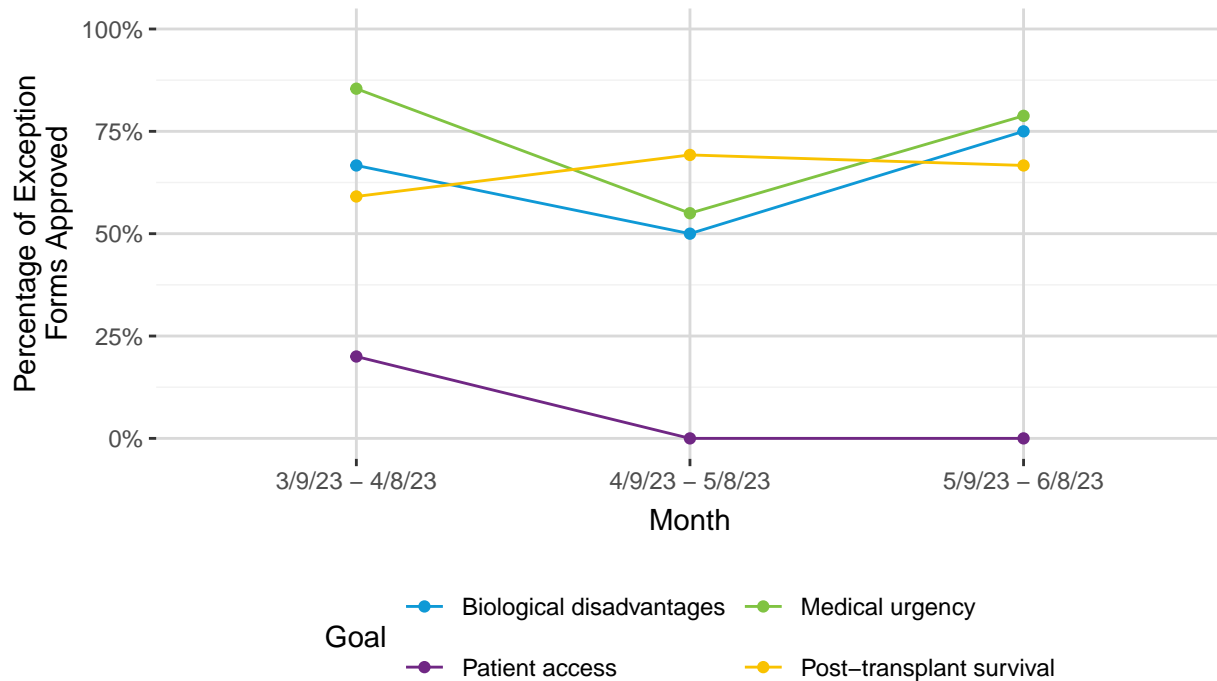
^a This table does not include the 26 exceptions that were submitted to the National Lung Review Board prior to the implementation of Lung Continuous Distribution on 3/9/23.

^b Under LAS, a single registration could only have one exception but under CD, a single registration can have multiple exceptions.

^c Results include exceptions for multiorgan candidates but excludes exceptions on heart/lung (HL) registrations. Exceptions submitted on the lung registration of a HL candidate are included.

Approval rates for CAS exception forms submitted under the biological disadvantage, medical urgency, and post-transplant survival goals remained relatively stable across months. However, there were no CAS exception forms submitted under the patient access goal after the first month.

Figure 16: Percentage of CAS Exception Forms Approved by Month of Submission and Goal



This chart does not include the 26 exceptions that were submitted to the National Lung Review Board prior to the implementation of Lung Continuous Distribution on 3/9/23. Under LAS, a single registration could only have one exception but under CD, a single registration can have multiple exceptions. Results include exceptions for multiorgan candidates but excludes exceptions on heart/lung (HL) registrations. Exceptions submitted on the lung registration of a HL candidate are included.

Table 16: Percentage of CAS Exception Forms Approved by Month of Submission and Goal

Goal	Month	Approved	Denied	Total
Biological disadvantages	3/9/23 - 4/8/23	2 (66.7%)	1 (33.3%)	3 (100.0%)
	4/9/23 - 5/8/23	1 (50.0%)	1 (50.0%)	2 (100.0%)
	5/9/23 - 6/8/23	3 (75.0%)	1 (25.0%)	4 (100.0%)
Medical urgency	3/9/23 - 4/8/23	41 (85.4%)	7 (14.6%)	48 (100.0%)
	4/9/23 - 5/8/23	22 (55.0%)	18 (45.0%)	40 (100.0%)
	5/9/23 - 6/8/23	26 (78.8%)	7 (21.2%)	33 (100.0%)
Patient access	3/9/23 - 4/8/23	2 (20.0%)	8 (80.0%)	10 (100.0%)
	4/9/23 - 5/8/23	0 (0.0%)	1 (100.0%)	1 (100.0%)
	5/9/23 - 6/8/23	0 (-)	0 (-)	0 (100.0%)
Post-transplant survival	3/9/23 - 4/8/23	13 (59.1%)	9 (40.9%)	22 (100.0%)
	4/9/23 - 5/8/23	9 (69.2%)	4 (30.8%)	13 (100.0%)
	5/9/23 - 6/8/23	2 (66.7%)	1 (33.3%)	3 (100.0%)

^a This table does not include the 26 exceptions that were submitted to the National Lung Review Board prior to the implementation of Lung Continuous Distribution on 3/9/23.

^b Under LAS, a single registration could only have one exception but under CD, a single registration can have multiple exceptions.

^c Results include exceptions for multiorgan candidates but excludes exceptions on heart/lung (HL) registrations. Exceptions submitted on the lung registration of a HL candidate are included.

Transplants

There were a total of 672 lung-alone transplants in the pre (December 07, 2022 - March 08, 2023) era and a total of 779 lung-alone transplants in the post (March 09, 2023 - June 08, 2023) era; this represents a 15.9% increase in transplants in the post era compared to the pre era.

Figure 17: Number of Lung Transplants by Era

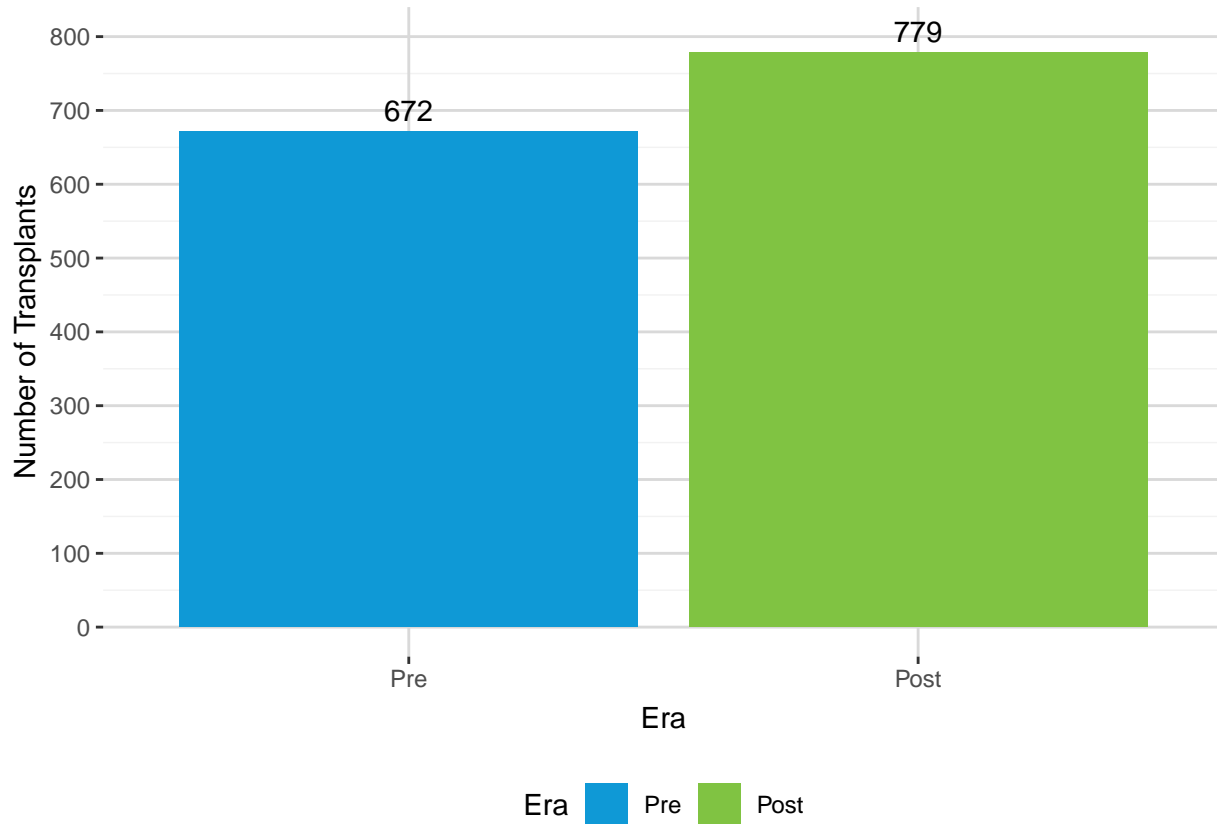
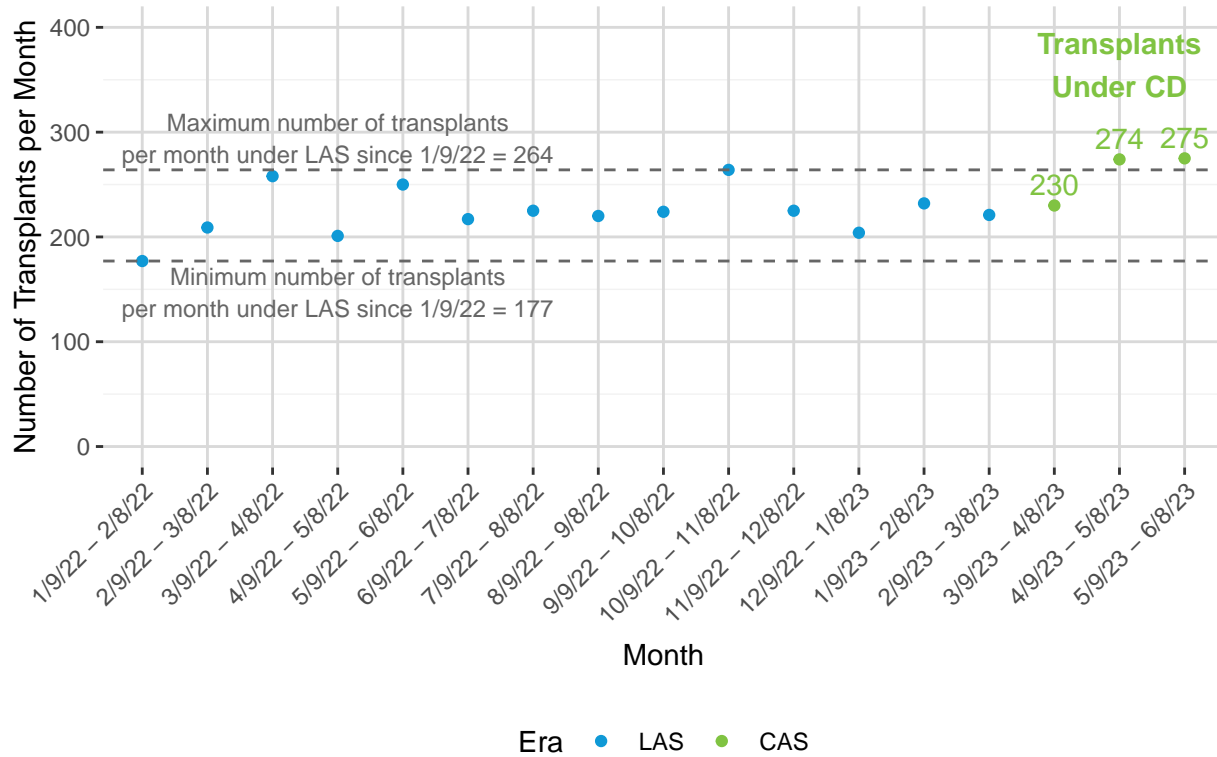


Table 17: Number of Lung Transplants by Era

Era	Number of Transplants
Pre	672
Post	779

The number of lung-alone transplants performed per month vary widely. In 2022, under LAS, the number of transplants performed per month varied from 177 to 264. The number of transplants performed in the second and third months of continuous distribution was above the range of transplants under the last year of LAS (274 and 275, respectively).

Figure 18: Number of Lung Transplants Per Month



Note that all months are defined from the 9th to the 8th; therefore, the last three months under LAS do not perfectly overlap with the defined pre policy era.

Table 18: Number of Lung Transplants Per Month

Policy Era	Month	Number of Lung Transplants
LAS	1/9/22 - 2/8/22	177
	2/9/22 - 3/8/22	209
	3/9/22 - 4/8/22	258
	4/9/22 - 5/8/22	201
	5/9/22 - 6/8/22	250
	6/9/22 - 7/8/22	217
	7/9/22 - 8/8/22	225
	8/9/22 - 9/8/22	220
	9/9/22 - 10/8/22	224
	10/9/22 - 11/8/22	264
	11/9/22 - 12/8/22	225
	12/9/22 - 1/8/23	204
	1/9/23 - 2/8/23	232
	2/9/23 - 3/8/23	221
	CAS	3/9/23 - 4/8/23
4/9/23 - 5/8/23		274
5/9/23 - 6/8/23		275

^a Note that all months are defined from the 9th to the 8th; therefore, the last three months under LAS do not perfectly overlap with the defined pre policy era.

Lung-alone transplants increased in 9 OPTN regions and decreased in 2 OPTN regions.

Figure 19: Number of Lung Transplants by Era and OPTN Region

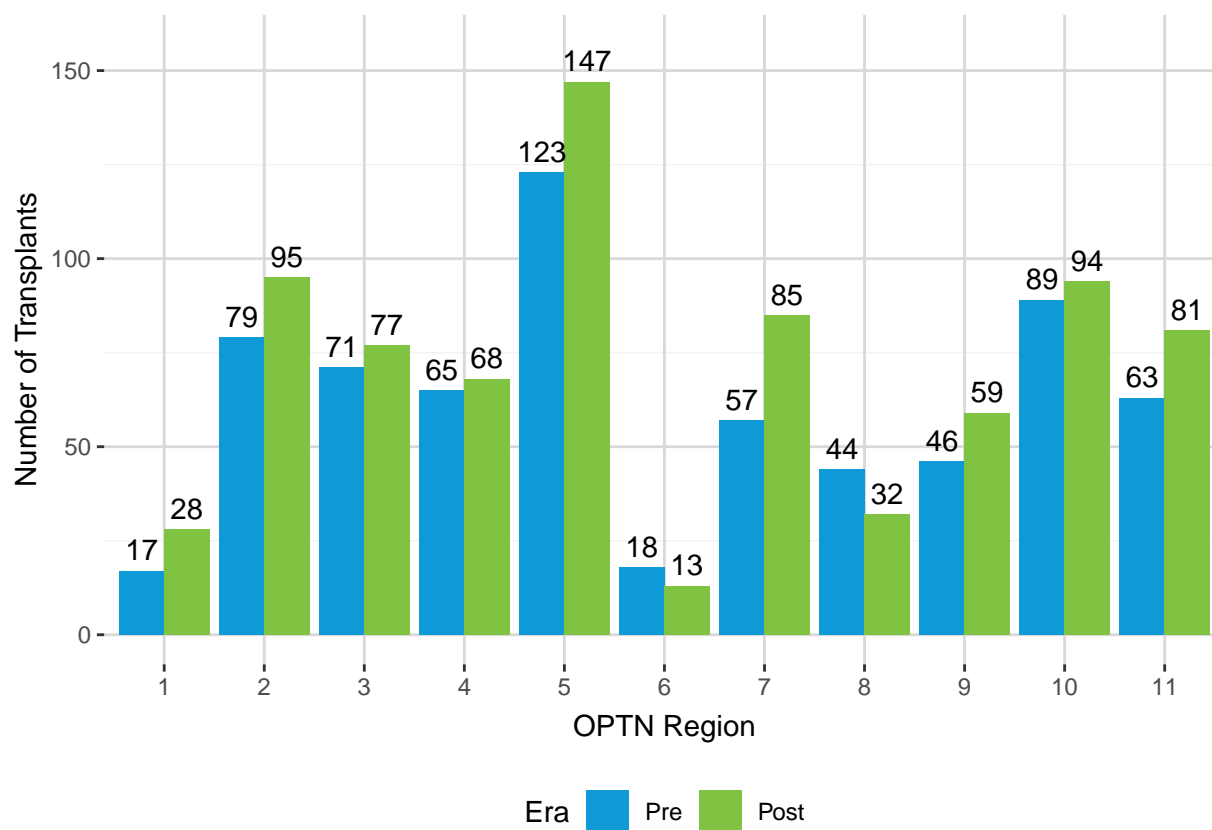


Table 19: Number of Lung Transplants by Era and OPTN Region

OPTN Region	Pre	Post
1	17 (2.5%)	28 (3.6%)
2	79 (11.8%)	95 (12.2%)
3	71 (10.6%)	77 (9.9%)
4	65 (9.7%)	68 (8.7%)
5	123 (18.3%)	147 (18.9%)
6	18 (2.7%)	13 (1.7%)
7	57 (8.5%)	85 (10.9%)
8	44 (6.5%)	32 (4.1%)
9	46 (6.8%)	59 (7.6%)
10	89 (13.2%)	94 (12.1%)
11	63 (9.4%)	81 (10.4%)
Total	672 (100.0%)	779 (100.0%)

Compared to the pre era, in the post era, the number of lung-alone transplants increased for all age groups except for the 65+ age group. The largest increase in transplants was observed for candidates in the 35-49 years (from 65 to 104) and 50-64 years (from 287 to 359) age groups

Figure 20: Number of Lung Transplants by Era and Age Group

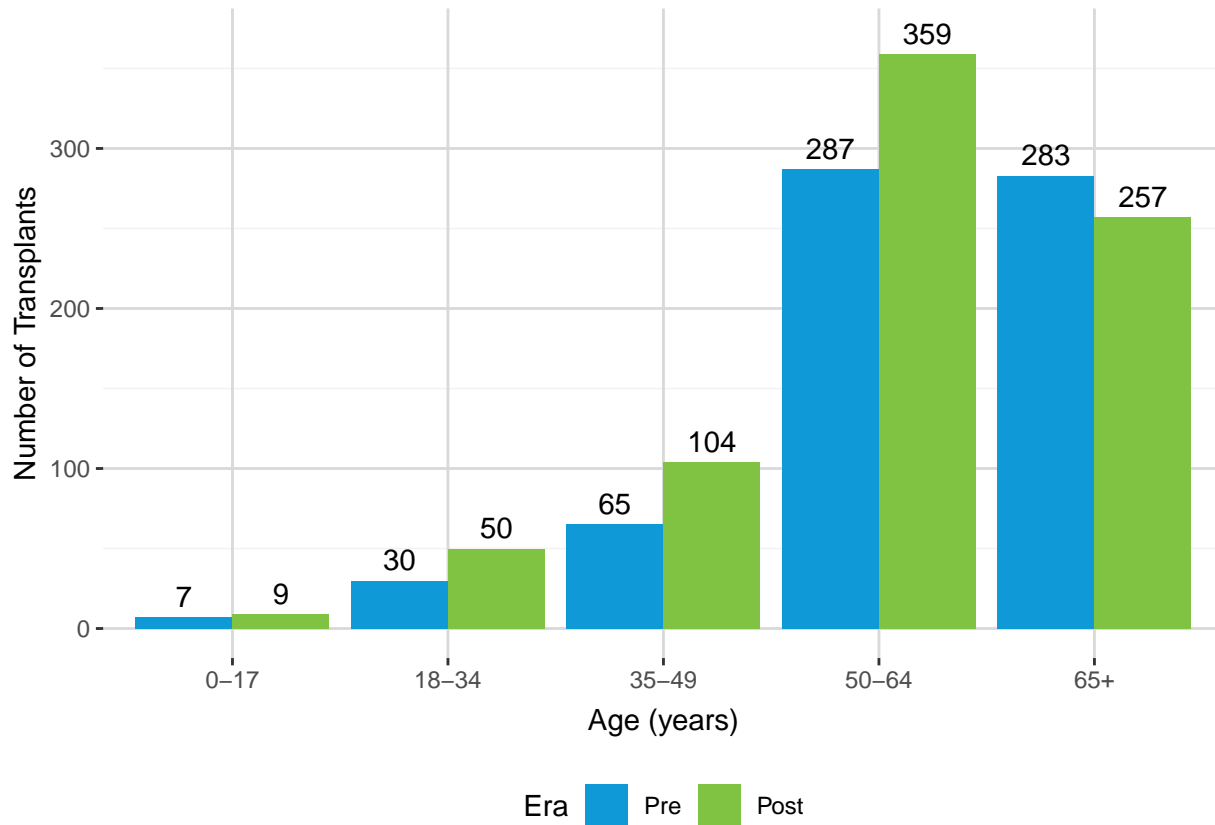


Table 20: Number of Lung Transplants by Era and Age Group

Age (years)	Pre	Post
0-17	7 (1.0%)	9 (1.2%)
18-34	30 (4.5%)	50 (6.4%)
35-49	65 (9.7%)	104 (13.4%)
50-64	287 (42.7%)	359 (46.1%)
65+	283 (42.1%)	257 (33.0%)
Total	672 (100.0%)	779 (100.0%)

Compared to the pre era, in the post era, the number of lung-alone transplants decreased for blood type O recipients (from 308 to 276) and increased for recipients of all other blood types.

Figure 21: Number of Lung Transplants by Era and Blood Type

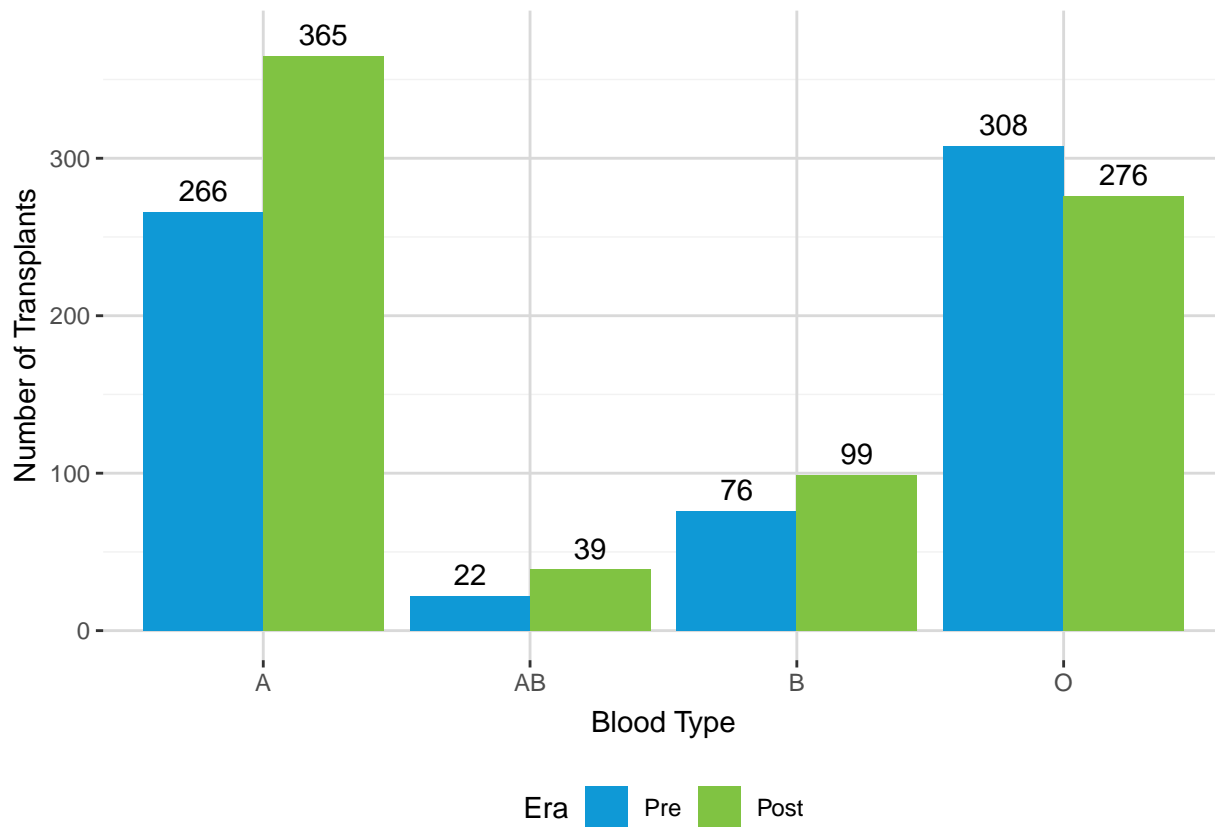
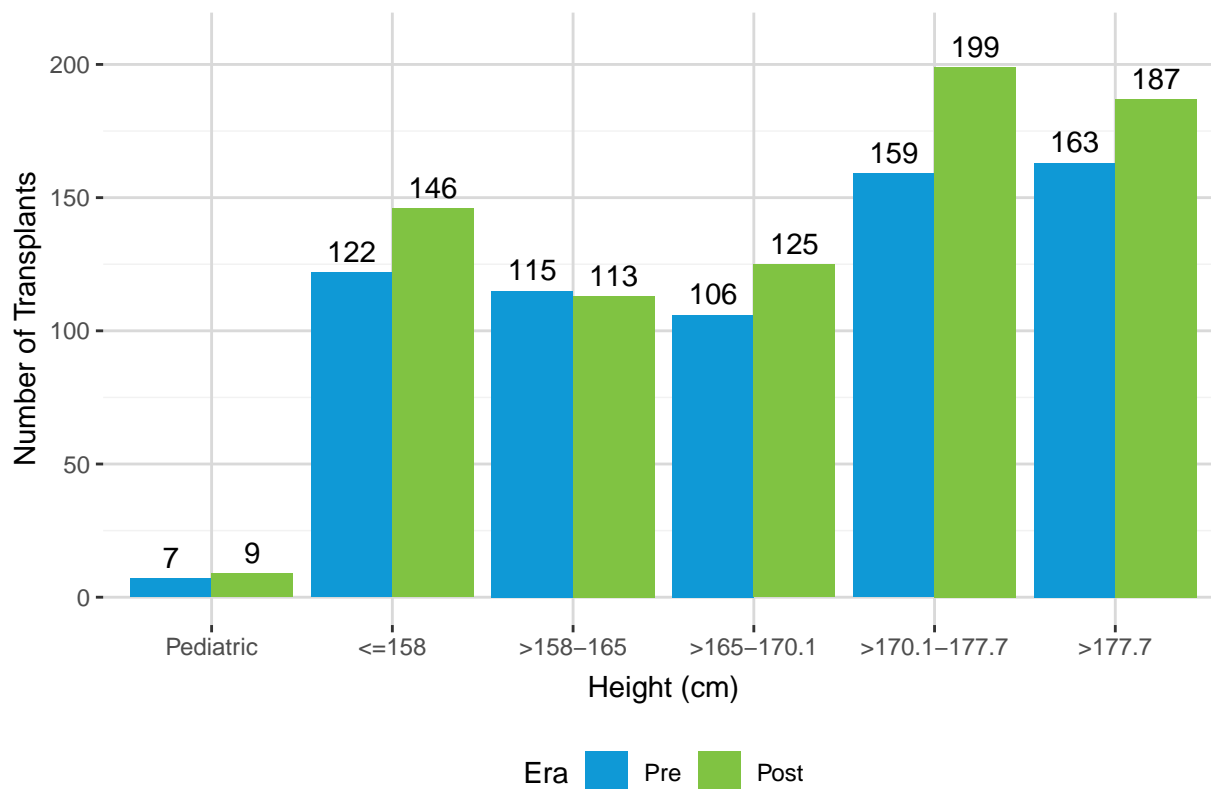


Table 21: Number of Lung Transplants by Era and Blood Type

Blood Type	Pre	Post
A	266 (39.6%)	365 (46.9%)
AB	22 (3.3%)	39 (5.0%)
B	76 (11.3%)	99 (12.7%)
O	308 (45.8%)	276 (35.4%)
Total	672 (100.0%)	779 (100.0%)

Compared to the pre era, the number of transplants in the post era was similar or greater for recipients across all height groupings.

Figure 22: Number of Lung Transplants by Era and Height



Pediatric recipients were separated from adult (>18 years) recipients.

Table 22: Number of Lung Transplants by Era and Height

Height (cm)	Pre	Post
Pediatric	7 (1.0%)	9 (1.2%)
<=158	122 (18.2%)	146 (18.7%)
>158-165	115 (17.1%)	113 (14.5%)
>165-170.1	106 (15.8%)	125 (16.0%)
>170.1-177.7	159 (23.7%)	199 (25.5%)
>177.7	163 (24.3%)	187 (24.0%)
Total	672 (100.0%)	779 (100.0%)

^a Pediatric recipients were separated from adult (>18 years) recipients.

In the post era, there was an increase in the number of bilateral sequential lung procedures performed (from 543 to 639). The occurrence of other procedure types was similar in the pre and post eras.

Figure 23: Number of Deceased Donor Lung Transplants by Era and Procedure Type

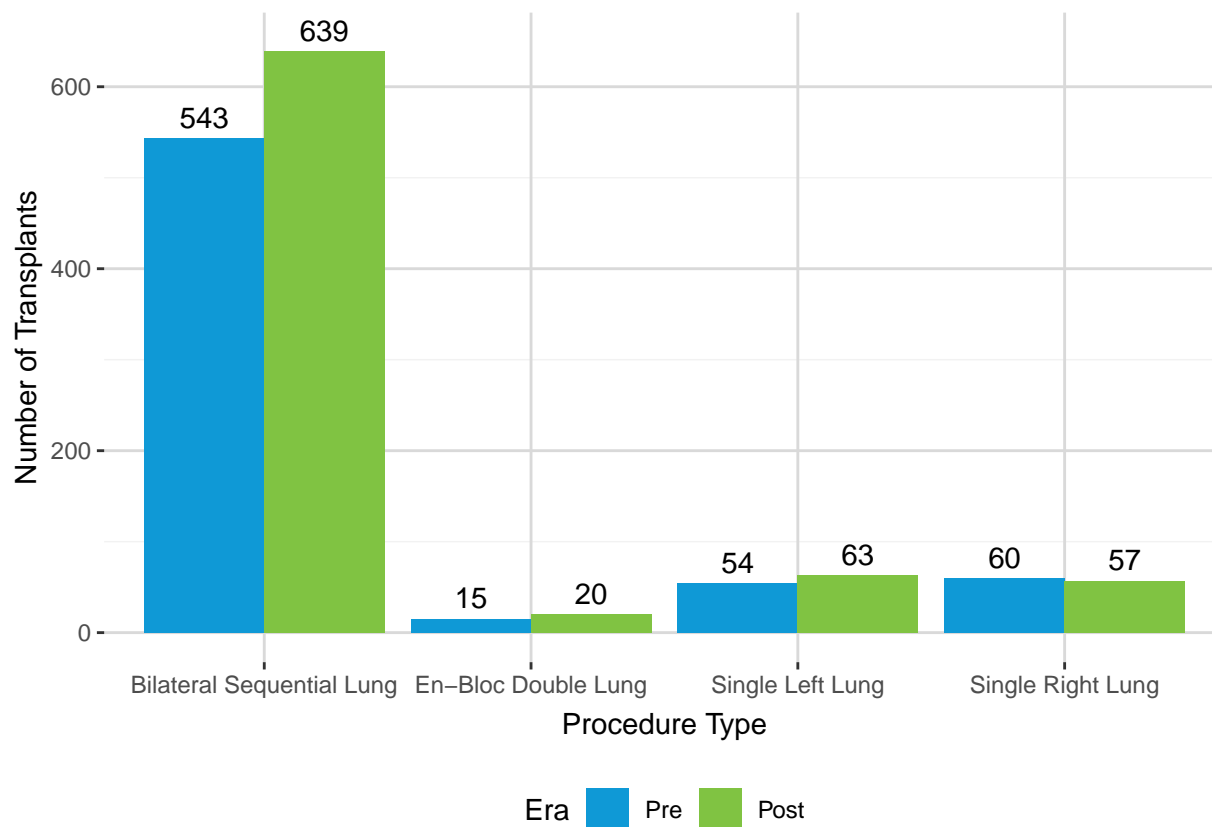


Table 23: Number of Deceased Donor Lung Transplants by Era and Procedure Type

Procedure Type	Pre	Post
Bilateral Sequential Lung	543 (80.8%)	639 (82.0%)
En-Bloc Double Lung	15 (2.2%)	20 (2.6%)
Single Left Lung	54 (8.0%)	63 (8.1%)
Single Right Lung	60 (8.9%)	57 (7.3%)
Total	672 (100.0%)	779 (100.0%)

The number of transplants from both DCD and non-DCD donors increased in the post era compared to the pre era. However, in the post era, a larger percentage of donors were DCD than in the pre era (an increase from 8.5% to 11.4%).

Figure 24: Number of Deceased Donor Lung Transplants by Era and Donor Type

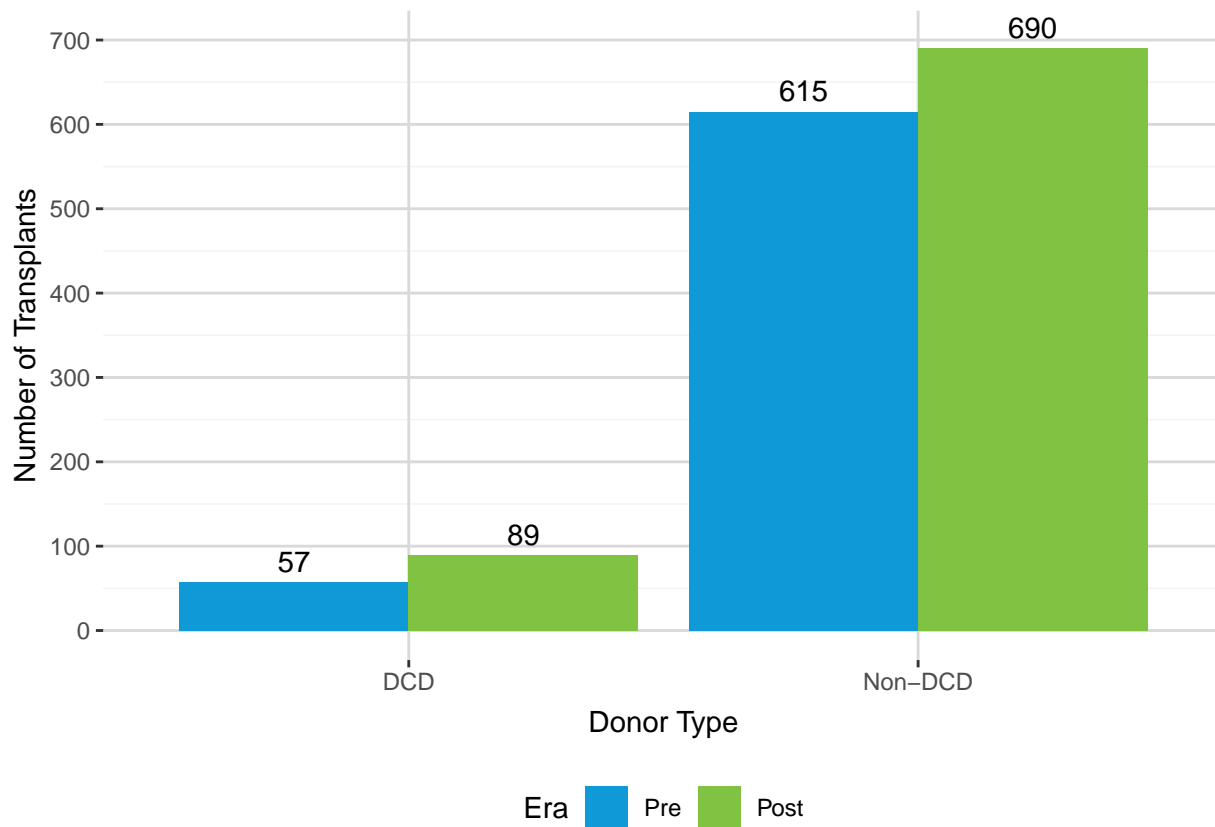


Table 24: Number of Deceased Donor Lung Transplants by Era and Donor Type

Donor Type	Pre	Post
DCD	57 (8.5%)	89 (11.4%)
Non-DCD	615 (91.5%)	690 (88.6%)
Total	672 (100.0%)	779 (100.0%)

The number of transplant recipients both with and without an approved exception request increased in the post era compared to the pre era. However, in the post era, a larger percentage of transplant recipients had an approved exception request compared to the pre era (an increase from 3% to 6.7%).

Figure 25: Number of Deceased Donor Lung Transplants by Era and Exception Request Status

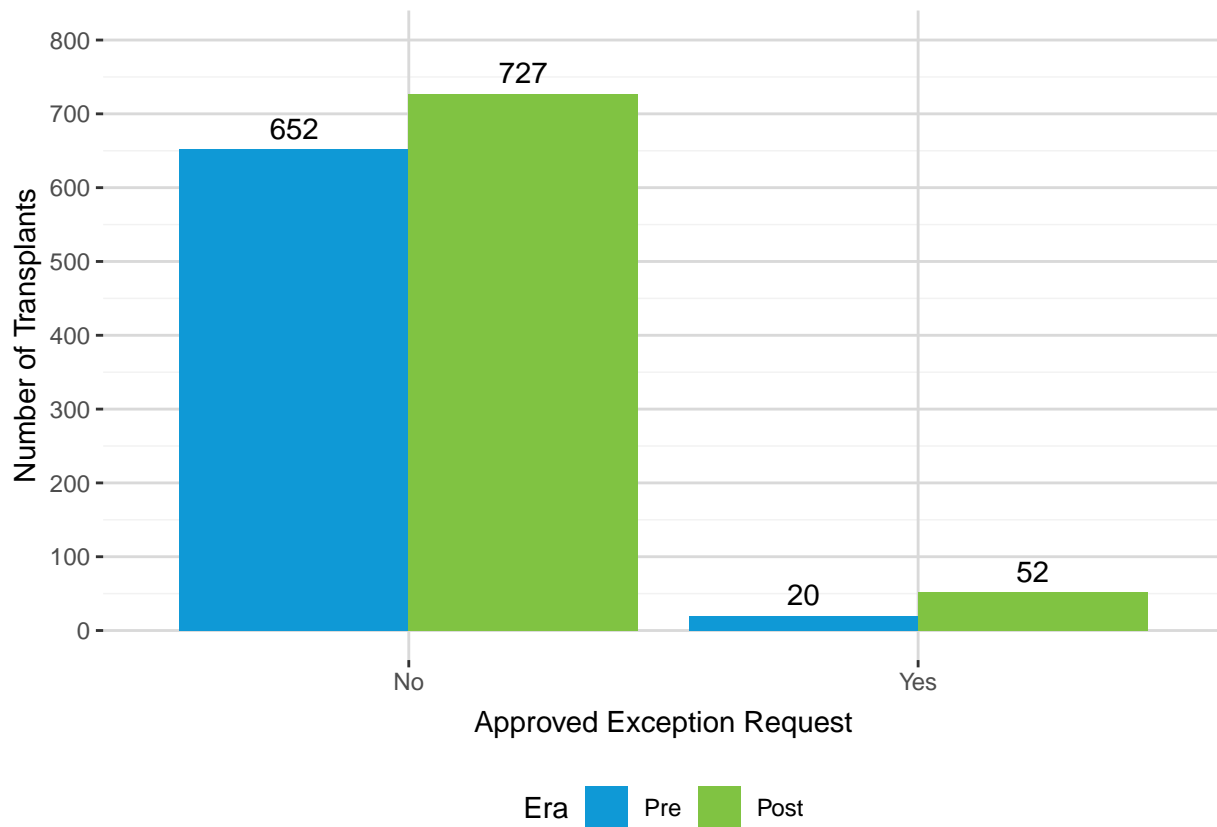


Table 25: Number of Deceased Donor Lung Transplants by Era and Exception Request Status

Approved Exception Request	Pre	Post
No	652 (97.0%)	727 (93.3%)
Yes	20 (3.0%)	52 (6.7%)
Total	672 (100.0%)	779 (100.0%)

Figure 26 and Table 26 show the number of transplant recipients with an approved exception request by diagnosis group and era. Overall, the number of transplant recipients with an approved exception request increased for patients in diagnosis groups A, B, and D, with the largest increase observed for those in group D (from 9 to 25).

Figure 26: Number of Deceased Donor Lung Transplants by Era, Diagnosis Group, and Exception Request Status

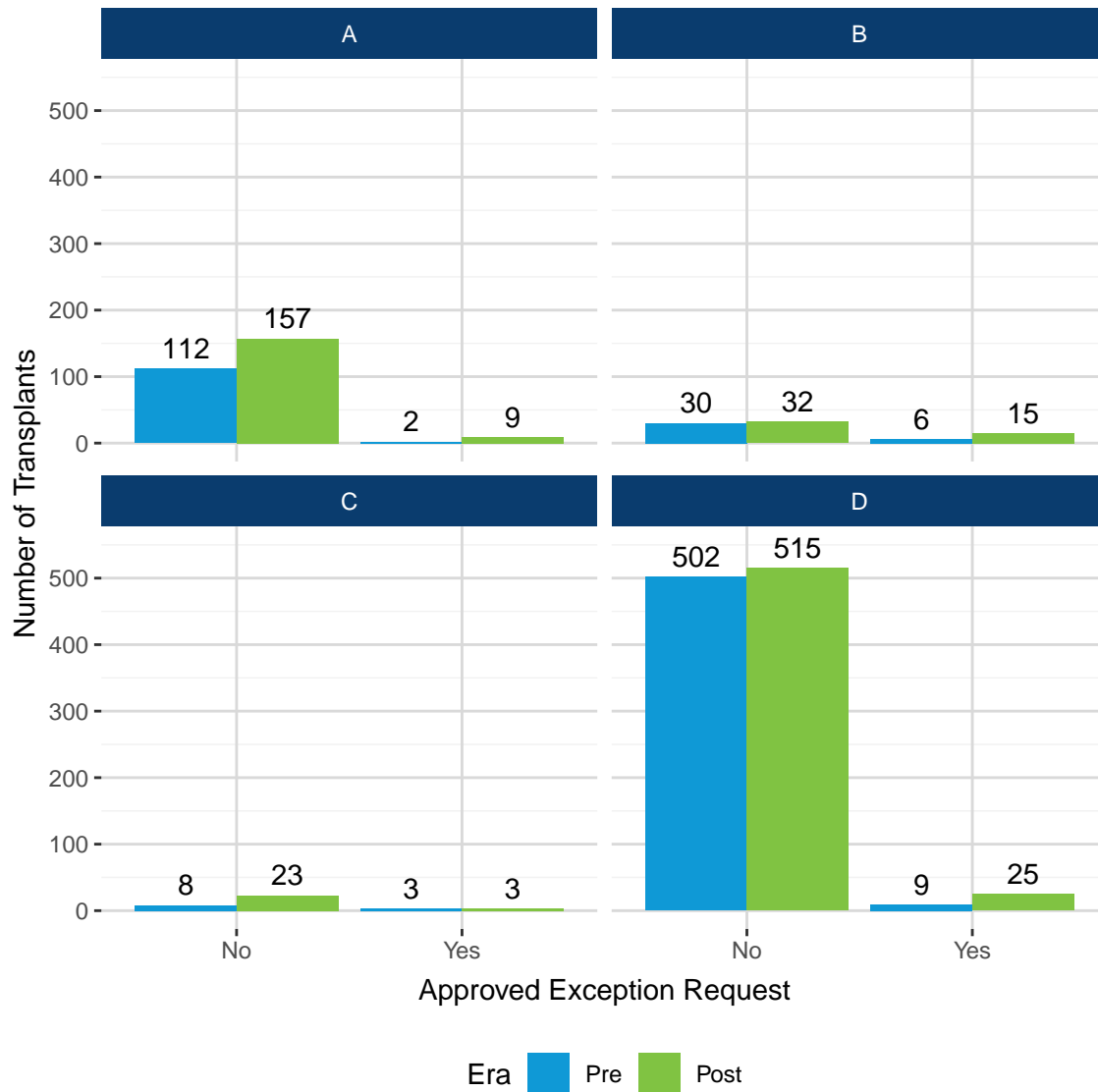


Table 26: Number of Deceased Donor Lung Transplants by Era, Diagnosis Group, and Exception Request Status

Era	Approved Exception Request	Diagnosis Group			
		A	B	C	D
Pre	No	112 (98.2%)	30 (83.3%)	8 (72.7%)	502 (98.2%)
	Yes	2 (1.8%)	6 (16.7%)	3 (27.3%)	9 (1.8%)
	Total	114 (100.0%)	36 (100.0%)	11 (100.0%)	511 (100.0%)
Post	No	157 (94.6%)	32 (68.1%)	23 (88.5%)	515 (95.4%)
	Yes	9 (5.4%)	15 (31.9%)	3 (11.5%)	25 (4.6%)
	Total	166 (100.0%)	47 (100.0%)	26 (100.0%)	540 (100.0%)

In the post policy era, the median distance from the donor hospital to transplant center (344 Nautical Miles (NM)) was greater compared to the pre era (193 NM). SRTR pre-implementation modeling indicated that travel distance would increase for highly medically urgent candidates.

Figure 27: Distribution of Distance from Donor Hospital to Transplant Program for Lung Transplants by Era

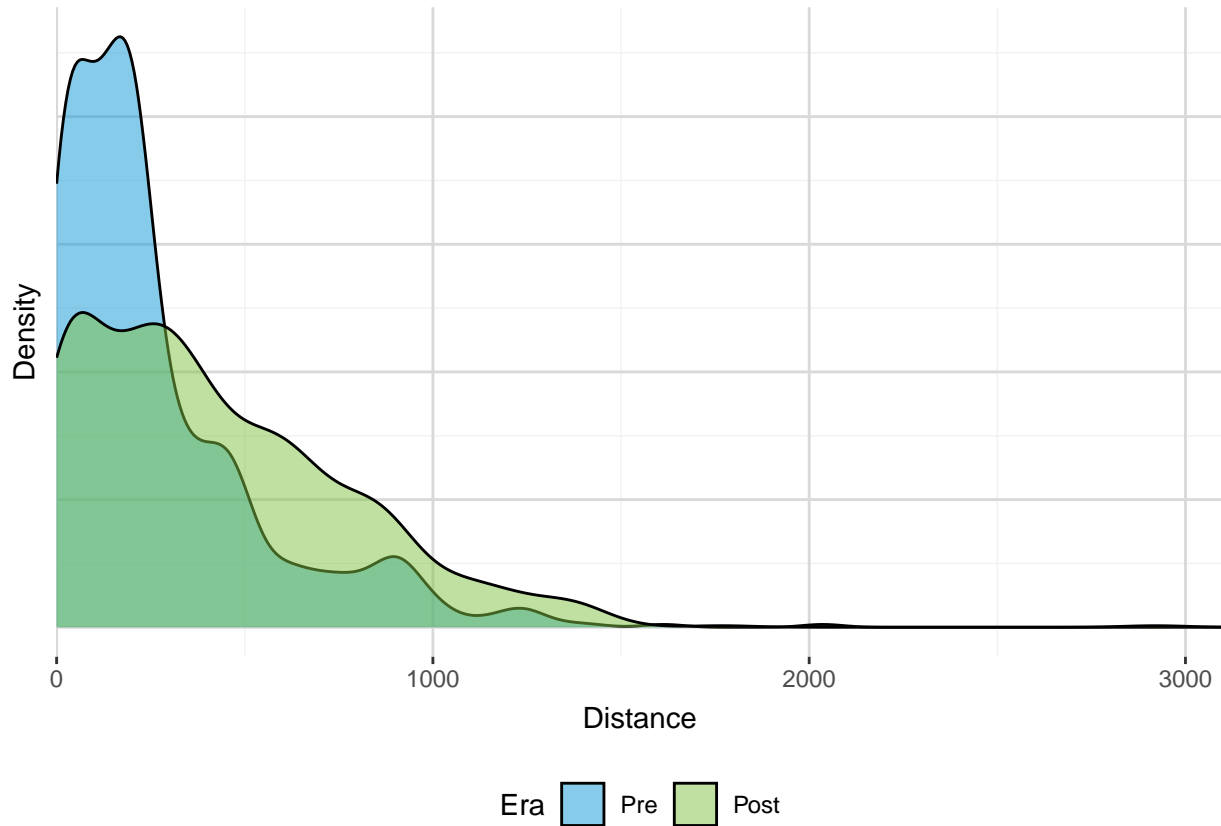


Table 27: Distribution of Distance from Donor Hospital to Transplant Program for Lung Transplants by Era

Era	N	Min	25th Percentile	Median	75th Percentile	Max	N Missing
Pre	672	0	75	193	370.5	2036	0
Post	779	0	138	344	633.5	2920	0

In the post policy era, median distance from the donor hospital to transplant program increased for non-DCD organs (from 190 NM to 358.5 NM) and remained similar for DCD organs.

Figure 28: Distribution of Distance from Donor Hospital to Transplant Program by Era and Donor Type

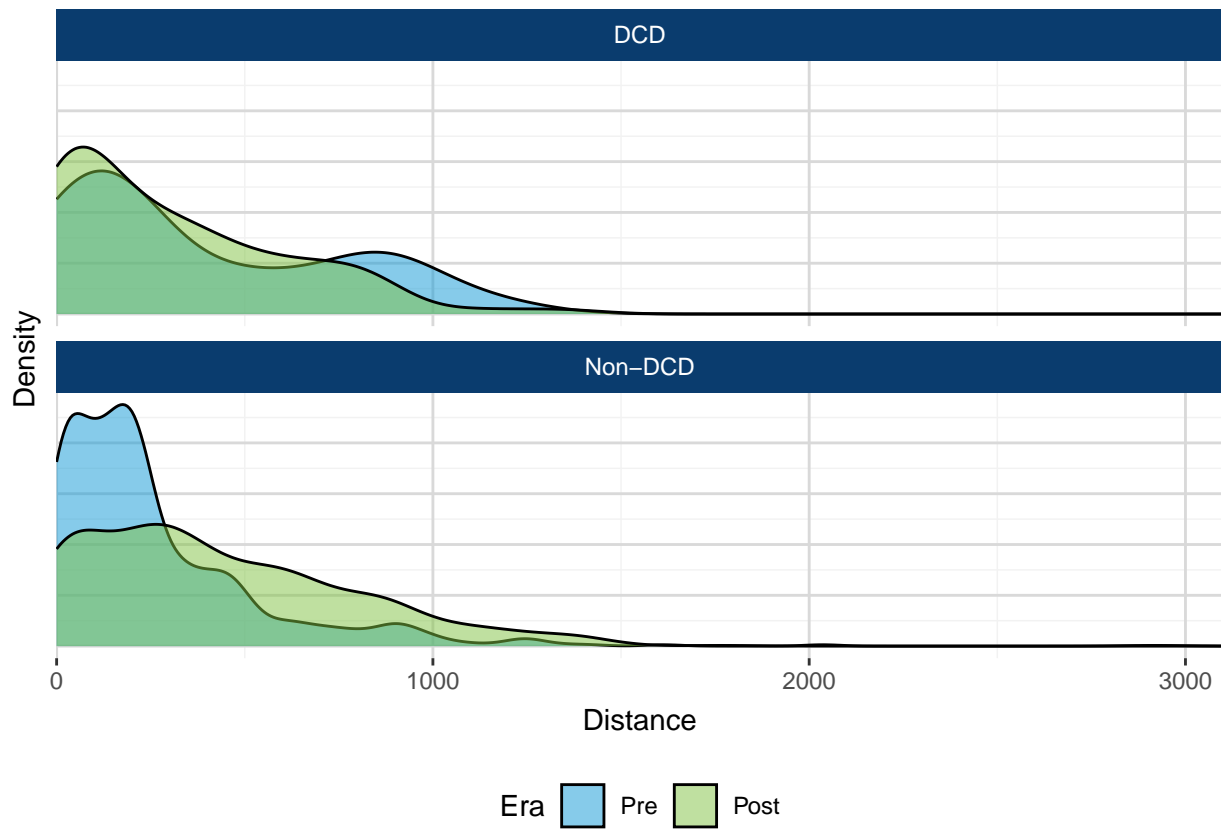


Table 28: Distribution of Distance from Donor Hospital to Transplant Program by Era and Donor Type

Donor Type	Era	N	Min	25th Percentile	Median	75th Percentile	Max	N Missing
DCD	Pre	57	0	85.0	199.0	738	1198	0
	Post	89	0	46.0	207.0	510	1340	0
Non-DCD	Pre	615	0	75.0	190.0	339	2036	0
	Post	690	0	155.5	358.5	642	2920	0

In the post era, median distance for the most medically urgent patients (medical urgency points ≥ 2.5) was greater (472.5 NM) than the median distance for all other recipients. SRTR modeling indicated travel distances would increase for the most medically urgent recipients.

Figure 29: Distribution of Distance from Donor Hospital to Transplant Program by Medical Urgency Points in the Post Policy Era

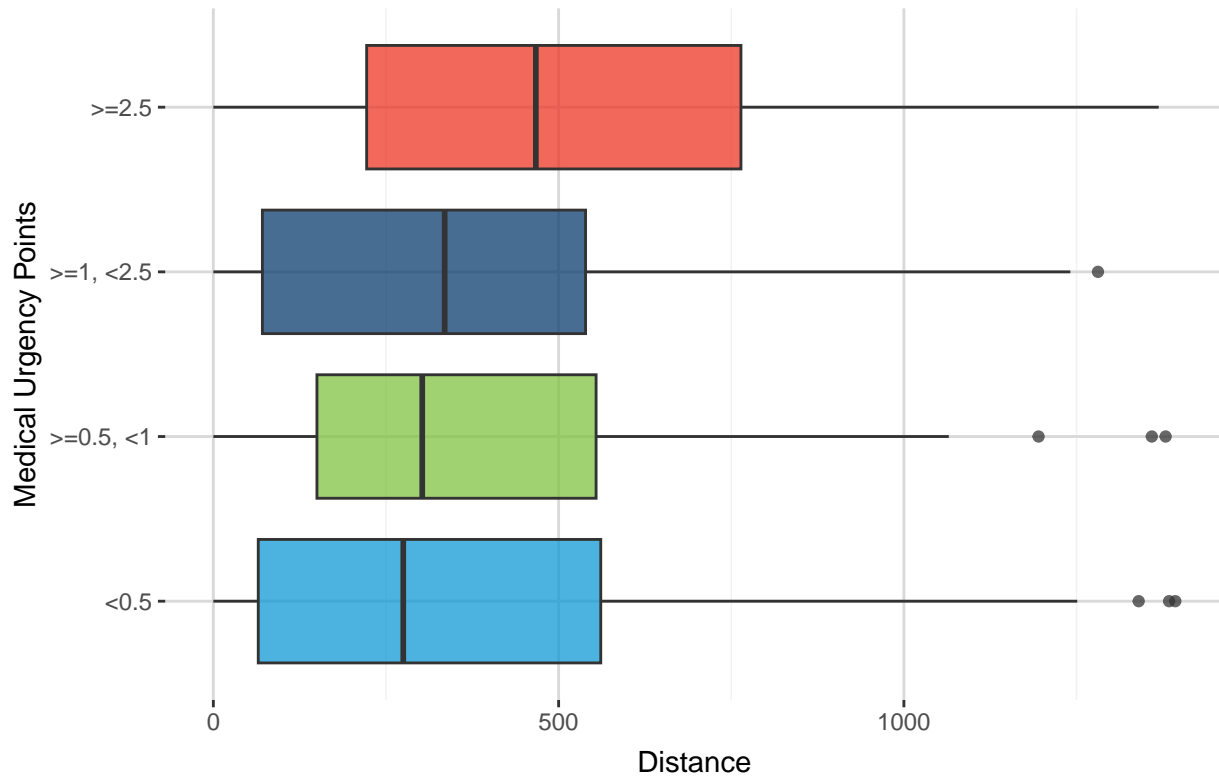
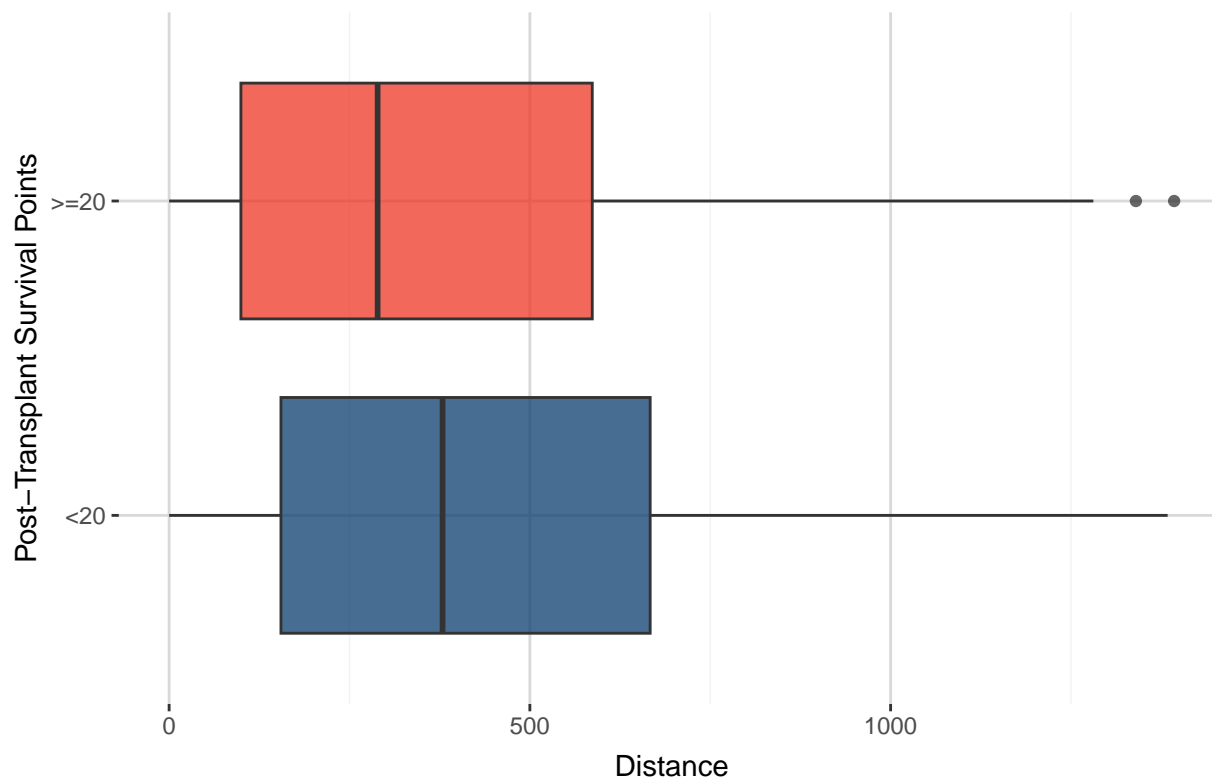


Table 29: Distribution of Distance from Donor Hospital to Transplant Program by Medical Urgency Points in the Post Policy Era

Medical Urgency Points	N	Min	25th Percentile	Median	75th Percentile	Max	N Missing
<0.5	336	0	71.00	278.5	581	2920	0
$\ge 0.5, < 1$	98	0	154.25	310.0	579	1769	0
$> 1, < 2.5$	89	0	71.00	335.0	539	1281	0
≥ 2.5	256	0	225.00	472.5	774	1415	0

In the post era, median distance for patients in the bottom 50% of post-transplant survival estimates (post-transplant survival points <20; distance = 380.5 NM) was greater than the median distance for patients in the top 50% of post-transplant survival estimates (post-transplant survival points \geq 20; distance = 293 NM).

Figure 30: Distribution of Distance from Donor Hospital to Transplant Program by Post-Transplant Survival Points in the Post Policy Era



View is restricted to the 99th percentile of distance (1393 NM). There were 8 cases where lungs traveled further than this distance in the post policy era.

Table 30: Distribution of Distance from Donor Hospital to Transplant Program by Post-Transplant Survival Points in the Post Policy Era

Post-Transplant Survival Points	N	Min	25th Percentile	Median	75th Percentile	Max	N Missing
<20	458	0	159.75	380.5	678.5	1508	0
\geq 20	321	0	105.00	293.0	589.0	2920	0

In the post era, median distance from the donor hospital to transplant center was greatest for patients with the highest CAS subscores (subscore ≥ 24 ; distance = 495 NM). CAS subscores are calculated by summing all components of CAS, except for the efficiency points; this includes the sum of medical urgency points, post-transplant survival points, biological disadvantage points, and patient access points.

Figure 31: Distribution of Distance from Donor Hospital to Transplant Program by CAS Subscore in the Post Policy Era

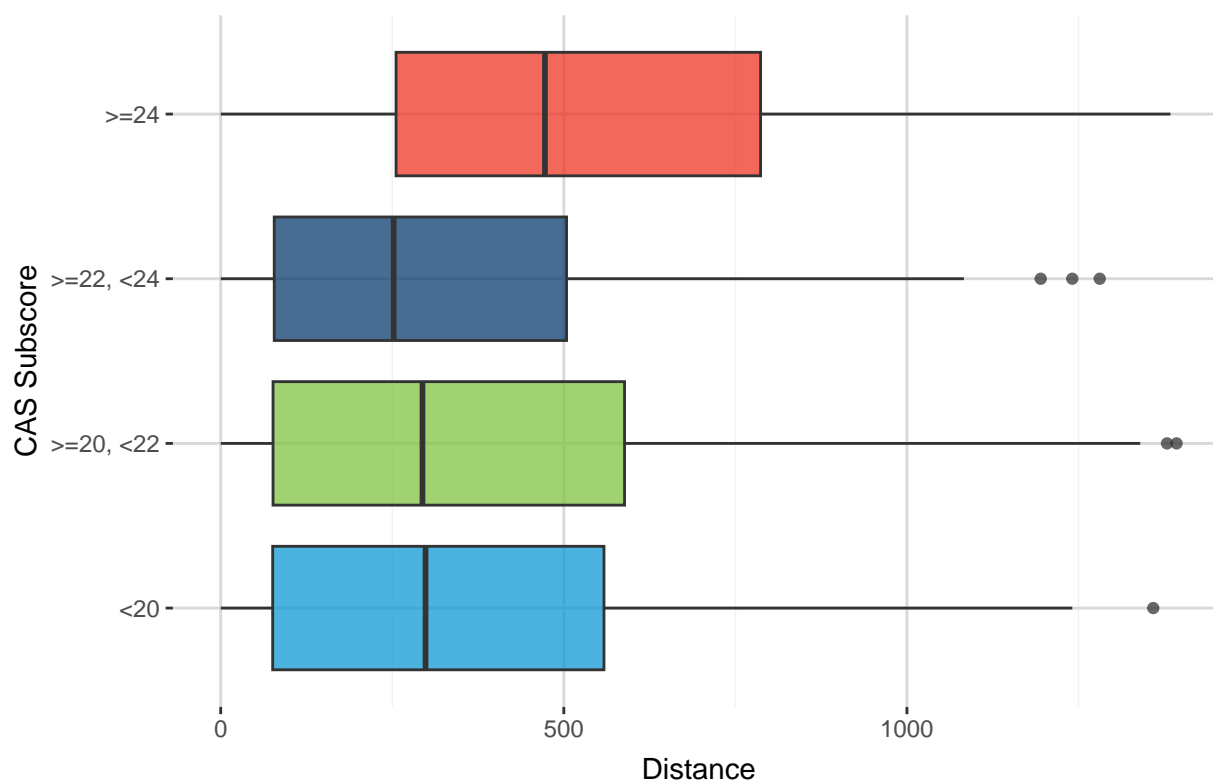
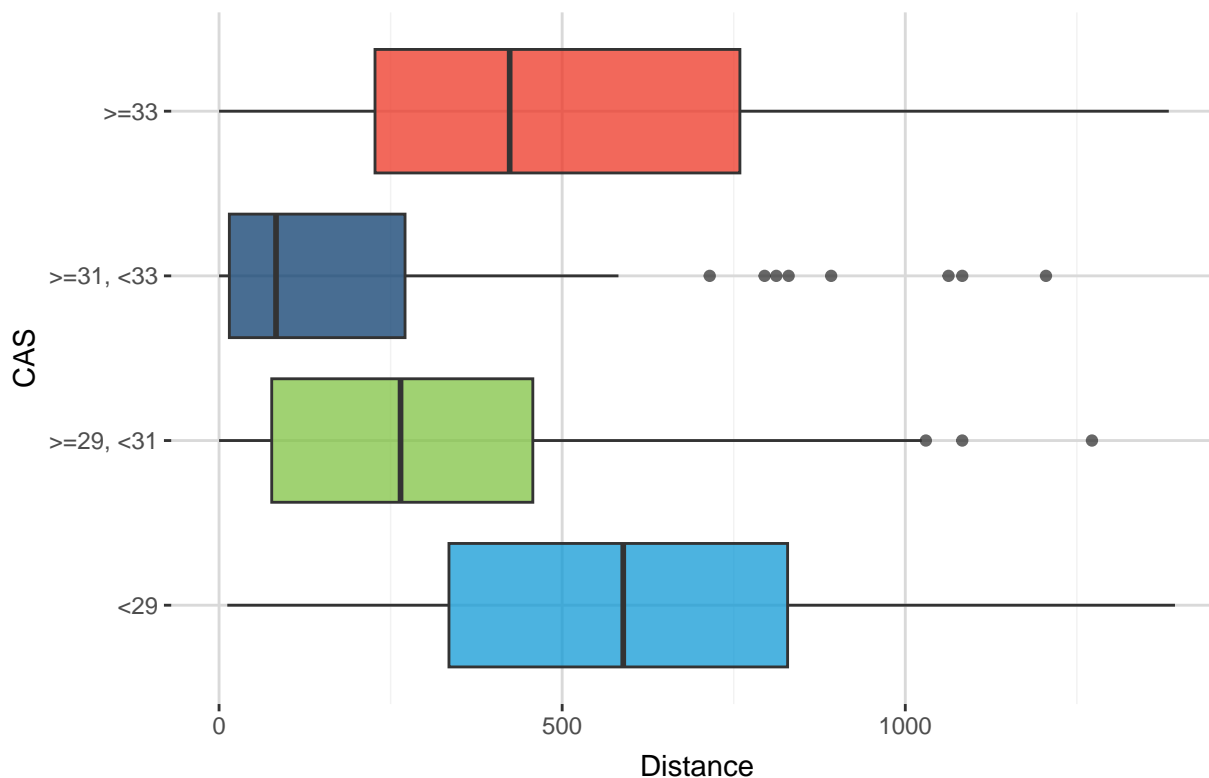


Table 31: Distribution of Distance from Donor Hospital to Transplant Program by CAS Subscore in the Post Policy Era

CAS Subscore	N	Min	25th Percentile	Median	75th Percentile	Max	N Missing
<20	97	0	76.00	302.0	560.0	1508	0
≥ 20 , <22	341	0	77.00	307.0	595.0	2920	0
≥ 22 , <24	102	0	79.25	252.5	508.5	1405	0
≥ 24	239	0	259.00	495.0	791.0	1415	0

In the post era, median distance for patients with the highest (≥ 33) and lowest (< 29) CAS scores was greater than the median distance for patients with intermediate CAS scores (≥ 29 and < 33). CAS scores are calculated by adding efficiency points to the CAS subscore.

Figure 32: Distribution of Distance from Donor Hospital to Transplant Program by CAS in the Post Policy Era



View is restricted to the 99th percentile of distance (1393 NM). There were 8 cases where lungs traveled further than this distance in the post policy era.

Table 32: Distribution of Distance from Donor Hospital to Transplant Program by CAS In the Post Policy Era

CAS	N	Min	25th Percentile	Median	75th Percentile	Max	N Missing
<29	168	12	337.75	611.5	849.75	2920	0
$\geq 29, < 31$	253	0	77.00	266.0	458.00	1398	0
$\geq 31, < 33$	105	0	15.00	83.0	271.00	1205	0
≥ 33	228	0	229.75	430.5	764.25	1415	0
Not Calculated	25	3	71.00	195.0	246.00	962	0

In addition to assessing the impact of continuous distribution on the distance that lungs traveled, we also assessed the impact that the policy change had on cold ischemia time. However, because transplant programs have 90 days to report cold ischemia time, 40.95% of transplants in the post era did not have cold ischemia time reported at the time this report was generated. Thus, cold ischemia time has been omitted from this report, but will be included in the six-month report.

In the post-policy era, the number of heart/lung transplants decreased (from 18 to 12), while the number of lung/liver transplants increased (from 2 to 8). The occurrence of other multiorgan transplants was rare in both the pre and post eras.

Figure 33: Number of Lung-Multiorgan Transplants by Era and Multiorgan Type

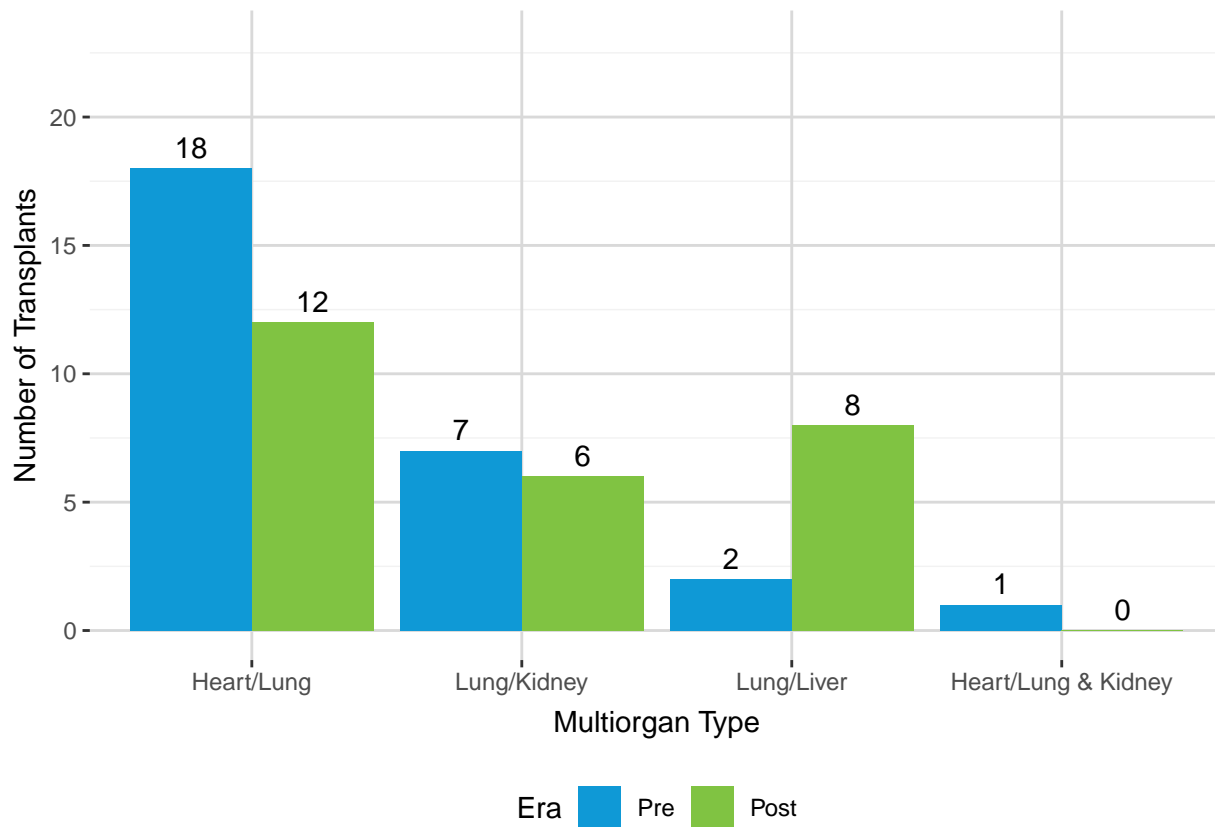


Table 33: Number of Lung-Multiorgan Transplants by Era and Multiorgan Type

Multiorgan Type	Pre	Post
Heart/Lung	18 (64.3%)	12 (46.2%)
Lung/Kidney	7 (25.0%)	6 (23.1%)
Lung/Liver	2 (7.1%)	8 (30.8%)
Heart/Lung & Kidney	1 (3.6%)	0 (0.0%)
Total	28 (100.0%)	26 (100.0%)

Utilization

Utilization rate is defined as the percent of lungs that are transplanted based on all possible lungs from every deceased donor with at least one organ recovered for the purpose of transplant; this definition assumes that each donor has two possible lungs for donation.

Utilization rates increased or remained stable in 9 OPTN regions and decreased in 2 OPTN regions. At the national level, utilization rates did not change substantially between the pre and post policy eras.

Figure 34: Utilization Rates by Era and OPTN Region

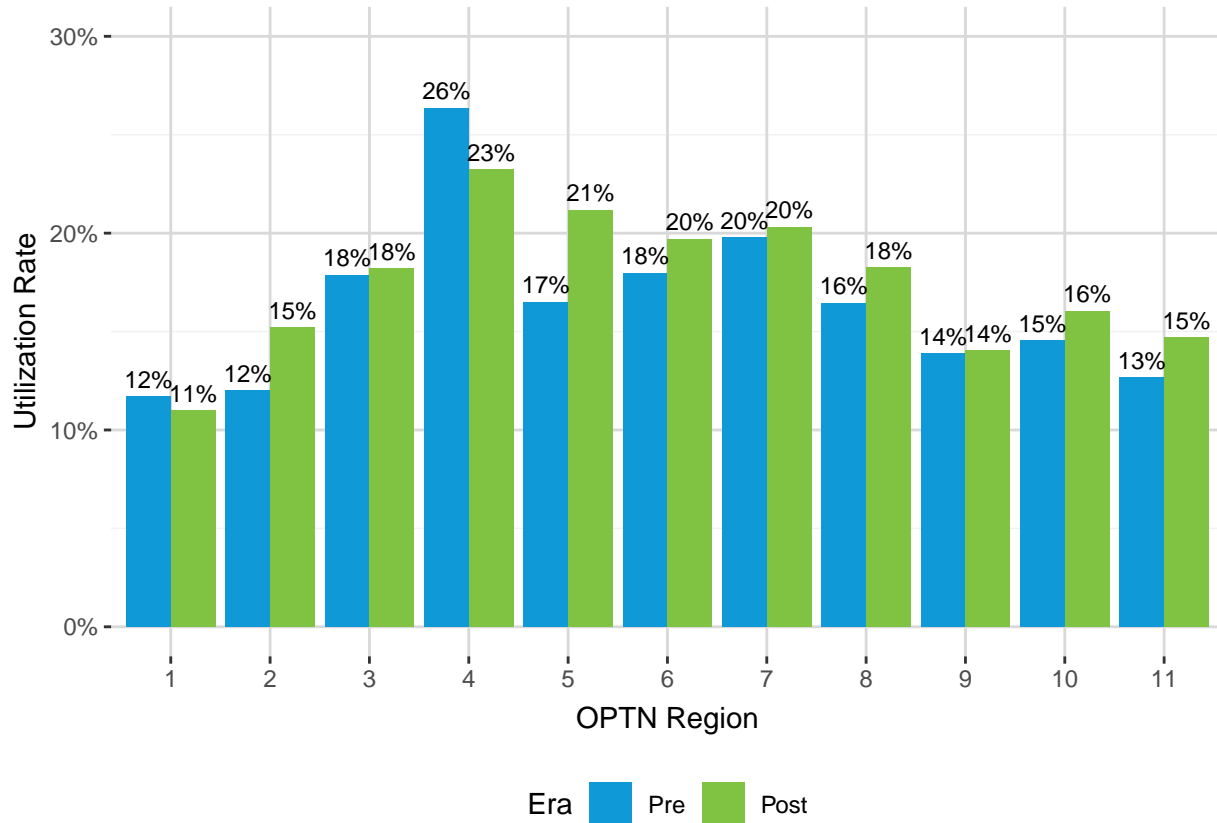


Table 34: Utilization Rates by Era and OPTN Region

OPTN Region	Era	N Donors	N Lungs Transplanted	Utilization Rate
1	Pre	124	29	11.69%
	Post	141	31	10.99%
2	Pre	404	97	12.00%
	Post	434	132	15.21%
3	Pre	607	217	17.87%
	Post	635	231	18.19%
4	Pre	366	193	26.37%
	Post	383	178	23.24%
5	Pre	615	203	16.50%
	Post	602	255	21.18%
6	Pre	153	55	17.97%
	Post	165	65	19.70%
7	Pre	283	112	19.79%
	Post	293	119	20.31%
8	Pre	310	102	16.45%
	Post	326	119	18.25%
9	Pre	198	55	13.89%
	Post	221	62	14.03%
10	Pre	426	124	14.55%
	Post	508	163	16.04%
11	Pre	478	121	12.66%
	Post	527	155	14.71%
All Regions	Pre	3964	1308	16.50%
	Post	4235	1510	17.83%

Utilization rates increased slightly for both DCD and non-DCD donors

Figure 35: Utilization Rates by Era and Donor Type

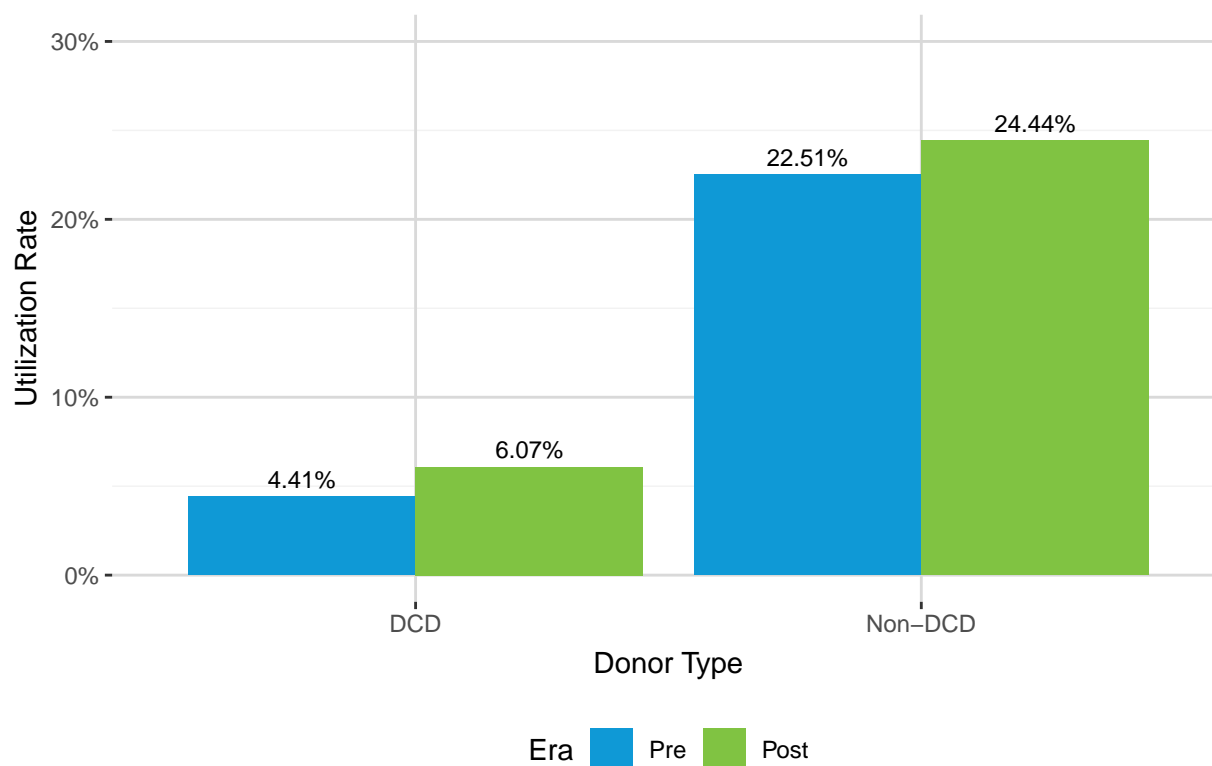


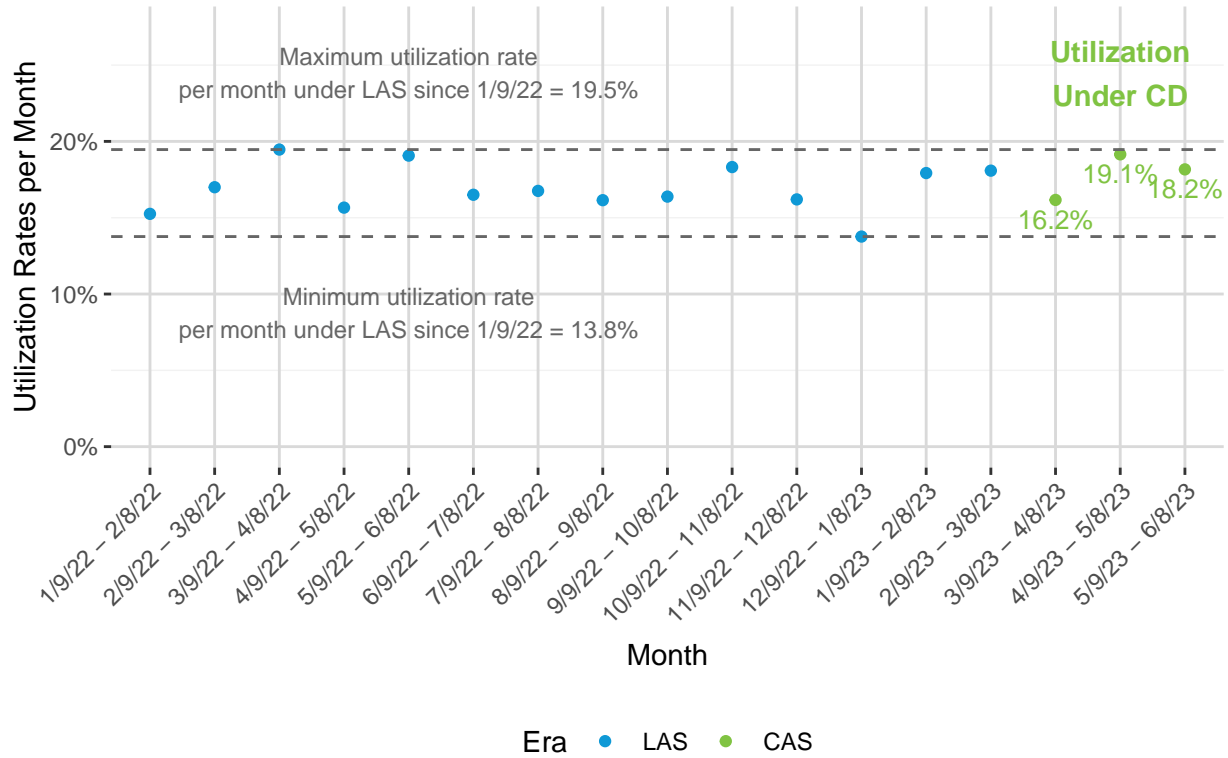
Chart does not include the 1 donor for whom DCD status was not yet reported at the time of this report's production.

Table 35: Utilization Rates by Era and Donor Type

DCD Status	Era	N Donors	N Lungs Transplanted	Utilization Rate
DCD	Pre	1316	116	4.41%
	Post	1523	185	6.07%
Non-DCD	Pre	2648	1192	22.51%
	Post	2711	1325	24.44%
Not Reported	Post	1	0	0.00%
All Donors	Pre	3964	1308	16.50%
	Post	4235	1510	17.83%

The utilization rate per month varied widely. In 2022, under LAS, the utilization rate per month varied from 13.76% to 19.46%. The utilization rates in the first 3 months of continuous distribution were within the range of utilization rates per month in 2022.

Figure 36: Utilization Rates Per Month



Note that all months are defined from the 9th to the 8th; therefore, the last three months under LAS do not perfectly overlap with the defined pre policy era.

Table 36: Utilization Rates Per Month

Policy Era	Month	N Donors	N Lungs Transplanted	Utilization Rate for Lungs
LAS	1/9/22 - 2/8/22	1131	345	15.3%
	2/9/22 - 3/8/22	1156	393	17.0%
	3/9/22 - 4/8/22	1233	480	19.5%
	4/9/22 - 5/8/22	1226	384	15.7%
	5/9/22 - 6/8/22	1201	458	19.1%
	6/9/22 - 7/8/22	1224	404	16.5%
	7/9/22 - 8/8/22	1286	431	16.8%
	8/9/22 - 9/8/22	1254	405	16.1%
	9/9/22 - 10/8/22	1233	404	16.4%
	10/9/22 - 11/8/22	1332	488	18.3%
	11/9/22 - 12/8/22	1321	428	16.2%
	12/9/22 - 1/8/23	1384	381	13.8%
CAS	1/9/23 - 2/8/23	1297	465	17.9%
	2/9/23 - 3/8/23	1200	434	18.1%
	3/9/23 - 4/8/23	1392	450	16.2%
	4/9/23 - 5/8/23	1376	527	19.1%
	5/9/23 - 6/8/23	1467	533	18.2%

^a Note that all months are defined from the 9th to the 8th; therefore, the last three months under LAS do not perfectly overlap with the defined pre policy era.

Non-use rate is defined as the number of lungs recovered for the purpose of transplant but not transplanted out of all lungs recovered for transplant. Non-use rates remained stable or decreased in the post policy era in 7 out of 11 OPTN regions and remained relatively stable at the national level.

Figure 37: Non-Use Rates by Era and OPTN Region

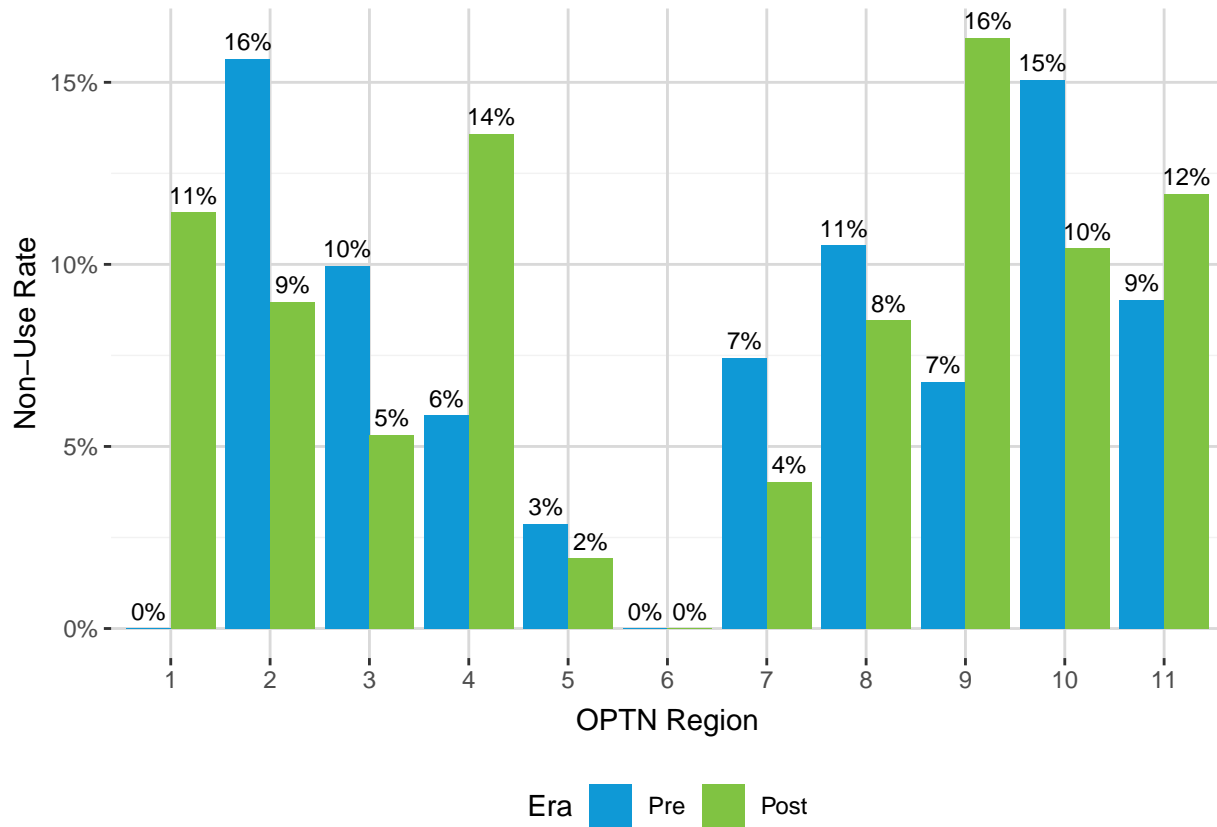


Table 37: Non-Use Rates by Era and OPTN Region

OPTN Region	Era	N Lungs Recovered	N Lungs Transplanted	Non-Use Rate
1	Pre	29	29	0.00%
	Post	35	31	11.43%
2	Pre	115	97	15.65%
	Post	145	132	8.97%
3	Pre	241	217	9.96%
	Post	244	231	5.33%
4	Pre	205	193	5.85%
	Post	206	178	13.59%
5	Pre	209	203	2.87%
	Post	260	255	1.92%
6	Pre	55	55	0.00%
	Post	65	65	0.00%
7	Pre	121	112	7.44%
	Post	124	119	4.03%
8	Pre	114	102	10.53%
	Post	130	119	8.46%
9	Pre	59	55	6.78%
	Post	74	62	16.22%
10	Pre	146	124	15.07%
	Post	182	163	10.44%
11	Pre	133	121	9.02%
	Post	176	155	11.93%
All Regions	Pre	1427	1308	8.34%
	Post	1641	1510	7.98%

Non-use rates fell slightly for both DCD and non-DCD donors.

Figure 38: Non-Use Rates by Era and Donor Type

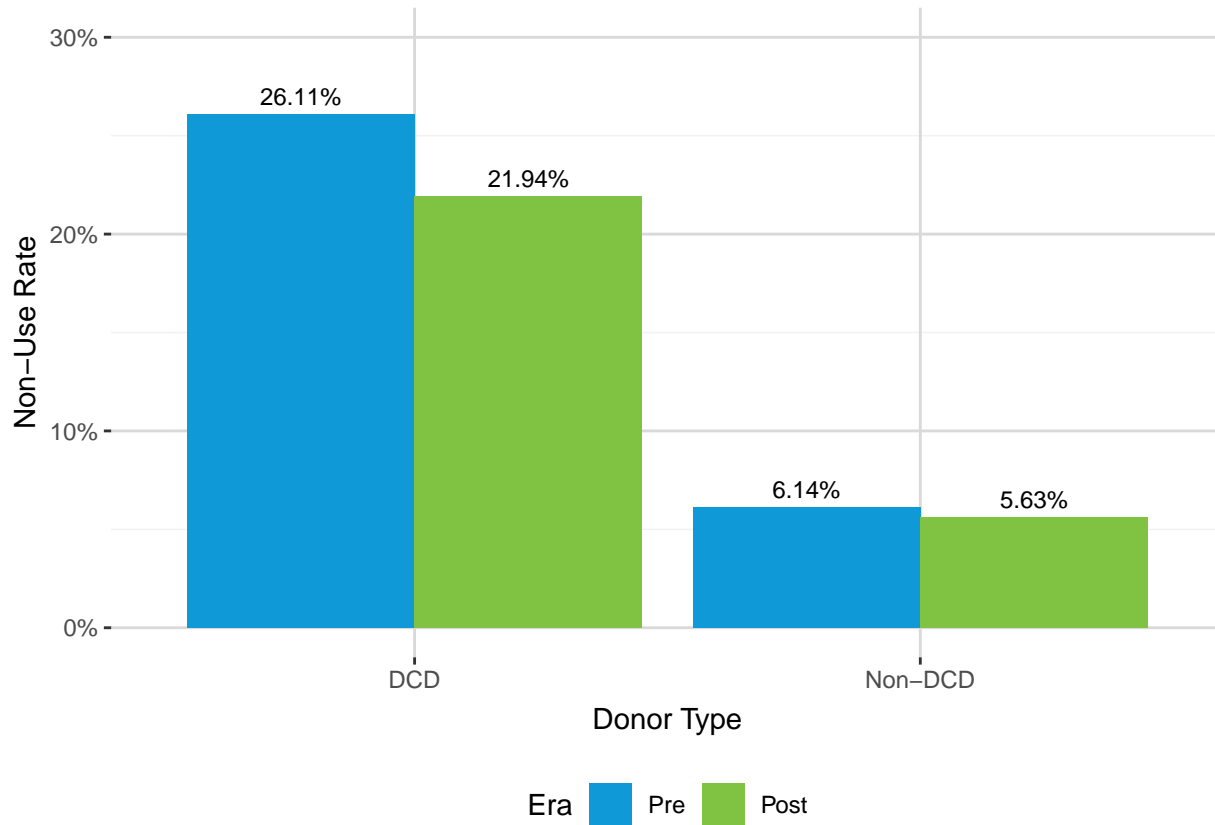
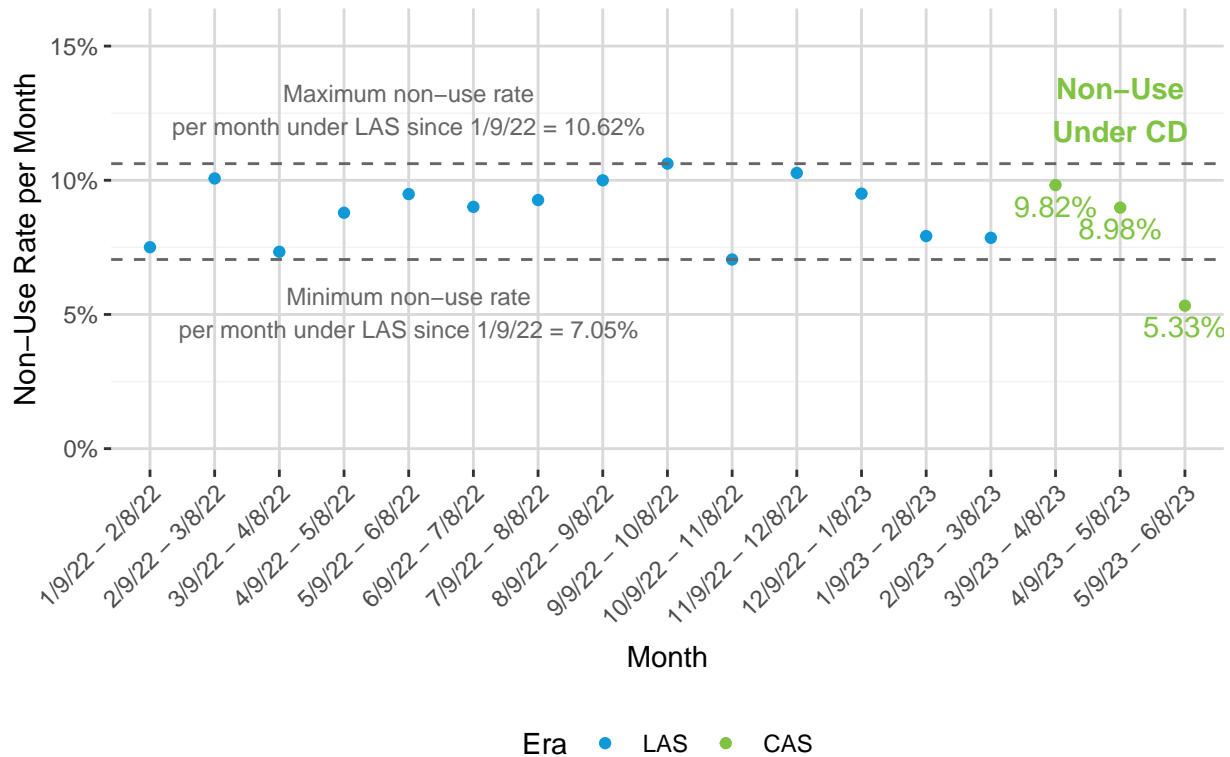


Table 38: Non-Use Rates by Era and Donor Type

DCD Status	Era	N Lungs Recovered	N Lungs Transplanted	Non-Use Rate
DCD	Pre	157	116	26.11%
	Post	237	185	21.94%
Non-DCD	Pre	1270	1192	6.14%
	Post	1404	1325	5.63%
All Donors	Pre	1427	1308	8.34%
	Post	1641	1510	7.98%

The non-use rates per month varied widely. In 2022, under LAS, the non-use rate per month varied from 7.05% to 10.62%. The non-use rates in the first two months of continuous distribution fell within this range, but the non-use rate in the third month was slightly below that range.

Figure 39: Non-Use Rates Per Month



Note that all months are defined from the 9th to the 8th; therefore, the last three months under LAS do not perfectly overlap with the defined pre policy era.

Table 39: Non-Use Rate Per Month

Era	Month	N Lungs Recovered	N Lungs Transplanted	Non-Use Rate
LAS	1/9/22 - 2/8/22	373	345	7.51%
	2/9/22 - 3/8/22	437	393	10.07%
	3/9/22 - 4/8/22	518	480	7.34%
	4/9/22 - 5/8/22	421	384	8.79%
	5/9/22 - 6/8/22	506	458	9.49%
	6/9/22 - 7/8/22	444	404	9.01%
	7/9/22 - 8/8/22	475	431	9.26%
	8/9/22 - 9/8/22	450	405	10.00%
	9/9/22 - 10/8/22	452	404	10.62%
	10/9/22 - 11/8/22	525	488	7.05%
	11/9/22 - 12/8/22	477	428	10.27%
	12/9/22 - 1/8/23	421	381	9.50%
CAS	1/9/23 - 2/8/23	505	465	7.92%
	2/9/23 - 3/8/23	471	434	7.86%
	3/9/23 - 4/8/23	499	450	9.82%
	4/9/23 - 5/8/23	579	527	8.98%
	5/9/23 - 6/8/23	563	533	5.33%

^a Note that all months are defined from the 9th to the 8th; therefore, the last three months under LAS do not perfectly overlap with the defined pre policy era.

At the national level, the percentage of lungs perfused remained relatively stable. The number of lungs perfused in individual regions was too small to draw definitive conclusions on geographic trends.

Figure 40: Percent of Machine Perfused Lungs by Era and OPTN Region Out of All Lungs Recovered for Transplant

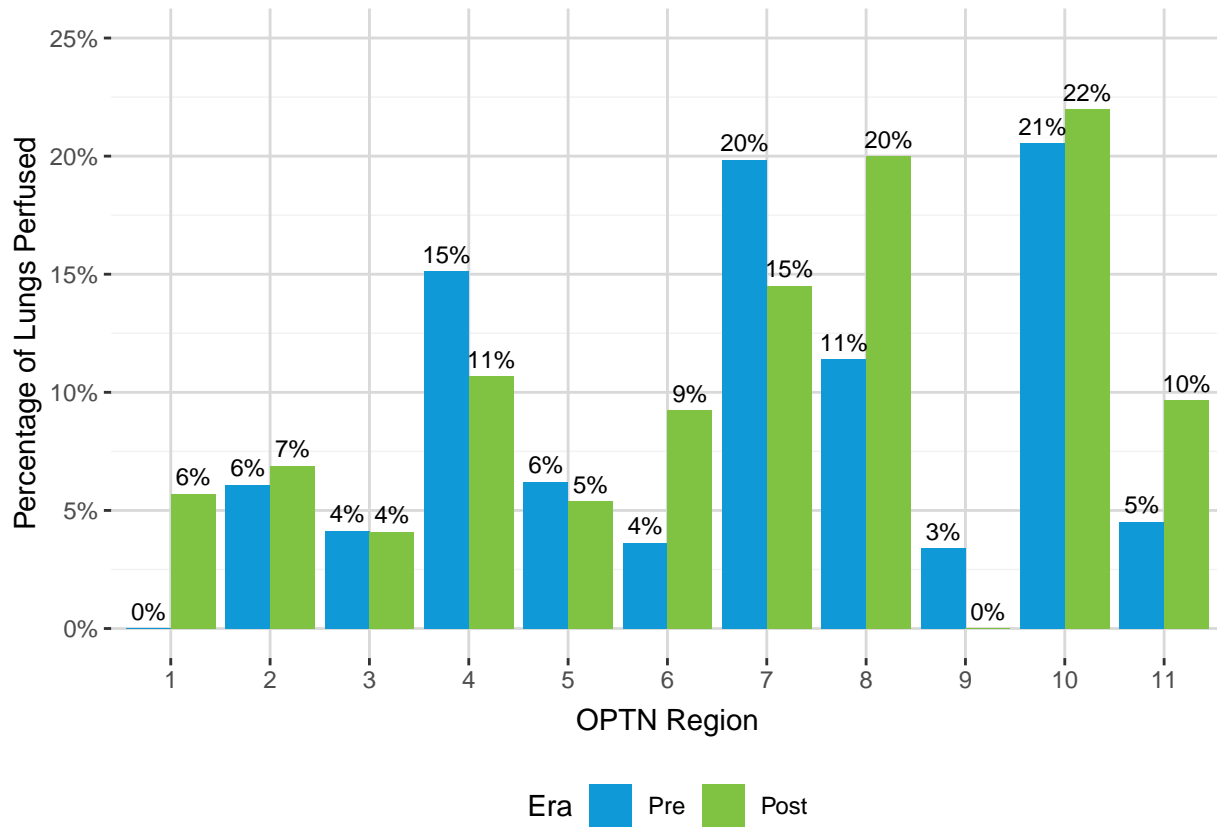
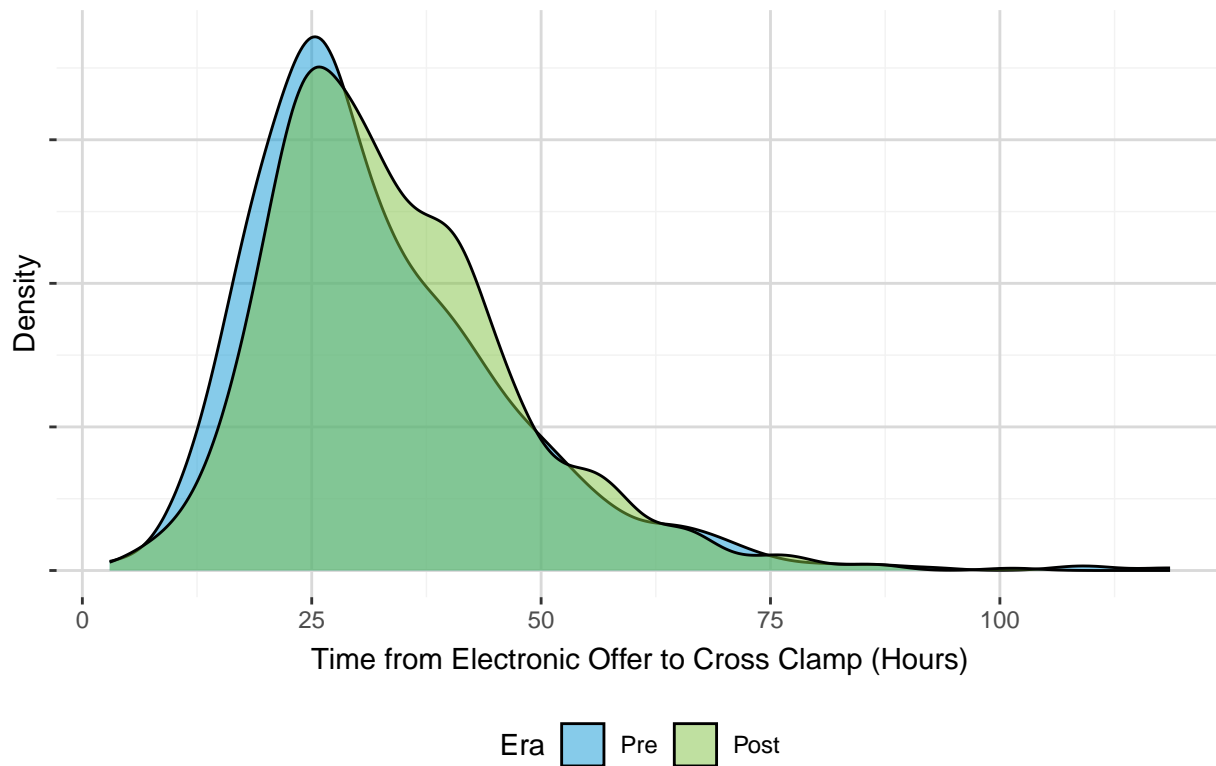


Table 40: Percent of Machine Perfused Lungs by Era and OPTN Region Out of All Lungs Recovered for Transplant

OPTN Region	Era	N Lungs Recovered	N Lungs Perfused	Percent Lungs Perfused
1	Pre	29	0	0.00%
	Post	35	2	5.71%
2	Pre	115	7	6.09%
	Post	145	10	6.90%
3	Pre	241	10	4.15%
	Post	244	10	4.10%
4	Pre	205	31	15.12%
	Post	206	22	10.68%
5	Pre	209	13	6.22%
	Post	260	14	5.38%
6	Pre	55	2	3.64%
	Post	65	6	9.23%
7	Pre	121	24	19.83%
	Post	124	18	14.52%
8	Pre	114	13	11.40%
	Post	130	26	20.00%
9	Pre	59	2	3.39%
	Post	74	0	0.00%
10	Pre	146	30	20.55%
	Post	182	40	21.98%
11	Pre	133	6	4.51%
	Post	176	17	9.66%
All Regions	Pre	1427	138	9.67%
	Post	1641	165	10.05%

The distribution of time from first electronic offer to cross clamp for lungs recovered increased from a median of 28.56 hours in the pre era to 31.39 hours in the post era.

Figure 41: Time from First Electronic Offer to Cross Clamp (Hours) for All Lungs Recovered by Era



There were 3 values not yet reported at the time of this report's creation. This report was created before the 90 day data lag allowed by the OPTN had passed.

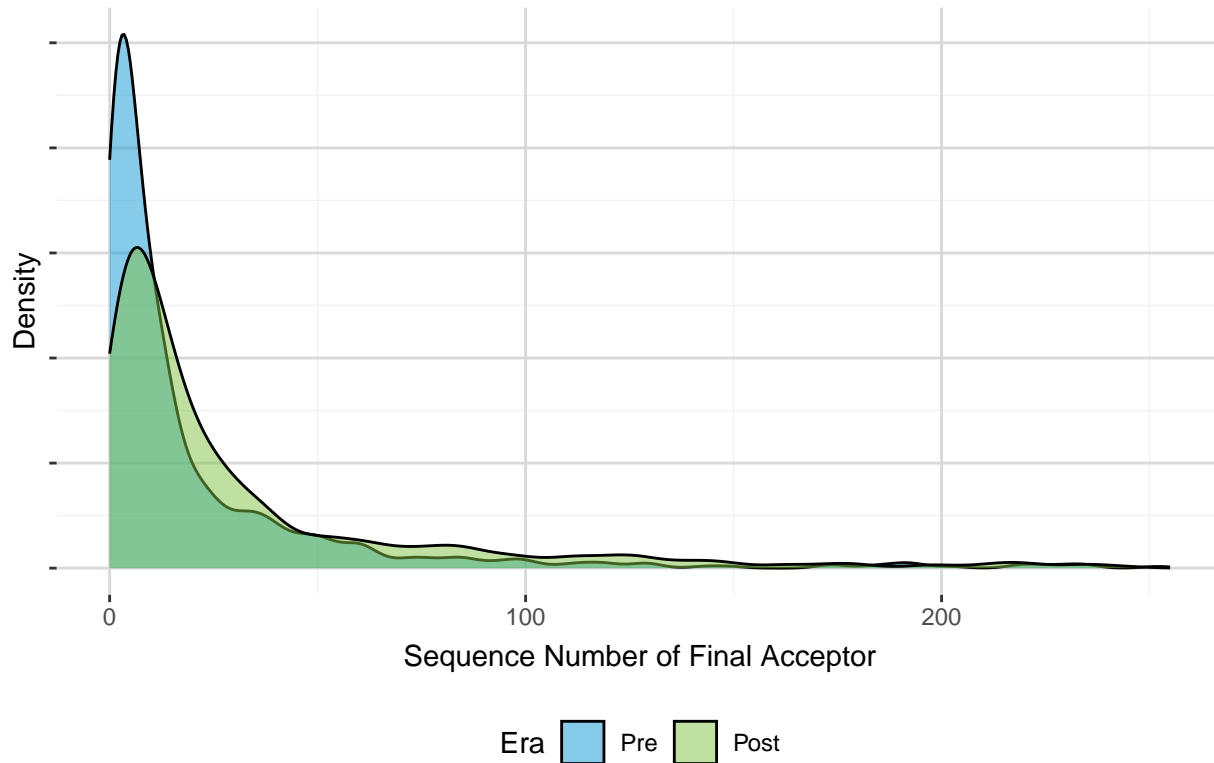
Table 41: Time from First Electronic Offer to Cross Clamp (Hours) for All Lungs Recovered by Era

Era	N	N Missing	Min	25th Percentile	Median	75th Percentile	90th Percentile	Max
Pre	773	1	2.98	22.82	28.56	39.46	51.00	118.55
Post	865	2	3.42	24.20	31.39	40.89	51.11	101.36

^a There were 3 values not yet reported at the time of this report's creation. This report was created before the 90 day data lag allowed by the OPTN had passed.

The median sequence number of the final acceptor increased from 7 in the pre era to 14 in the post era.

Figure 42: Distribution of the Sequence Number of the Final Acceptor on Lung Match Run



View is restricted to the 99th percentile of sequence number (255). There were 15 instances where the sequence number of the final acceptor was greater than 255.

Table 42: Distribution of the Sequence Number of the Final Acceptor on Lung Match Run

Era	N	Min	25th Percentile	Median	75th Percentile	90th Percentile	Max
Pre	701	1	2.00	7	22	52	252
Post	802	1	5.25	14	37	99	493

^a Note there are more recorded final acceptors than transplants performed in each era. Being the final acceptor of an organ does not necessarily mean that the organ was ultimately transplanted.