



COVID-19 Guide

Adjustments to Transplant Program and OPO Evaluation Metrics

The Scientific Registry of Transplant Recipients (SRTR), under contract from the Health Resources and Services Administration (HRSA), is charged with evaluating the performance of the nation's transplant system through publication of semi-annual transplant program-specific reports (PSRs) and organ procurement organization (OPO)-specific reports (OSRs). These reports contain performance metrics covering various time periods. For OPOs, these metrics include eligible death conversion rates and deceased donor organ yield. For transplant programs, they include pre-transplant mortality rates (formerly called waitlist mortality rates), transplant rates, organ offer acceptance rates, patient mortality after listing, and 1-month, 1-year, and 3-year posttransplant outcomes including graft survival and patient survival.

In response to the current global pandemic, SRTR modified the evaluation metrics for transplant programs and OPOs for the reports released in January 2021. The reports released in January 2021 made adjustments to transplant program and OPO performance metrics so that data beyond the declaration of a national public health emergency on March 13, 2020, were not included in the metrics.

The SRTR Review Committee (SRC) reviewed the metrics at its meetings on January 20, 2021, and February 9, 2021, with the goal of determining whether continued adjustments are necessary, or if the SRTR should resume regular reporting of transplant program and OPO performance metrics. The committee reviewed data on how the pandemic has affected the nation's transplant system, and the extent to which the effects varied geographically and temporally. The committee made the following recommendations to SRTR. These recommendations were reviewed by the Health Resources and Services Administration's (HRSA's) Division of Transplantation, which oversees the SRTR. HRSA approved of these recommendations which the SRTR will implement for the July 2021 reporting cycle:

Posttransplant Outcomes (including 1-month, 1-year, and 3-year graft and patient survival):
Evaluations cohorts will continue to exclude transplants and follow-up time beyond March 12, 2020.

1-month & 1-year Patient and Graft Survival Evaluations: Transplants 1/1/2018-3/12/2020;
follow-up through 3/12/2020.

3-year Patient and Graft Survival Evaluations: Transplants 1/1/2015-12/31/2017; follow-up
through 3/12/2020.

Pre-Transplant Mortality Rate (formerly called Waitlist Mortality Rate): Evaluation cohorts will be
modified on an organ-specific basis:

Kidney and Lung: Candidates on the waitlist 1/1/2019-3/12/2020.

Liver, Heart, Pancreas, and Intestine: Candidates on the waitlist 1/1/2019-12/31/2020.

Transplant Rate: The first quarter following declaration of a national emergency will be excluded
from the transplant rate evaluations for all organ types.

Candidates on the waitlist 1/1/2019-3/12/2020 and 6/13/2020-12/31/2020.



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Overall Rate of Mortality After Listing: Patient follow-up will continue to be truncated on 3/12/2020:

Evaluation period: 1/1/2019-3/12/2020.

Offer Acceptance Rate: These evaluations will return to normal reporting cohorts.

Offers received 1/1/2020-12/31/2020.

These decisions will apply to the evaluations released in the SRTR's semi-annual program-specific reports scheduled for release on July 6, 2021. These changes have been communicated to the leadership of the Organ Procurement and Transplantation Network's Membership and Professional Standards Committee (MSPC). These decisions will then be re-evaluated as more information becomes available in preparation for the release scheduled for January 2022.

As with the January 2021 reports, SRTR will continue to report descriptive data beyond March 12, 2020, e.g., waitlist counts, transplant counts, recipient characteristics, donor counts, donor characteristics, etc., but will alter data for performance evaluation metrics as described above.



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This report contains a wide range of useful information about the heart-lung transplant program at Duke University Hospital (NCDU). The report has three main sections:

- A. Program Summary
- B. Waiting List Information
- C. Transplant Information

The Program Summary is a one-page summary highlighting characteristics of the program, including the number of candidates on the waiting list, the number of transplants performed at the program, the number of patients being cared for by the program, and patient outcomes, including outcomes while on the waiting list (the transplant rate and the death rate while on the waiting list) and outcomes after transplant (patient and graft survival probabilities). If the program performed transplants in both adults and children, survival probabilities for adults and children (pediatrics) are provided separately. For each of the outcomes measures presented, a comparison is provided showing what would be expected at this program if it were performing as similar programs around the country perform when treating similar patients. More details regarding these outcome measures are provided in Sections B and C of the report.

The Waiting List Information section contains more detailed information on how many candidates are on the waiting list at the program, the types of candidates on the waiting list, how long candidates typically have to wait for a transplant at this program, how frequently candidates successfully receive a transplant, and how often candidates on the waiting list die before receiving a transplant.

Table B1 shows the activity on this program's waiting list during two recent 1-year periods and provides comparisons to all programs within this program's OPTN region (see <http://optn.transplant.hrsa.gov/members/regions.asp> for information on OPTN regions) and the nation as a whole. Tables B2 and B3 describe the candidates on the waiting list at this program, with comparisons to candidates waiting in the same donor service area (OPO/DSA) the OPTN region, and the nation as a whole.

Table B4 shows how many candidates were removed from the waiting list because they received a transplant. The program's transplant rate is calculated as the number of candidates who received a transplant divided by the person-years observed at the program (person-years is a combination of how many candidates were on the waiting list along with how long each candidate was followed since some candidates are not on the waiting list for the entire year). The transplant rate and comparisons to what would be expected at this program are presented in Figures B1 and B2. Figure B1 shows the transplant rate compared to what was expected at this program. The expected transplant rate is an estimate of what we would expect at this program if it were performing transplants at rates similar to other programs in the US with similar candidates on their waiting lists. The expected rate is only an estimate, and is made with a certain level of uncertainty. This uncertainty is shown in Figure B2. Figure B2 displays the ratio of the observed to the expected transplant rate. A ratio of 1 indicates that the observed transplant rate was equal to the expected transplant rate, while a ratio less than 1 indicates the observed rate was lower than expected rate and a ratio greater than 1 indicates the observed rate was higher than the expected rate. However, the level of uncertainty must be considered when interpreting these numbers. The 95% interval is also shown on Figure B2. This interval provides a range within which the true ratio of observed to expected transplant rates is likely to be. If this



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confidence interval includes (crosses) 1.0, then we cannot say that this program's observed transplant rate is different from what would be expected. The observed deceased donor transplant rate at this program was 2,029.2 per 100 person-years. Transplant rates are also provided for adult and pediatric patients separately along with comparisons to adult and pediatric rates in the DSA, the OPTN region, and the nation. Please refer to the PSR Technical Methods documentation available at <http://www.srtr.org> for more detail regarding how expected rates are calculated.

The pre-transplant mortality rate (previously called the waiting list mortality rate) for candidates on the waiting list is presented in Table B5 and Figures B4-B6. These data are presented in the same way as the transplant rate data in the previous section. The intent of this table and figures is to describe risk of death once candidates are listed rather than while they are listed, but before they are transplanted. Therefore, time at risk and deaths after removal from the waiting list for reasons other than transplant, transfer to another transplant program, or recovery (no longer needing a transplant), and before any subsequent transplant, are included. As with transplant rates, mortality rates should be interpreted carefully taking into consideration the interval displayed in Figure B5. For a complete description of how observed and expected mortality rates are calculated, please refer to the technical documentation available at <http://www.srtr.org>.

Survival from listing is presented in Table B6 and Figures B7-B9. These data are presented in the same way as the pre-transplant mortality rate data in the previous section. The intent of this table and figures is to describe risk of death once candidates are listed rather than while they are listed, including after a transplant. As with transplant rates, mortality rates should be interpreted carefully taking into consideration the interval displayed in Figure B8. For a complete description of how observed and expected mortality rates are calculated, please refer to the technical documentation available at <http://www.srtr.org>.

Table B7 presents information on what happens to candidates on the waiting list by three different time points after listing: 6 months, 12 months, and 18 months. The table displays percentages of candidates who have died, been removed from the waiting list, been transplanted, or been transferred or lost-to-follow-up. Tables B8 and B9 provide more detail regarding how many candidates have received a deceased donor transplant by certain time points during the first 3 years after being put on the transplant waiting list. Each row of Tables B8 and B9 presents the percent of candidates who received a deceased donor transplant by each time point. Table B10 presents data on the time it took for different percentages of patients to be transplanted for candidates added to the list between 01/01/2015 and 06/30/2020. The time it took for 5% (the 5th percentile) of patients to receive a transplant at this program was 0.8 months. If "Not Observed" is displayed in the table, then too few candidates received transplants before 12/31/2020 to calculate a particular percentile of transplant times.

The Transplant Information section begins with descriptions of transplant recipients in Tables C1 and C2. Data on recipients of deceased donor transplants are presented (Tables C1D and C2D); if applicable, data on recipients of living donor transplants are presented separately (Tables C1L and C2L). Comparisons to the region and the nation as a whole are provided. A description of the deceased donors used at this program is provided in Table C3D, along with characteristics of living donors in Table C3L, if applicable. Finally, information on the transplant procedure for deceased and living donor transplants is presented in Tables C4D and C4L, respectively.



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Starting with Table C5, transplant outcomes are presented along with comparisons to what would be expected at this program and what happened in the nation as a whole. Tables C5-C10 present information on graft survival (survival of the transplanted organ), with data presented separately for adult and pediatric recipients. Patients are followed from the time of transplant until either failure of the transplanted organ or death, whichever comes first. Please refer to the technical methods for more information on these calculations (<http://www.srtr.org>).

While Tables C5-C10 present data on graft survival, Tables C11-C16 present information on patient survival. For these tables, patients are followed from the time of transplant until death, regardless of whether the transplant is functioning or the patient required another transplant to survive.

Tables C17 and C18 summarize the multiorgan transplant outcomes at this program. The summary statistics in these tables are descriptive and are not risk-adjusted for different donor and candidate characteristics.

Additional information regarding the technical methods and the risk adjustment models used to estimate expected event rates is available on the SRTR website at <http://www.srtr.org>. We welcome and encourage feedback on these reports. Please feel free to share feedback with the SRTR at the following e-mail: srtr@srtr.org.



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A. Program Summary

Figure A1. Waiting list and transplant activity

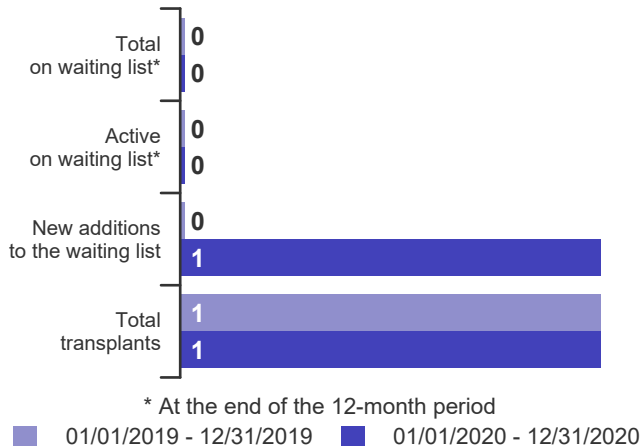
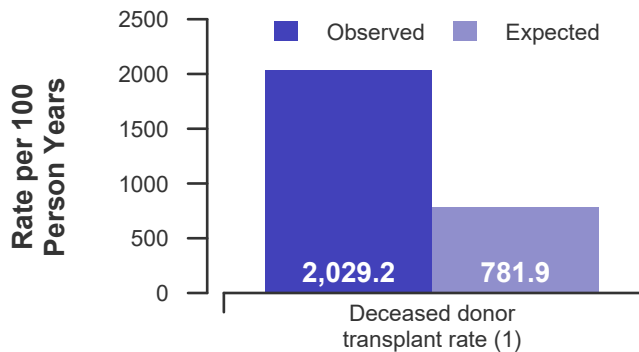


Table A1. Census of transplant recipients

Recipients	01/01/2019-12/31/2019	01/01/2020-12/31/2020
Transplanted at this center	1	1
Followed by this center*	8	7
...transplanted at this program	6	5
...transplanted elsewhere	2	2

* Recipients followed are transplant recipients for whom the center has submitted a post-transplant follow-up form for a transplant that took place before the 12-month interval for each column.

Figure A2. Transplant rates
01/01/2020 - 03/12/2020, 06/13/2020 - 12/31/2020



(1) Not significantly different (p=0.64)

Figure A3. Pre-transplant mortality rates
01/01/2020 - 03/12/2020

This center did have any registered waiting list candidates relevant to this figure during 01/01/2020-03/12/2020

Figure A4. First-year adult graft and patient survival: 01/01/2018 - 03/12/2020

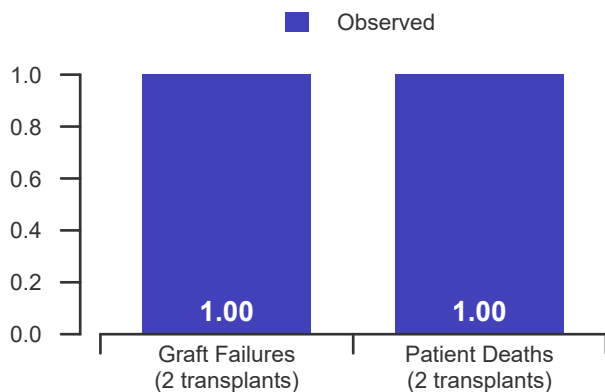


Figure A5. First-year pediatric graft and patient survival: 01/01/2018 - 03/12/2020

This center did not perform any transplants relevant to this figure during 01/01/2018-03/12/2020



B. Waiting List Information

Table B1. Waiting list activity summary: 01/01/2019 - 12/31/2020

Waiting List Registrations	Counts for this center		Activity for 01/01/2020 to 12/31/2020 as percent of registrants on waiting list on 01/01/2020		
	01/01/2019-12/31/2019	01/01/2020-12/31/2020	This Center (%)	OPTN Region (%)	U.S. (%)
On waiting list at start	1	0	--	100.0	100.0
Additions					
New listings at this center	0	1	--	500.0	173.9
Removals					
Transferred to another center	0	0	--	0.0	2.2
Received living donor transplant*	0	0	--	0.0	0.0
Received deceased donor transplant*	1	1	--	300.0	126.1
Died	0	0	--	0.0	17.4
Transplanted at another center	0	0	--	0.0	0.0
Deteriorated	0	0	--	0.0	13.0
Recovered	0	0	--	0.0	17.4
Other reasons	0	0	--	0.0	8.7
On waiting list at end of period	0	0	--	300.0	89.1

* These patients were removed from waiting list with removal code indicating transplant; this may not equal the number of transplants performed at this center during the specified period.



B. Waiting List Information

Table B2. Demographic characteristics of waiting list candidates
Candidates registered on the waiting list between 01/01/2020 and 12/31/2020

Demographic Characteristic	New Waiting List Registrations 01/01/2020 to 12/31/2020 (%)			All Waiting List Registrations on 12/31/2020 (%)		
	This Center (N=1)	OPTN Region (N=5)	U.S. (N=80)	This Center (N=0)	OPTN Region (N=3)	U.S. (N=41)
All (%)	100.0	100.0	100.0	--	100.0	100.0
Ethnicity/Race (%)*						
White	0.0	60.0	65.0	--	66.7	56.1
African-American	100.0	40.0	17.5	--	33.3	19.5
Hispanic/Latino	0.0	0.0	11.2	--	0.0	14.6
Asian	0.0	0.0	3.8	--	0.0	4.9
Other	0.0	0.0	2.5	--	0.0	4.9
Unknown	0.0	0.0	0.0	--	0.0	0.0
Age (%)						
<2 years	0.0	0.0	3.8	--	0.0	2.4
2-11 years	0.0	0.0	5.0	--	0.0	7.3
12-17 years	0.0	0.0	6.2	--	0.0	0.0
18-34 years	0.0	0.0	22.5	--	0.0	26.8
35-49 years	100.0	60.0	16.2	--	33.3	29.3
50-64 years	0.0	40.0	43.8	--	66.7	31.7
65-69 years	0.0	0.0	2.5	--	0.0	2.4
70+ years	0.0	0.0	0.0	--	0.0	0.0
Gender (%)						
Male	0.0	60.0	53.8	--	66.7	51.2
Female	100.0	40.0	46.2	--	33.3	48.8

* Race and ethnicity are reported together as a single data element, reflecting their data collection (either race or ethnicity is required, but not both). Patients formerly coded as white and Hispanic are coded as Hispanic. Race and ethnicity sum to 100%.



B. Waiting List Information

Table B3. Medical characteristics of waiting list candidates

Candidates registered on the waiting list between 01/01/2020 and 12/31/2020

Medical Characteristic	New Waiting List Registrations 01/01/2020 to 12/31/2020 (%)			All Waiting List Registrations on 12/31/2020 (%)		
	This Center (N=1)	OPTN Region (N=5)	U.S. (N=80)	This Center (N=0)	OPTN Region (N=3)	U.S. (N=41)
All (%)	100.0	100.0	100.0	--	100.0	100.0
Blood Type (%)						
O	0.0	60.0	50.0	--	66.7	68.3
A	100.0	20.0	32.5	--	0.0	19.5
B	0.0	20.0	17.5	--	33.3	12.2
AB	0.0	0.0	0.0	--	0.0	0.0
Unknown	0.0	0.0	0.0	--	0.0	0.0
Previous Transplant (%)						
Yes	0.0	0.0	2.5	--	0.0	2.4
No	100.0	100.0	97.5	--	100.0	97.6
Unknown	0.0	0.0	0.0	--	0.0	0.0
Primary Disease (%)						
Congenital Disease	0.0	20.0	25.0	--	33.3	31.7
Retransplant/Graft Failure	0.0	0.0	1.2	--	0.0	0.0
Idiopathic Pulmonary Arterial Hypertension	0.0	0.0	0.0	--	0.0	0.0
Cystic Fibrosis	0.0	0.0	0.0	--	0.0	0.0
Idiopathic Pulmonary Fibrosis	0.0	0.0	0.0	--	0.0	0.0
Emphysema/COPD	0.0	0.0	0.0	--	0.0	0.0
Other	100.0	80.0	73.8	--	66.7	68.3
Missing	0.0	0.0	0.0	--	0.0	0.0



B. Waiting List Information

Table B4D. Deceased donor transplant rates: 01/01/2020 - 03/12/2020, 06/13/2020 - 12/31/2020

Waiting List Registrations	This Center	OPO/DSA	Region	U.S.
All Candidates				
Count on waiting list at start*	0	2	2	77
Person Years**	0.0	0.8	2.0	34.4
Removals for Transplant	1	1	2	39
Adult (18+) Candidates				
Count on waiting list at start*	0	2	2	70
Person Years**	0.0	0.8	2.0	30.7
Removals for transplant	1	1	2	36
Pediatric (<18) Candidates				
Count on waiting list at start*	--	--	--	--
Person Years**	--	--	--	--
Removals for transplant	--	--	--	--

* Counts in this table may be lower than similar counts in other waiting list tables, such as Table B1. A small percentage (~1%) of patients are found to have died or been transplanted before being removed from the waiting list, so these patients are excluded if the event occurs prior to the start of the study period. Inactive time on the waiting list is included in the calculations for this table.

** Person years are calculated as days (converted to fractional years). The number of days from January 1 or from the date of first wait listing until death, transplant, removal from the waiting list or December 31.

Figure B1D. Observed and expected deceased donor transplant rates: 01/01/2020 - 03/12/2020, 06/13/2020 - 12/31/2020

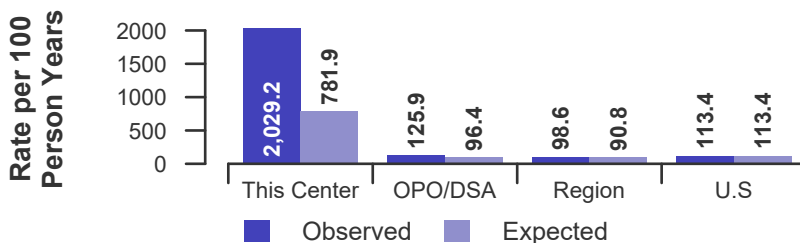


Figure B2D. Ratio of observed to expected deceased donor transplant rates

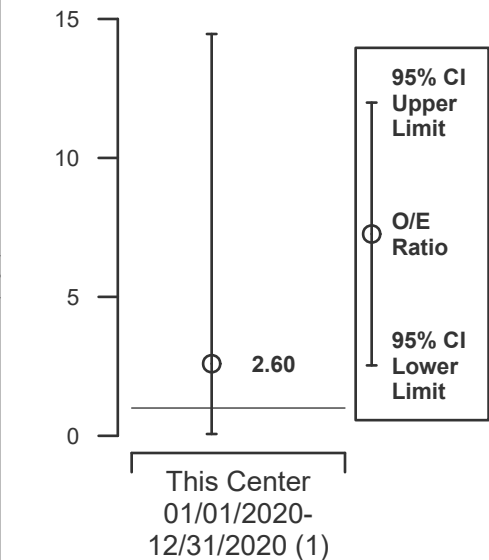
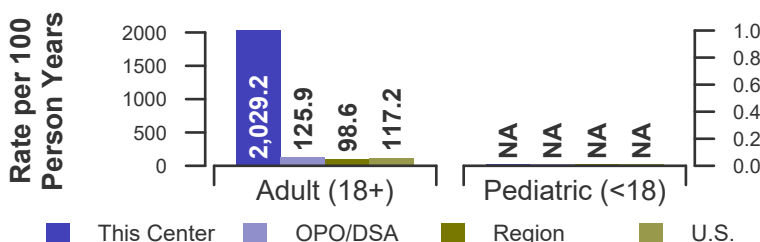


Figure B3D. Observed adult (18+) and pediatric (<18) deceased donor transplant rates: 01/01/2020 - 03/12/2020, 06/13/2020 - 12/31/2020



(1) Not significantly different (p=0.64, 95% CI=[0.07, 14.46])



B. Waiting List Information

Table B5. Pre-transplant mortality rates: 01/01/2020 - 03/12/2020

Waiting List Registrations	This Center	OPO/DSA	Region	U.S.
All Candidates				
Count on waiting list at start*	0	2	2	77
Person Years**	--	--	--	--
Number of deaths	--	--	--	--
Adult (18+) Candidates				
Count on waiting list at start*	0	2	2	70
Person Years**	--	--	--	--
Number of deaths	--	--	--	--
Pediatric (<18) Candidates				
Count on waiting list at start*	--	--	--	--
Person Years**	--	--	--	--
Number of deaths	--	--	--	--

* Counts in this table may be lower than similar counts in other waiting list tables, such as Table B1. A small percentage (~1%) of patients are found to have died or been transplanted before being removed from the waiting list, so these patients are excluded if the event occurs prior to the start of the study period. Inactive time on the waiting list is included in the calculations for this table.

** Person years are calculated as days (converted to fractional years). The number of days from January 1 or from the date of first wait listing until death, transplant, 60 days after recovery, transfer or March 12, 2020.

Figure B4. Observed and expected pre-transplant mortality rates: 01/01/2020 - 03/12/2020

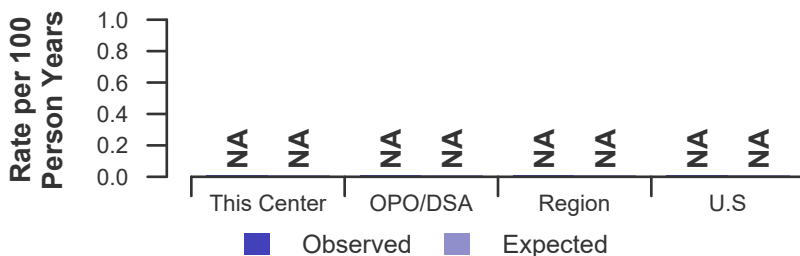


Figure B5. Pre-transplant mortality rate ratio estimate

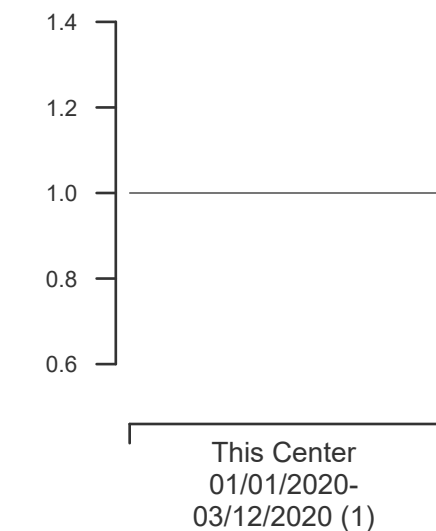
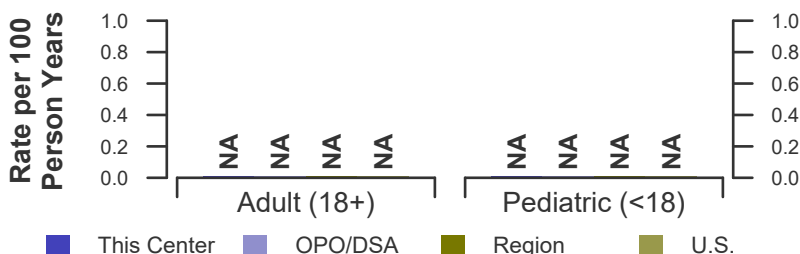


Figure B6. Observed adult (18+) and pediatric (<18) pre-transplant mortality rates: 01/01/2020 - 03/12/2020



(1) P-value was not calculated



B. Waiting List Information

Table B6. Rates of patient mortality after listing: 01/01/2019 - 03/12/2020

Not calculated for Heart-Lung programs

Figure B7. Observed and expected rates of patient mortality after listing: 01/01/2019 - 03/12/2020

Not calculated for Heart-Lung programs

Figure B8. HR estimate of patient mortality after listing

Figure B9. Observed adult (18+) and pediatric (<18) rates of patient mortality after listing: 01/01/2019 - 03/12/2020

Not calculated for Heart-Lung programs

Not calculated for Heart-Lung program



B. Waiting List Information

Table B7. Waiting list candidate status after listing
Candidates registered on waiting list between 07/01/2018 and 06/30/2019

Waiting list status (survival status)	This Center (N=2)			U.S. (N=60)		
	Months Since Listing			Months Since Listing		
	6	12	18	6	12	18
Alive on waiting list (%)	0.0	0.0	0.0	33.3	18.3	8.3
Died on the waiting list without transplant (%)	0.0	0.0	0.0	6.7	6.7	8.3
Removed without transplant (%):						
Condition worsened (status unknown)	0.0	0.0	0.0	11.7	13.3	13.3
Condition improved (status unknown)	0.0	0.0	0.0	0.0	1.7	8.3
Refused transplant (status unknown)	0.0	0.0	0.0	1.7	1.7	1.7
Other	0.0	0.0	0.0	3.3	5.0	5.0
Transplant (living or deceased donor) (%):						
Functioning (alive)	50.0	50.0	50.0	35.0	40.0	23.3
Failed-Retransplanted (alive)	0.0	0.0	0.0	0.0	0.0	0.0
Failed-alive not retransplanted	0.0	0.0	0.0	0.0	0.0	0.0
Died	50.0	50.0	50.0	8.3	11.7	13.3
Status Yet Unknown*	0.0	0.0	0.0	0.0	1.7	18.3
Lost or Transferred (status unknown) (%)	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL (%)	100.0	100.0	100.0	100.0	100.0	100.0
Total % known died on waiting list or after transplant	50.0	50.0	50.0	15.0	18.3	21.7
Total % known died or removed as unstable	50.0	50.0	50.0	26.7	31.7	35.0
Total % removed for transplant	100.0	100.0	100.0	43.3	53.3	55.0
Total % with known functioning transplant (alive)	50.0	50.0	50.0	35.0	40.0	23.3

* Follow-up form covering specified time period not yet completed, and possibly has not become due.



B. Waiting List Information

Table B8. Percent of candidates with deceased donor transplants: demographic characteristics
Candidates registered on the waiting list between 01/01/2015 and 12/31/2017

Characteristic	Percent transplanted at time periods since listing									
	This Center					United States				
	N	30 day	1 year	2 years	3 years	N	30 day	1 year	2 years	3 years
All	4	25.0	75.0	75.0	75.0	153	14.4	41.2	47.1	48.4
Ethnicity/Race*										
White	4	25.0	75.0	75.0	75.0	95	14.7	35.8	43.2	43.2
African-American	0	--	--	--	--	27	0.0	29.6	33.3	37.0
Hispanic/Latino	0	--	--	--	--	20	30.0	75.0	80.0	80.0
Asian	0	--	--	--	--	10	20.0	60.0	60.0	70.0
Other	0	--	--	--	--	1	0.0	0.0	0.0	0.0
Unknown	0	--	--	--	--	0	--	--	--	--
Age										
<2 years	0	--	--	--	--	1	0.0	0.0	0.0	0.0
2-11 years	0	--	--	--	--	1	0.0	0.0	0.0	0.0
12-17 years	0	--	--	--	--	8	25.0	62.5	62.5	62.5
18-34 years	2	0.0	50.0	50.0	50.0	44	13.6	38.6	47.7	52.3
35-49 years	2	50.0	100.0	100.0	100.0	39	12.8	38.5	38.5	38.5
50-64 years	0	--	--	--	--	55	12.7	43.6	52.7	52.7
65-69 years	0	--	--	--	--	5	40.0	40.0	40.0	40.0
70+ years	0	--	--	--	--	0	--	--	--	--
Gender										
Male	3	33.3	66.7	66.7	66.7	81	14.8	46.9	49.4	50.6
Female	1	0.0	100.0	100.0	100.0	72	13.9	34.7	44.4	45.8

* Race and ethnicity are reported together as a single data element, reflecting their data collection (either race or ethnicity is required, but not both). Patients formerly coded as white and Hispanic are coded as Hispanic. Race and ethnicity sum to 100%.



B. Waiting List Information

Table B9. Percent of candidates with deceased donor transplants: medical characteristics
Candidates registered on the waiting list between 01/01/2015 and 12/31/2017

Characteristic	Percent transplanted at time periods since listing									
	This Center					United States				
	N	30 day	1 year	2 years	3 years	N	30 day	1 year	2 years	3 years
All	4	25.0	75.0	75.0	75.0	153	14.4	41.2	47.1	48.4
Blood Type										
O	2	0.0	100.0	100.0	100.0	80	8.8	31.2	37.5	40.0
A	2	50.0	50.0	50.0	50.0	42	26.2	57.1	59.5	59.5
B	0	--	--	--	--	26	11.5	50.0	53.8	53.8
AB	0	--	--	--	--	5	20.0	20.0	60.0	60.0
Previous Transplant										
Yes	0	--	--	--	--	5	0.0	0.0	0.0	0.0
No	4	25.0	75.0	75.0	75.0	148	14.9	42.6	48.6	50.0
Primary Disease										
Congenital Disease	0	--	--	--	--	0	--	--	--	--
Retransplant/Graft Failure	0	--	--	--	--	2	0.0	0.0	0.0	0.0
Idiopathic Pulmonary Arterial Hypertension	0	--	--	--	--	0	--	--	--	--
Cystic Fibrosis	0	--	--	--	--	0	--	--	--	--
Idiopathic Pulmonary Fibrosis	0	--	--	--	--	0	--	--	--	--
Alpha-1-Antitrypsin Deficiency	0	--	--	--	--	0	--	--	--	--
Emphysema/COPD	0	--	--	--	--	0	--	--	--	--
Other	4	25.0	75.0	75.0	75.0	151	14.6	41.7	47.7	49.0
Missing	0	--	--	--	--	0	--	--	--	--



B. Waiting List Information

Table B10. Time to transplant for waiting list candidates*

Candidates registered on the waiting list between 01/01/2015 and 06/30/2020

Percentile	Center	Months to Transplant**		U.S.
		OPO/DSA	Region	
5th	0.8	0.8	0.3	0.2
10th	0.8	0.8	0.8	0.5
25th	1.3	1.3	1.3	2.2
50th (median time to transplant)	2.8	7.3	7.3	12.9
75th	7.3	Not Observed	Not Observed	Not Observed

* If cells contain "Not Observed" fewer than that percentile of patients had received a transplant. For example, the 50th percentile of time to transplant is the time when 50% of candidates have received transplants. If waiting times are long, then the 50th percentile may not be observed during the follow-up period for this table. Also, if more than 50% of candidates are removed from the list due to death or other reasons before receiving transplants, then the 50th percentile of time to transplant will not be observed.

** Censored on 12/31/2020. Calculated as the months after listing, during which the corresponding percent of all patients initially listed had received a transplant.



C. Transplant Information

Table C1D. Deceased donor transplant recipient demographic characteristics
Patients transplanted between 01/01/2020 and 12/31/2020

Characteristic	Percentage in each category		
	Center (N=1)	Region (N=3)	U.S. (N=58)
Ethnicity/Race (%)*			
White	0.0	33.3	58.6
African-American	100.0	66.7	22.4
Hispanic/Latino	0.0	0.0	13.8
Asian	0.0	0.0	5.2
Other	0.0	0.0	0.0
Unknown	0.0	0.0	0.0
Age (%)			
<2 years	0.0	0.0	0.0
2-11 years	0.0	0.0	0.0
12-17	0.0	0.0	6.9
18-34	0.0	0.0	13.8
35-49 years	100.0	66.7	29.3
50-64 years	0.0	33.3	48.3
65-69 years	0.0	0.0	1.7
70+ years	0.0	0.0	0.0
Gender (%)			
Male	0.0	66.7	48.3
Female	100.0	33.3	51.7

* Race and ethnicity are reported together as a single data element, reflecting their data collection (either race or ethnicity is required, but not both). Patients formerly coded as white and Hispanic are coded as Hispanic. Race and ethnicity sum to 100%.



C. Transplant Information

Table C2D. Deceased donor transplant recipient medical characteristics
Patients transplanted between 01/01/2020 and 12/31/2020

Characteristic	Percentage in each category		
	Center (N=1)	Region (N=3)	U.S. (N=58)
Blood Type (%)			
O	0.0	33.3	36.2
A	100.0	33.3	44.8
B	0.0	33.3	19.0
AB	0.0	0.0	0.0
Previous Transplant (%)			
Yes	0.0	0.0	1.7
No	100.0	100.0	98.3
Body Mass Index (%)			
0-20	0.0	0.0	25.9
21-25	100.0	66.7	46.6
26-30	0.0	0.0	17.2
31-35	0.0	33.3	8.6
36-40	0.0	0.0	1.7
41+	0.0	0.0	0.0
Unknown	0.0	0.0	0.0
Primary Disease (%)			
Congenital Disease	0.0	0.0	20.7
Retransplant/Graft Failure	0.0	0.0	0.0
Idiopathic Pulmonary Arterial Hypertension	0.0	0.0	37.9
Cystic Fibrosis	0.0	0.0	0.0
Idiopathic Pulmonary Fibrosis	0.0	33.3	17.2
Emphysema/COPD	0.0	0.0	1.7
Other	100.0	66.7	22.4
Missing	0.0	0.0	0.0
Recipient Medical Condition at Transplant (%)			
Not Hospitalized	0.0	0.0	39.7
Hospitalized	0.0	0.0	13.8
ICU	100.0	100.0	46.6
Unknown	0.0	0.0	0.0



C. Transplant Information

Table C3D. Deceased donor characteristics
Transplants performed between 01/01/2020 and 12/31/2020

Donor Characteristic	Percentage in each category		
	Center (N=1)	Region (N=3)	U.S. (N=58)
Cause of Death (%)			
Deceased: Stroke	0.0	0.0	13.8
Deceased: MVA	0.0	33.3	13.8
Deceased: Other	100.0	66.7	72.4
Ethnicity/Race (%)*			
White	100.0	66.7	55.2
African-American	0.0	33.3	13.8
Hispanic/Latino	0.0	0.0	24.1
Asian	0.0	0.0	3.4
Other	0.0	0.0	3.4
Not Reported	0.0	0.0	0.0
Age (%)			
<2 years	0.0	0.0	0.0
2-11 years	0.0	0.0	3.4
12-17	0.0	0.0	10.3
18-34	100.0	100.0	48.3
35-49 years	0.0	0.0	32.8
50-64 years	0.0	0.0	5.2
65-69 years	0.0	0.0	0.0
70+ years	0.0	0.0	0.0
Gender (%)			
Male	0.0	0.0	46.6
Female	100.0	100.0	53.4
Blood Type (%)			
O	100.0	66.7	51.7
A	0.0	0.0	36.2
B	0.0	33.3	12.1
AB	0.0	0.0	0.0
Unknown	0.0	0.0	0.0

* Race and ethnicity are reported together as a single data element, reflecting their data collection (either race or ethnicity is required, but not both). Patients formerly coded as white and Hispanic are coded as Hispanic. Race and ethnicity sum to 100%.



C. Transplant Information

Table C4D. Deceased donor transplant characteristics
Transplants performed between 01/01/2020 and 12/31/2020

Transplant Characteristic	Percentage in each category		
	Center (N=1)	Region (N=3)	U.S. (N=58)
Total Ischemic Time (Minutes): Local (%)			
Deceased: 0-90 min	--	--	5.6
Deceased: 91-180 min	--	--	44.4
Deceased: 181-270 min	--	--	38.9
Deceased: 271-360 min	--	--	11.1
Deceased: 361+ min	--	--	0.0
Not Reported	--	--	0.0
Total Ischemic Time (Minutes): Shared (%)			
Deceased: 0-90 min	0.0	0.0	0.0
Deceased: 91-180 min	0.0	33.3	7.5
Deceased: 181-270 min	0.0	33.3	60.0
Deceased: 271-360 min	100.0	33.3	32.5
Deceased: 361+ min	0.0	0.0	0.0
Not Reported	0.0	0.0	0.0
Donor Location (%)			
Local Donation Service Area (DSA)	0.0	0.0	31.0
Another Donation Service Area (DSA)	100.0	100.0	69.0
Median Time in Hospital After Transplant*	41.0 Days	41.0 Days	30.5 Days

* Heart-lung transplants only. Other multi organ transplants are excluded from this statistic.



C. Transplant Information

**Table C5D. Adult (18+) 1-month survival with a functioning deceased donor graft
Simultaneous heart-lung transplants performed between 01/01/2018 and 03/12/2020
Deaths and retransplants are considered graft failures**

	NCDU	U.S.
Number of transplants evaluated	2	70
Estimated probability of surviving with a functioning graft at 1 month (unadjusted for patient and donor characteristics)	50.00%	91.38%
Expected probability of surviving with a functioning graft at 1 month (adjusted for patient and donor characteristics)*	--%	--
Number of observed graft failures (including deaths) during the first month after transplant	1	6
Number of expected graft failures (including deaths) during the first month after transplant*	--	--
Estimated hazard ratio*	--	--
95% credible interval for the hazard ratio*	[-, -]	--

* The expected number of graft failures, the hazard ratio, and the credible interval are not calculated for adult (18+) recipients.

Figure C1D. Adult (18+) 1-month deceased donor graft failure HR estimate

Expected graft failures were not calculated

Figure C2D. Adult (18+) 1-month deceased donor graft failure HR program comparison

Expected graft failures were not calculated



C. Transplant Information

**Table C6D. Adult (18+) 1-year survival with a functioning deceased donor graft
Simultaneous heart-lung transplants performed between 01/01/2018 and 03/12/2020
Deaths and retransplants are considered graft failures**

	NCDU	U.S.
Number of transplants evaluated	2	70
Estimated probability of surviving with a functioning graft at 1 year (unadjusted for patient and donor characteristics)	50.00%	85.15%
Expected probability of surviving with a functioning graft at 1 year (adjusted for patient and donor characteristics)*	--%	--
Number of observed graft failures (including deaths) during the first year after transplant	1	9
Number of expected graft failures (including deaths) during the first year after transplant*	--	--
Estimated hazard ratio*	--	--
95% credible interval for the hazard ratio*	[-, -]	--

* The expected number of graft failures, the hazard ratio, and the credible interval are not calculated for adult (18+) recipients.

Figure C3D. Adult (18+) 1-year deceased donor graft failure HR estimate

Expected graft failures were not calculated

Figure C4D. Adult (18+) 1-year deceased donor graft failure HR program comparison

Expected graft failures were not calculated



C. Transplant Information

**Table C7D. Adult (18+) 3-year survival with a functioning deceased donor graft
Simultaneous heart-lung transplants performed between 07/01/2015 and 12/31/2017
Deaths and retransplants are considered graft failures**

	NCDU	U.S.
Number of transplants evaluated	3	49
Estimated probability of surviving with a functioning graft at 3 years (unadjusted for patient and donor characteristics)	0.00%	69.39%
Expected probability of surviving with a functioning graft at 3 years (adjusted for patient and donor characteristics)*	--%	--
Number of observed graft failures (including deaths) during the first 3 years after transplant	3	14
Number of expected graft failures (including deaths) during the first 3 years after transplant*	--	--
Estimated hazard ratio*	--	--
95% credible interval for the hazard ratio*	[-, -]	--

* The expected number of graft failures, the hazard ratio, and the credible interval are not calculated for adult (18+) recipients.

Figure C5D. Adult (18+) 3-year deceased donor graft failure HR estimate

Expected graft failures were not calculated

Figure C6D. Adult (18+) 3-year deceased donor graft failure HR program comparison

Expected graft failures were not calculated



C. Transplant Information

**Table C8D. Pediatric (<18) 1-month survival with a functioning deceased donor graft
Simultaneous heart-lung transplants performed between 01/01/2018 and 03/12/2020
Deaths and retransplants are considered graft failures**

Pediatric data is not reported

**Figure C7D. Pediatric (<18)
1-month deceased donor graft
failure HR estimate**

Pediatric data is not reported

**Figure C8D. Pediatric (<18) 1-month deceased donor graft
failure HR program comparison**

Pediatric data is not reported



C. Transplant Information

**Table C9D. Pediatric (<18) 1-year survival with a functioning deceased donor graft
Simultaneous heart-lung transplants performed between 01/01/2018 and 03/12/2020
Deaths and retransplants are considered graft failures**

Pediatric data is not reported

**Figure C9D. Pediatric (<18)
1-year deceased donor graft
failure HR estimate**

Pediatric data is not reported

**Figure C10D. Pediatric (<18) 1-year deceased donor graft
failure HR program comparison**

Pediatric data is not reported



C. Transplant Information

**Table C10D. Pediatric (<18) 3-year survival with a functioning deceased donor graft
Simultaneous heart-lung transplants performed between 07/01/2015 and 12/31/2017
Deaths and retransplants are considered graft failures**

Pediatric data is not reported

**Figure C11D. Pediatric (<18)
3-year deceased donor graft
failure HR estimate**

Pediatric data is not reported

**Figure C12D. Pediatric (<18) 3-year deceased donor graft
failure HR program comparison**

Pediatric data is not reported



C. Transplant Information

**Table C11D. Adult (18+) 1-month patient survival (deceased donor graft recipients)
Simultaneous heart-lung transplants performed between 01/01/2018 and 03/12/2020
Retransplants excluded**

	NCDU	U.S.
Number of transplants evaluated	2	69
Estimated probability of surviving at 1 month (unadjusted for patient and donor characteristics)	50.00%	91.28%
Expected probability of surviving at 1 month (adjusted for patient and donor characteristics)*	--%	--
Number of observed deaths during the first month after transplant	1	6
Number of expected deaths during the first month after transplant*	--	--
Estimated hazard ratio*	--	--
95% credible interval for the hazard ratio*	[-, -]	--

* The expected number of patient deaths, the hazard ratio, and the credible interval are not calculated for adult (18+) recipients.

Figure C13D. Adult (18+) 1-month patient death HR estimate (deceased donor grafts)

Expected patient deaths were not calculated

Figure C14D. Adult (18+) 1-month patient death HR program comparison (deceased donor grafts)

Expected patient deaths were not calculated



C. Transplant Information

**Table C12D. Adult (18+) 1-year patient survival (deceased donor graft recipients)
Simultaneous heart-lung transplants performed between 01/01/2018 and 03/12/2020
Retransplants excluded**

	NCDU	U.S.
Number of transplants evaluated	2	69
Estimated probability of surviving at 1 year (unadjusted for patient and donor characteristics)	50.00%	85.29%
Expected probability of surviving at 1 year (adjusted for patient and donor characteristics)*	--%	--
Number of observed deaths during the first year after transplant	1	9
Number of expected deaths during the first year after transplant*	--	--
Estimated hazard ratio*	--	--
95% credible interval for the hazard ratio*	[-, -]	--

* The expected number of patient deaths, the hazard ratio, and the credible interval are not calculated for adult (18+) recipients.

Figure C15D. Adult (18+) 1-year patient death HR estimate (deceased donor grafts)

Expected patient deaths were not calculated

Figure C16D. Adult (18+) 1-year patient death HR program comparison (deceased donor grafts)

Expected patient deaths were not calculated



C. Transplant Information

**Table C13D. Adult (18+) 3-year patient survival (deceased donor graft recipients)
Simultaneous heart-lung transplants performed between 07/01/2015 and 12/31/2017
Retransplants excluded**

	NCDU	U.S.
Number of transplants evaluated	3	49
Estimated probability of surviving at 3 years (unadjusted for patient and donor characteristics)	0.00%	69.80%
Expected probability of surviving at 3 years (adjusted for patient and donor characteristics)*	--%	--
Number of observed deaths during the first 3 years after transplant	3	14
Number of expected deaths during the first 3 years after transplant*	--	--
Estimated hazard ratio*	--	--
95% credible interval for the hazard ratio*	[-, -]	--

* The expected number of patient deaths, the hazard ratio, and the credible interval are not calculated for adult (18+) recipients.

**Figure C17D. Adult (18+) 3-year
patient death HR estimate
(deceased donor grafts)**

Expected patient deaths
were not calculated

**Figure C18D. Adult (18+) 3-year patient death HR program
comparison (deceased donor grafts)**

Expected patient deaths
were not calculated



C. Transplant Information

**Table C14D. Pediatric (<18) 1-month patient survival (deceased donor graft recipients)
Simultaneous heart-lung transplants performed between 01/01/2018 and 03/12/2020
Retransplants excluded**

Pediatric data is not reported

**Figure C19D. Pediatric (<18)
1-month patient death HR
estimate (deceased donor grafts)**

Pediatric data is not reported

**Figure C20D. Pediatric (<18) 1-month patient death HR
program comparison (deceased donor grafts)**

Pediatric data is not reported



C. Transplant Information

**Table C15D. Pediatric (<18) 1-year patient survival (deceased donor graft recipients)
Simultaneous heart-lung transplants performed between 01/01/2018 and 03/12/2020
Retransplants excluded**

Pediatric data is not reported

**Figure C21D. Pediatric (<18)
1-year patient death HR estimate
(deceased donor grafts)**

Pediatric data is not reported

**Figure C22D. Pediatric (<18) 1-year patient death HR program
comparison (deceased donor grafts)**

Pediatric data is not reported



C. Transplant Information

**Table C16D. Pediatric (<18) 3-year patient survival (deceased donor graft recipients)
Simultaneous heart-lung transplants performed between 07/01/2015 and 12/31/2017
Retransplants excluded**

Pediatric data is not reported

**Figure C23D. Pediatric (<18)
3-year patient death HR estimate
(deceased donor grafts)**

Pediatric data is not reported

**Figure C24D. Pediatric (<18) 3-year patient death HR program
comparison (deceased donor grafts)**

Pediatric data is not reported