# 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 and July 2021. Theses reports 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.

Modifications for the January 2022 reporting cycle were considered at the Analytic Methods Subcommittee of the SRTR Review Committee (SRC) at its meeting on March 24, 2021, and the full SRC meeting on April 27, 2021. Both the Analytic Methods Subcommittee and the full SRC recommended an ongoing carve out of the first quarter of the pandemic (March 13, 2020 through June 12, 2020) from adjusted performance metrics, as detailed below. These recommendations were reviewed by HRSA's Division of Transplantation, which oversees SRTR. HRSA approved these recommendations, which SRTR will implement for the January 2022 reporting cycle. These changes will remain in force beyond the January 2022 reporting cycle, unless otherwise amended:

Posttransplant Outcomes (including 1-month, 1-year, and 3-year graft and patient survival): Evaluation cohorts will exclude transplants performed between March 13, 2020 and June 12, 2020, inclusive of March 13 and June 12. Patients given transplants before March 13, 2020 will have follow-up censored on March 12, 2020. Patients given transplants after June 12, 2020 will resume normal follow-up. Follow-up will not resume for patients given transplants before March 13, 2020 who are alive with function on June 12, 2020; however, this may be reconsidered as SRTR continues to explore moving to a period-prevalent methodology:

1-month & 1-year Patient and Graft Survival Evaluations: Transplants 7/1/2018-3/12/2020, follow-up through 3/12/2020. Transplants 6/13/2020-12/31/2020, follow-up through 6/30/2021.

3-year Patient and Graft Survival Evaluations: Transplants 1/1/2016-6/30/2018; follow-up through 3/12/2020.

Pre-Transplant Mortality Rate (formerly called Waitlist Mortality Rate): Evaluation cohorts will exclude March 13, 2020 through June 12, 2020, inclusive of March 13 and June 12:

Days after listing (and before transplant) between 7/1/2019-3/12/2020 and 6/13/2020-6/30/2021.

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Transplant Rate: Evaluation cohorts will exclude March 13, 2020 through June 12, 2020, inclusive of March 13 and June 12:

Candidates on the waitlist 7/1/2019-3/12/2020 and 6/13/2020-6/30/2021.

Overall Rate of Mortality After Listing: Evaluation cohorts will exclude March 13, 2020 through June 12, 2020, inclusive of March 13 and June 12:

Evaluation period: 7/1/2019-3/12/2020 and 6/13/2020-6/30/2021.

Offer Acceptance Rate: These evaluations are based on normal reporting cohorts.

Offers received 7/1/2020-6/30/2021.

These decisions will apply to the evaluations released in the SRTR's semi-annual program-specific reports scheduled for release on January 6, 2022. These changes have been communicated to the leadership of the Organ Procurement and Transplantation Network's (OPTN) 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 July 2022.

As with the July 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.

# User Guide

This report contains a wide range of useful information about the heart transplant program at Children's National Medical Center. 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 328.4 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 07/01/2015 and 12/31/2020. The time it took for 5% (the 5th percentile) of patients to receive a transplant at this program was 0.3 months. If "Not Observed" is displayed in the table, then too few candidates received transplants before 06/30/2021 to calculate a particular percentile of transplant times.

Table B11 contains a summary of the offer acceptance practices of the program. The offer acceptance ratio indicates whether the program is more or less likely to accept offers than the average program. If the offer acceptance ratio is greater than 1.0, then the program tends to accept more offers than average; if the offer acceptance ratio is less than 1.0, then the program tends to accept fewer offers than average. Figure B10 shows the distribution of program offer acceptance rates as well as the offer acceptance rate for this program. Figures B11 - B15 similarly show offer acceptance rates for subsets of offers.

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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.

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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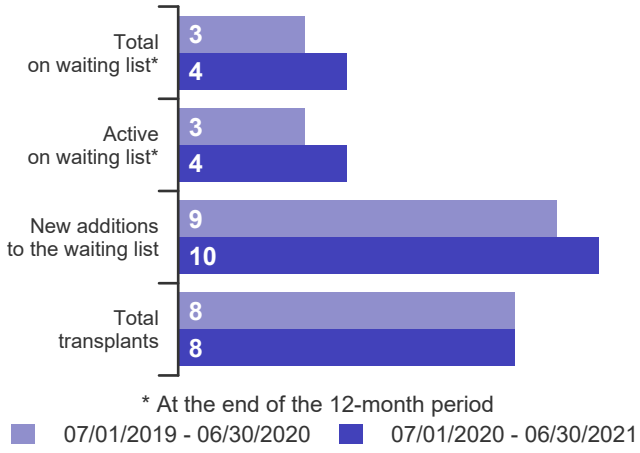
# A. Program Summary

### Figure A1. Waiting list and transplant activity

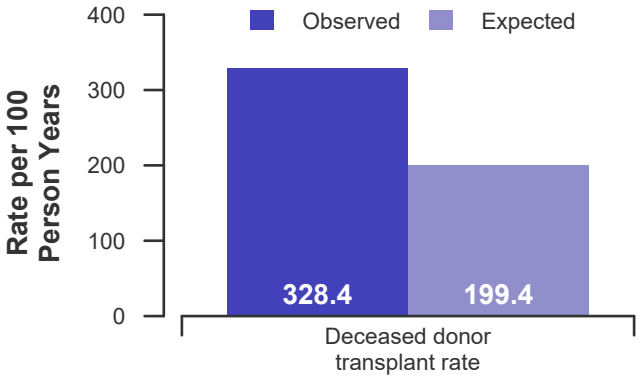



### Table A1. Census of transplant recipients

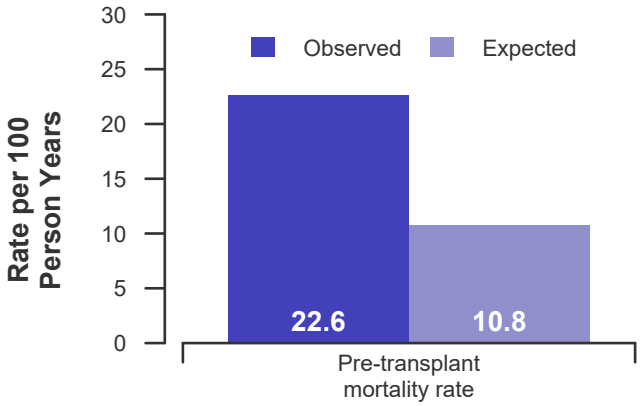
| Recipients | 07/01/2019-06/30/2020 | 07/01/2020-06/30/2021 |
|---|---|---|
| Transplanted at this center | 8 | 8 |
| Followed by this center* | 41 | 44 |
| ...transplanted at this program | 29 | 33 |
| ...transplanted elsewhere | 12 | 11 |

* 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
### 07/01/2019 - 03/12/2020, 06/13/2020 - 06/30/2021



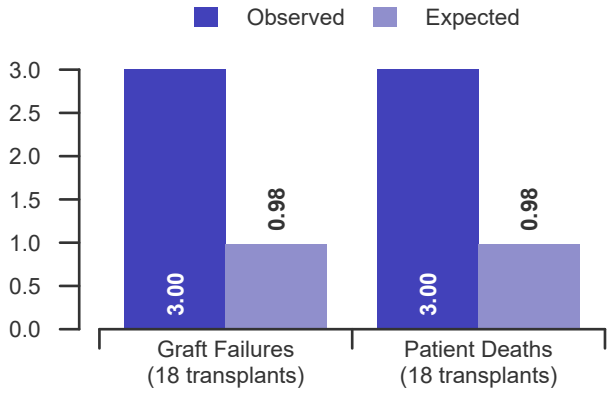

### Figure A3. Pre-transplant mortality rates
### 07/01/2019 - 03/12/2020, 06/13/2020 - 06/30/2021




### Figure A4. First-year adult graft and patient survival:
### 07/01/2018 - 03/12/2020, 06/13/2020 - 12/31/2020

This center did not perform any transplants relevant to this figure during 07/01/2018-12/31/2020

### Figure A5. First-year pediatric graft & patient survival:
### 07/01/2018 - 03/12/2020, 06/13/2020 - 12/31/2020



# B. Waiting List Information

**Table B1. Waiting list activity summary: 07/01/2019 - 06/30/2021**

| Waiting List Registrations | Counts for this center | | Activity for 07/01/2020 to 06/30/2021 as percent of registrants on waiting list on 07/01/2020 | | |
|---|---|---|---|---|---|
| | 07/01/2019-06/30/2020 | 07/01/2020-06/30/2021 | This Center (%) | OPTN Region (%) | U.S. (%) |
| **On waiting list at start** | 4 | 3 | 100.0 | 100.0 | 100.0 |
| **Additions** | | | | | |
| New listings at this center | 9 | 10 | 333.3 | 128.0 | 145.1 |
| **Removals** | | | | | |
| Transferred to another center | 1 | 0 | 0.0 | 3.4 | 2.6 |
| Received living donor transplant* | 0 | 0 | 0.0 | 0.0 | 0.0 |
| Received deceased donor transplant* | 8 | 8 | 266.7 | 93.3 | 109.0 |
| Died | 0 | 1 | 33.3 | 6.2 | 6.3 |
| Transplanted at another center | 0 | 0 | 0.0 | 0.3 | 0.9 |
| Deteriorated | 0 | 0 | 0.0 | 6.7 | 8.3 |
| Recovered | 1 | 0 | 0.0 | 9.0 | 6.1 |
| Other reasons | 0 | 0 | 0.0 | 10.1 | 8.7 |
| **On waiting list at end of period** | 3 | 4 | 133.3 | 99.2 | 103.2 |

* 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 07/01/2020 and 06/30/2021**

| Demographic Characteristic | New Waiting List Registrations 07/01/2020 to 06/30/2021 (%) | | | All Waiting List Registrations on 06/30/2021 (%) | | |
|---|---|---|---|---|---|---|
| | This Center (N=10) | OPTN Region (N=457) | U.S. (N=5,108) | This Center (N=4) | OPTN Region (N=354) | U.S. (N=3,633) |
| **All (%)** | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| **Ethnicity/Race (%)*** | | | | | | |
| White | 60.0 | 56.0 | 57.1 | 50.0 | 48.9 | 56.8 |
| African-American | 30.0 | 33.0 | 26.3 | 25.0 | 41.0 | 28.0 |
| Hispanic/Latino | 0.0 | 6.3 | 11.3 | 0.0 | 6.2 | 10.8 |
| Asian | 10.0 | 2.8 | 3.9 | 25.0 | 2.5 | 3.1 |
| Other | 0.0 | 1.8 | 1.4 | 0.0 | 1.4 | 1.2 |
| Unknown | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Age (%)** | | | | | | |
| <2 years | 40.0 | 3.5 | 5.2 | 50.0 | 2.8 | 4.3 |
| 2-11 years | 20.0 | 3.3 | 4.2 | 50.0 | 3.1 | 4.5 |
| 12-17 years | 40.0 | 2.6 | 4.1 | 0.0 | 1.4 | 3.2 |
| 18-34 years | 0.0 | 11.8 | 10.1 | 0.0 | 11.3 | 11.8 |
| 35-49 years | 0.0 | 17.5 | 17.8 | 0.0 | 22.6 | 22.0 |
| 50-64 years | 0.0 | 42.0 | 41.3 | 0.0 | 45.8 | 43.1 |
| 65-69 years | 0.0 | 17.3 | 14.1 | 0.0 | 12.7 | 10.1 |
| 70+ years | 0.0 | 2.0 | 3.2 | 0.0 | 0.3 | 1.0 |
| **Gender (%)** | | | | | | |
| Male | 60.0 | 74.0 | 71.6 | 50.0 | 80.5 | 75.7 |
| Female | 40.0 | 26.0 | 28.4 | 50.0 | 19.5 | 24.3 |

* 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 07/01/2020 and 06/30/2021**

| Medical Characteristic | New Waiting List Registrations 07/01/2020 to 06/30/2021 (%) | | | All Waiting List Registrations on 06/30/2021 (%) | | |
|---|---|---|---|---|---|---|
| | This Center (N=10) | OPTN Region (N=457) | U.S. (N=5,108) | This Center (N=4) | OPTN Region (N=354) | U.S. (N=3,633) |
| **All (%)** | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| **Blood Type (%)** | | | | | | |
| O | 20.0 | 42.7 | 45.3 | 25.0 | 60.7 | 60.5 |
| A | 20.0 | 35.7 | 36.3 | 0.0 | 25.1 | 28.0 |
| B | 50.0 | 17.9 | 14.2 | 75.0 | 13.6 | 10.0 |
| AB | 10.0 | 3.7 | 4.2 | 0.0 | 0.6 | 1.5 |
| Unknown | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Previous Transplant (%)** | | | | | | |
| Yes | 0.0 | 3.1 | 3.9 | 0.0 | 3.1 | 3.6 |
| No | 100.0 | 96.9 | 96.1 | 100.0 | 96.9 | 96.4 |
| Unknown | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Primary Disease (%)** | | | | | | |
| Cardiomyopathy | 20.0 | 58.6 | 57.5 | 25.0 | 61.6 | 56.5 |
| Coronary Artery Disease | 0.0 | 26.7 | 24.9 | 0.0 | 24.0 | 25.8 |
| Retransplant/Graft Failure | 0.0 | 2.6 | 3.5 | 0.0 | 2.3 | 2.9 |
| Valvular Heart Disease | 0.0 | 0.7 | 1.0 | 0.0 | 0.8 | 1.0 |
| Congenital Heart Disease | 80.0 | 9.8 | 10.9 | 75.0 | 9.3 | 11.5 |
| Other | 0.0 | 1.5 | 2.2 | 0.0 | 2.0 | 2.3 |
| Missing | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Medical Urgency Status at Listing (%)** | | | | | | |
| Status 1A | 70.0 | 5.7 | 7.9 | 50.0 | 5.1 | 5.8 |
| Status 1B | 30.0 | 2.6 | 3.1 | 50.0 | 8.5 | 10.9 |
| Status 2 | 0.0 | 0.9 | 2.3 | 0.0 | 11.9 | 14.1 |
| Adult Status 1 | 0.0 | 5.3 | 4.5 | 0.0 | 0.8 | 0.4 |
| Adult Status 2 | 0.0 | 19.7 | 20.2 | 0.0 | 2.5 | 3.4 |
| Adult Status 3 | 0.0 | 5.5 | 8.8 | 0.0 | 3.1 | 4.1 |
| Adult Status 4 | 0.0 | 37.2 | 31.4 | 0.0 | 36.2 | 34.5 |
| Adult Status 5 | 0.0 | 2.8 | 3.4 | 0.0 | 4.2 | 3.6 |
| Adult Status 6 | 0.0 | 19.0 | 16.9 | 0.0 | 25.7 | 20.7 |
| Temporarily Inactive | 0.0 | 1.3 | 1.5 | 0.0 | 2.0 | 2.6 |

# B. Waiting List Information

**Table B4D. Deceased donor transplant rates: 07/01/2019 - 03/12/2020, 06/13/2020 - 06/30/2021**

| Waiting List Registrations | This Center | OPO/DSA | Region | U.S. |
|---|---|---|---|---|
| **All Candidates** | | | | |
| Count on waiting list at start* | 4 | 81 | 367 | 3,797 |
| Person Years** | 4.3 | 139.7 | 628.4 | 6,364.9 |
| Removals for Transplant | 14 | 125 | 586 | 6,519 |
| **Adult (18+) Candidates** | | | | |
| Count on waiting list at start* | -- | -- | -- | -- |
| Person Years** | -- | -- | -- | -- |
| Removals for transpant | -- | -- | -- | -- |
| **Pediatric (<18) Candidates** | | | | |
| Count on waiting list at start* | 4 | 4 | 32 | 407 |
| Person Years** | 4.3 | 4.3 | 48.9 | 749.5 |
| Removals for transplant | 14 | 14 | 64 | 891 |

* 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 July 1 or from the date of first wait listing until death, transplant, removal from the waiting list or June 30. Person years excludes time on the waiting list between March 13, 2020 and June 12, 2020.

**Figure B1D. Observed and expected deceased donor transplant rates: 07/01/2019 - 03/12/2020, 06/13/2020 - 06/30/2021**

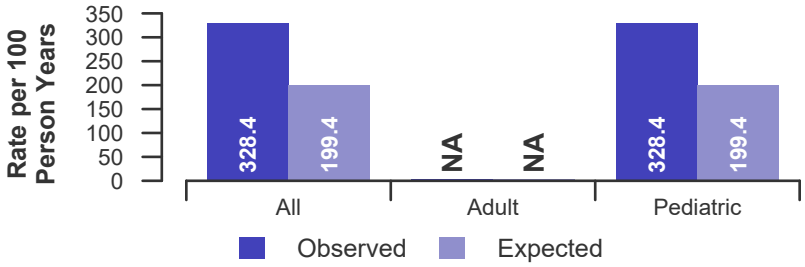



**Figure B3D. Observed adult (18+) and pediatric (<18) deceased donor transplant rates: 07/01/2019 - 03/12/2020, 06/13/2020 - 06/30/2021**

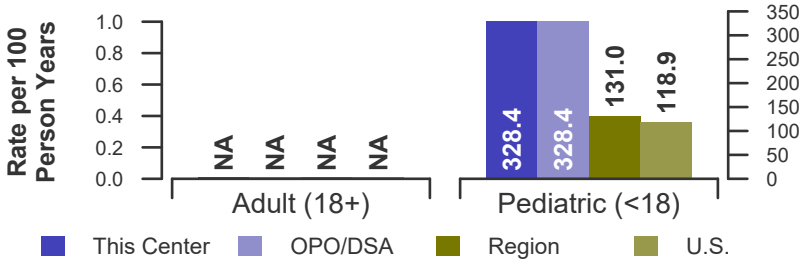
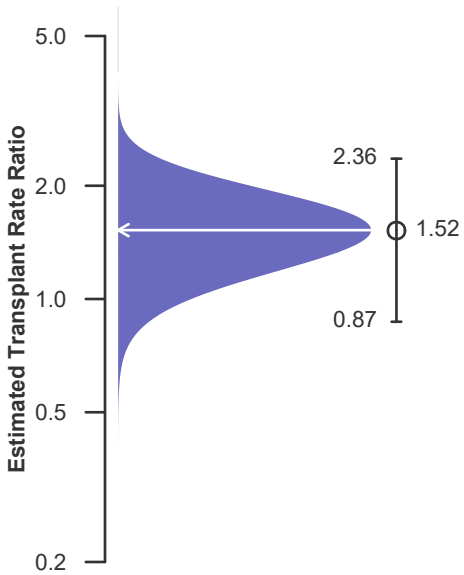



**Figure B2D. Deceased donor transplant rate ratio estimate**



# B. Waiting List Information

**Table B5. Pre-transplant mortality rates: 07/01/2019 - 03/12/2020, 06/13/2020 - 06/30/2021**

| Waiting List Registrations | This Center | OPO/DSA | Region | U.S. |
|---|---|---|---|---|
| **All Candidates** | | | | |
| Count on waiting list at start* | 4 | 81 | 367 | 3,797 |
| Person Years** | 4.4 | 154.4 | 719.4 | 7,291.8 |
| Number of deaths | 1 | 14 | 56 | 646 |
| **Adult (18+) Candidates** | | | | |
| Count on waiting list at start* | -- | -- | -- | -- |
| Person Years** | -- | -- | -- | -- |
| Number of deaths | -- | -- | -- | -- |
| **Pediatric (<18) Candidates** | | | | |
| Count on waiting list at start* | 4 | 4 | 32 | 407 |
| Person Years** | 4.4 | 4.4 | 54.2 | 841.2 |
| Number of deaths | 1 | 1 | 6 | 102 |

* 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 July 1 or from the date of first wait listing until death, transplant, 60 days after recovery, transfer or June 30. Person years excludes time on the waiting list between March 13, 2020 and June 12, 2020.

**Figure B4. Observed and expected pre-transplant mortality rates: 07/01/2019 - 03/12/2020, 06/13/2020 - 06/30/2021**

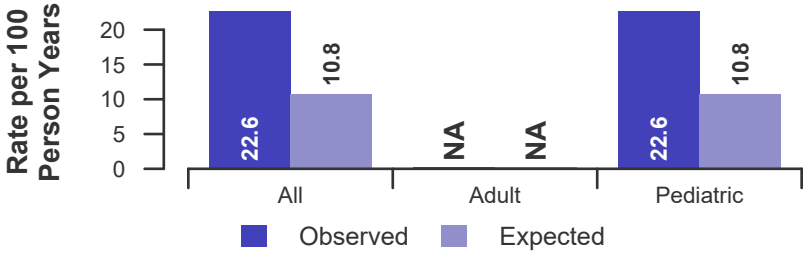



**Figure B5. Pre-transplant mortality rate ratio estimate**

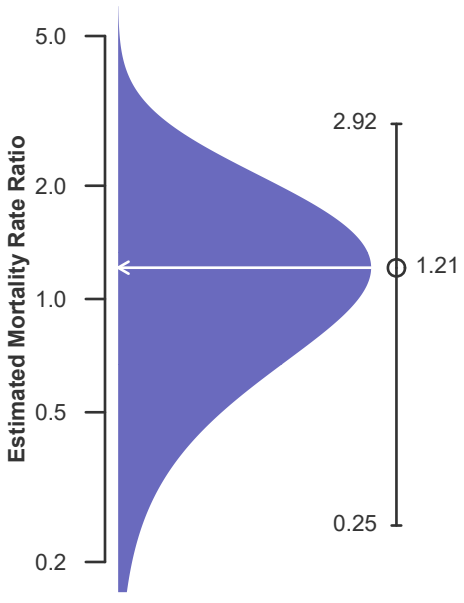
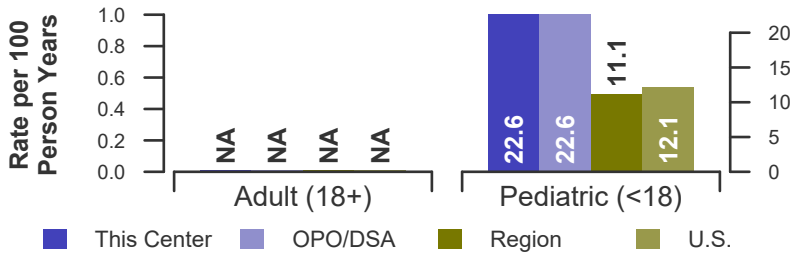



**Figure B6. Observed adult (18+) and pediatric (<18) pre-transplant mortality rates: 07/01/2019 - 03/12/2020, 06/13/2020 - 06/30/2021**



# B. Waiting List Information

**Table B6. Rates of patient mortality after listing: 07/01/2019 - 03/12/2020, 06/13/2020 - 06/30/2021**

| Waiting List Registrations | This Center | OPO/DSA | Region | U.S. |
|---|---|---|---|---|
| **All Patients** | | | | |
| Count at risk during the evaluation period | 54 | 491 | 2,725 | 27,543 |
| Person-years* | 60.3 | 533.6 | 3,224.3 | 32,681.5 |
| Number of Deaths | 6 | 47 | 197 | 1,897 |
| **Adult (18+) Patients** | | | | |
| Count at risk during the evaluation period | 0 | 436 | 2,455 | 23,581 |
| Person-years* | 0.0 | 472.6 | 2,896.3 | 27,931.5 |
| Number of Deaths | 0 | 41 | 179 | 1,670 |
| **Pediatric (<18) Patients** | | | | |
| Count at risk during the evaluation period | 54 | 55 | 270 | 3,962 |
| Person-years* | 60.3 | 61.0 | 328.0 | 4,749.9 |
| Number of Deaths | 6 | 6 | 18 | 227 |

* Person-years are calculated as days (converted to fractional years). The number of days from 07/01/2019, or from the date of first wait listing until death, reaching 5 years after listing or June 30, 2021. Person years excludes time on the waiting list between March 13, 2020 and June 12, 2020.

** Patient mortality after listing describes the relative survival experience of patients after listing. It depends on many factors, some of which are outside of the control of the transplant program. For example, availability of organs may not be the same in every part of the country.

**Figure B7. Observed and expected rates of patient mortality after listing: 07/01/2019 - 03/12/2020, 06/13/2020 - 06/30/2021**

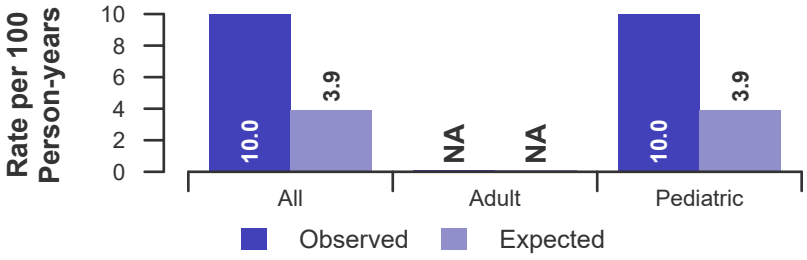



**Figure B8. HR estimate of patient mortality after listing**

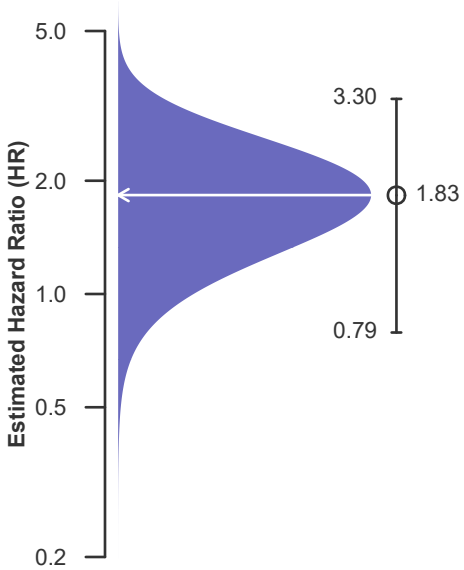
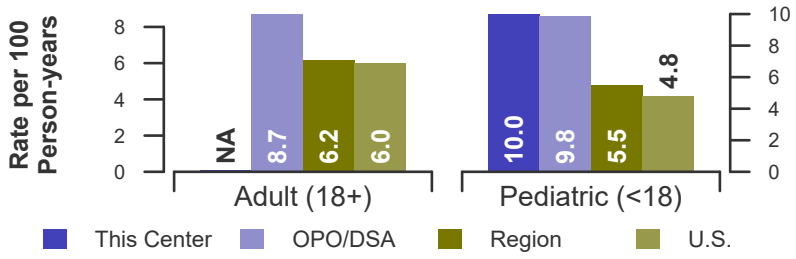



**Figure B9. Observed adult (18+) and pediatric (<18) rates of patient mortality after listing: 07/01/2019 - 03/12/2020, 06/13/2020 - 06/30/2021**



# B. Waiting List Information

**Table B7. Waiting list candidate status after listing**
**Candidates registered on waiting list between 01/01/2019 and 12/31/2019**

| Waiting list status (survival status) | This Center (N=9) Months Since Listing | | | U.S. (N=4,717) Months Since Listing | | |
|---|---|---|---|---|---|---|
| | 6 | 12 | 18 | 6 | 12 | 18 |
| **Alive on waiting list (%)** | 11.1 | 0.0 | 0.0 | 34.0 | 21.9 | 15.9 |
| **Died on the waiting list without transplant (%)** | 0.0 | 0.0 | 0.0 | 2.7 | 3.3 | 3.5 |
| **Removed without transplant (%):** | | | | | | |
| Condition worsened (status unknown) | 0.0 | 0.0 | 0.0 | 3.1 | 3.8 | 4.3 |
| Condition improved (status unknown) | 0.0 | 0.0 | 0.0 | 0.7 | 1.8 | 2.6 |
| Refused transplant (status unknown) | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.4 |
| Other | 0.0 | 0.0 | 0.0 | 2.0 | 3.1 | 3.7 |
| **Transplant (living or deceased donor) (%):** | | | | | | |
| Functioning (alive) | 55.6 | 66.7 | 44.4 | 53.0 | 57.2 | 44.1 |
| Failed-Retransplanted (alive) | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Failed-alive not retransplanted | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Died | 22.2 | 22.2 | 22.2 | 3.6 | 5.5 | 6.4 |
| Status Yet Unknown* | 0.0 | 0.0 | 22.2 | 0.2 | 2.0 | 17.9 |
| **Lost or Transferred (status unknown) (%)** | 11.1 | 11.1 | 11.1 | 0.4 | 1.0 | 1.2 |
| **TOTAL (%)** | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Total % known died on waiting list or after transplant | 22.2 | 22.2 | 22.2 | 6.3 | 8.8 | 9.9 |
| Total % known died or removed as unstable | 22.2 | 22.2 | 22.2 | 9.4 | 12.6 | 14.2 |
| Total % removed for transplant | 77.8 | 88.9 | 88.9 | 56.9 | 64.8 | 68.5 |
| Total % with known functioning transplant (alive) | 55.6 | 66.7 | 44.4 | 53.0 | 57.2 | 44.1 |

* 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 07/01/2015 and 06/30/2018**

| 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** | 33 | 12.1 | 60.6 | 66.7 | 69.7 | 13,703 | 16.8 | 56.3 | 64.1 | 66.6 |
| **Ethnicity/Race*** | | | | | | | | | | |
| White | 6 | 16.7 | 50.0 | 66.7 | 66.7 | 8,425 | 16.9 | 56.5 | 64.3 | 66.9 |
| African-American | 14 | 14.3 | 64.3 | 64.3 | 71.4 | 3,135 | 14.9 | 52.9 | 61.2 | 63.7 |
| Hispanic/Latino | 8 | 12.5 | 62.5 | 75.0 | 75.0 | 1,440 | 16.7 | 59.7 | 66.4 | 68.9 |
| Asian | 2 | 0.0 | 100.0 | 100.0 | 100.0 | 541 | 27.7 | 64.9 | 71.9 | 73.4 |
| Other | 3 | 0.0 | 33.3 | 33.3 | 33.3 | 162 | 15.4 | 57.4 | 62.3 | 65.4 |
| Unknown | 0 | -- | -- | -- | -- | 0 | -- | -- | -- | -- |
| **Age** | | | | | | | | | | |
| <2 years | 8 | 0.0 | 25.0 | 25.0 | 25.0 | 858 | 15.7 | 59.2 | 60.3 | 60.5 |
| 2-11 years | 15 | 13.3 | 60.0 | 73.3 | 80.0 | 598 | 13.9 | 61.4 | 69.9 | 72.2 |
| 12-17 years | 10 | 20.0 | 90.0 | 90.0 | 90.0 | 546 | 26.7 | 72.3 | 79.9 | 81.1 |
| 18-34 years | 0 | -- | -- | -- | -- | 1,303 | 16.3 | 52.6 | 59.6 | 62.8 |
| 35-49 years | 0 | -- | -- | -- | -- | 2,546 | 14.0 | 51.2 | 60.6 | 63.7 |
| 50-64 years | 0 | -- | -- | -- | -- | 5,704 | 16.0 | 55.1 | 63.6 | 66.6 |
| 65-69 years | 0 | -- | -- | -- | -- | 1,809 | 19.9 | 59.5 | 66.8 | 68.7 |
| 70+ years | 0 | -- | -- | -- | -- | 339 | 30.4 | 72.3 | 74.0 | 74.6 |
| **Gender** | | | | | | | | | | |
| Male | 18 | 5.6 | 55.6 | 61.1 | 61.1 | 9,723 | 15.8 | 54.8 | 63.3 | 66.1 |
| Female | 15 | 20.0 | 66.7 | 73.3 | 80.0 | 3,980 | 19.4 | 60.1 | 65.9 | 67.9 |

* 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 07/01/2015 and 06/30/2018**

| 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** | 33 | 12.1 | 60.6 | 66.7 | 69.7 | 13,703 | 16.8 | 56.3 | 64.1 | 66.6 |
| **Blood Type** | | | | | | | | | | |
| O | 16 | 0.0 | 56.2 | 62.5 | 68.8 | 6,107 | 10.3 | 47.0 | 55.9 | 59.0 |
| A | 10 | 10.0 | 50.0 | 60.0 | 60.0 | 5,009 | 21.2 | 62.9 | 69.9 | 71.9 |
| B | 4 | 50.0 | 100.0 | 100.0 | 100.0 | 1,968 | 19.9 | 62.4 | 69.7 | 72.4 |
| AB | 3 | 33.3 | 66.7 | 66.7 | 66.7 | 618 | 36.2 | 75.6 | 80.1 | 80.7 |
| **Previous Transplant** | | | | | | | | | | |
| Yes | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 584 | 12.2 | 44.0 | 48.6 | 51.2 |
| No | 31 | 12.9 | 64.5 | 71.0 | 74.2 | 13,119 | 17.0 | 56.9 | 64.8 | 67.3 |
| **Primary Disease** | | | | | | | | | | |
| Cardiomyopathy | 15 | 20.0 | 80.0 | 80.0 | 86.7 | 7,818 | 18.1 | 58.5 | 66.6 | 69.0 |
| Coronary Artery Disease | 0 | -- | -- | -- | -- | 3,587 | 16.5 | 54.3 | 62.3 | 65.6 |
| Retransplant/Graft Failure | 1 | 0.0 | 0.0 | 0.0 | 0.0 | 486 | 11.3 | 44.4 | 49.4 | 52.3 |
| Valvular Heart Disease | 0 | -- | -- | -- | -- | 130 | 15.4 | 61.5 | 66.2 | 68.5 |
| Congenital Heart Disease | 16 | 6.2 | 43.8 | 56.2 | 56.2 | 1,459 | 13.0 | 54.6 | 61.0 | 62.6 |
| Other | 1 | 0.0 | 100.0 | 100.0 | 100.0 | 223 | 17.5 | 47.5 | 53.8 | 55.6 |
| Missing | 0 | -- | -- | -- | -- | 0 | -- | -- | -- | -- |
| **Medical Urgency Status at Listing** | | | | | | | | | | |
| Status 1A | 13 | 7.7 | 53.8 | 53.8 | 53.8 | 4,272 | 31.6 | 70.0 | 72.9 | 73.9 |
| Status 1B | 4 | 0.0 | 75.0 | 75.0 | 100.0 | 5,576 | 14.0 | 58.1 | 67.2 | 70.0 |
| Status 2 | 16 | 18.8 | 62.5 | 75.0 | 75.0 | 3,404 | 4.4 | 38.5 | 50.2 | 54.2 |
| Unknown | 0 | -- | -- | -- | -- | 451 | 6.4 | 39.2 | 47.0 | 50.6 |

# B. Waiting List Information

**Table B10. Time to transplant for waiting list candidates***
**Candidates registered on the waiting list between 07/01/2015 and 12/31/2020**

| | Months to Transplant** | | | |
|---|---|---|---|---|
| **Percentile** | **Center** | **OPO/DSA** | **Region** | **U.S.** |
| **5th** | 0.3 | 0.2 | 0.2 | 0.2 |
| **10th** | 0.8 | 0.4 | 0.3 | 0.3 |
| **25th** | 1.8 | 2.2 | 1.2 | 1 |
| **50th (median time to transplant)** | 4.0 | 12.5 | 6.1 | 5.5 |
| **75th** | 20.7 | 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 06/30/2021. Calculated as the months after listing, during which the corresponding percent of all patients initially listed had received a transplant.

# B. Waiting List Information

### Table B11. Offer Acceptance Practices: 07/01/2020 - 06/30/2021

| Offers Acceptance Characteristics | This Center | OPO/DSA | Region | U.S. |
|---|---|---|---|---|
| **Overall** | | | | |
| Number of Offers | 55 | 2,543 | 7,296 | 57,203 |
| Number of Acceptances | 8 | 82 | 312 | 3,412 |
| Expected Acceptances | 11.1 | 87.1 | 308.6 | 3,409.7 |
| Offer Acceptance Ratio* | 0.76 | 0.94 | 1.01 | 1.00 |
| 95% Credible Interval** | [0.37, 1.30] | -- | -- | -- |
| **PHS increased infectious risk** | | | | |
| Number of Offers | 9 | 832 | 2,506 | 17,958 |
| Number of Acceptances | 1 | 28 | 96 | 953 |
| Expected Acceptances | 0.9 | 26.6 | 101.4 | 951.3 |
| Offer Acceptance Ratio* | 1.04 | 1.05 | 0.95 | 1.00 |
| 95% Credible Interval** | [0.21, 2.50] | -- | -- | -- |
| **Ejection fraction < 60** | | | | |
| Number of Offers | 18 | 1,005 | 2,561 | 18,242 |
| Number of Acceptances | 2 | 31 | 107 | 1,016 |
| Expected Acceptances | 2.6 | 32.0 | 105.7 | 1,009.1 |
| Offer Acceptance Ratio* | 0.86 | 0.97 | 1.01 | 1.01 |
| 95% Credible Interval** | [0.23, 1.89] | -- | -- | -- |
| **Donor Age >= 40** | | | | |
| Number of Offers | 0 | 1,197 | 3,436 | 25,760 |
| Number of Acceptances | 0 | 21 | 100 | 730 |
| Expected Acceptances | 0.0 | 21.8 | 80.9 | 745.0 |
| Offer Acceptance Ratio* | -- | 0.97 | 1.23 | 0.98 |
| 95% Credible Interval** | [--, --] | -- | -- | -- |
| **Hard-to-Place Hearts (Over 50 Offers)** | | | | |
| Number of Offers | 1 | 1,095 | 3,030 | 19,656 |
| Number of Acceptances | 0 | 8 | 48 | 267 |
| Expected Acceptances | 0.1 | 9.4 | 36.1 | 265.9 |
| Offer Acceptance Ratio* | 0.97 | 0.87 | 1.31 | 1.00 |
| 95% Credible Interval** | [0.12, 2.70] | -- | -- | -- |
| **Donor more than 500 miles away** | | | | |
| Number of Offers | 12 | 624 | 1,945 | 17,899 |
| Number of Acceptances | 2 | 19 | 62 | 769 |
| Expected Acceptances | 2.1 | 18.8 | 65.4 | 766.4 |
| Offer Acceptance Ratio* | 0.98 | 1.01 | 0.95 | 1.00 |
| 95% Credible Interval** | [0.27, 2.14] | -- | -- | -- |

* The offer acceptance ratio estimates the relative offer acceptance practice of Children's National Medical Center compared to the national offer acceptance practice. A ratio above one indicates the program is more likely to accept an offer compared to national offer acceptance practices (e.g., an offer acceptance ratio of 1.25 indicates a 25% more likely to accept an offer), while a ratio below one indicates the program is less likely to accept an offer compared to national offer acceptance practices (e.g., an offer acceptance ratio of 0.75 indicates a 25% less likely to accept an offer).
** As an example, the 95% Credible Interval for the overall offer acceptance ratio, [0.37, 1.30], indicates the location of DCCH's true offer acceptance ratio with 95% probability. The best estimate is 24% less likely to accept an offer compared to nationalacceptance behavior, but DCCH's performance could plausibly range from 63% reduced acceptance up to 30% higher acceptance.

# B. Waiting List Information

**Figure B10. Offer acceptance: Overall**

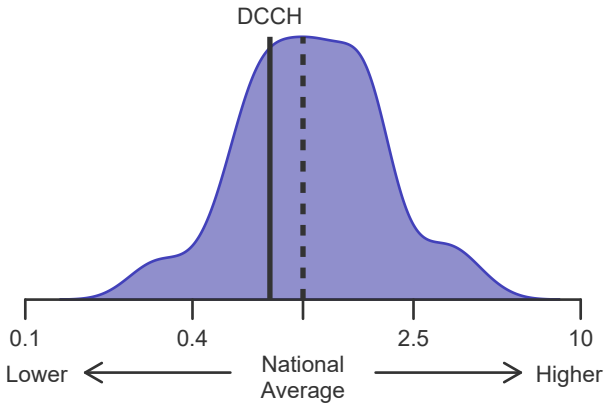



**Figure B11. Offer acceptance: PHS increased infectious risk**

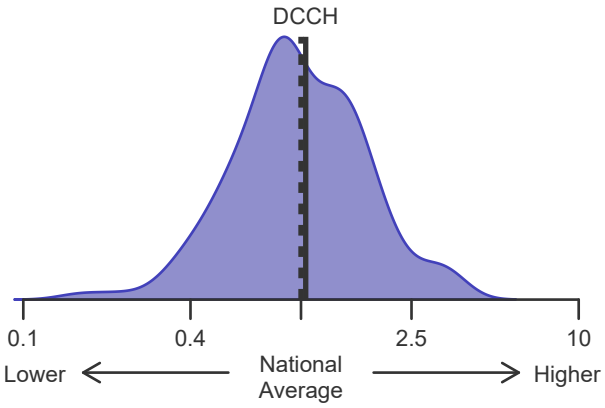



**Figure B12. Offer acceptance: Ejection fraction < 60**

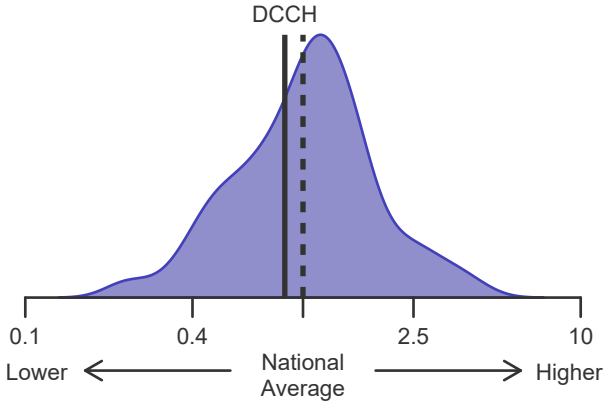



**Figure B13. Offer acceptance: Donor age >= 40**

This program received no offers.

**Figure B14. Offer acceptance: Offer number > 50**

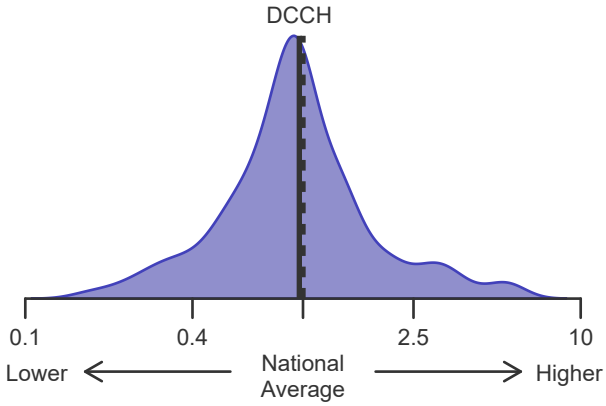
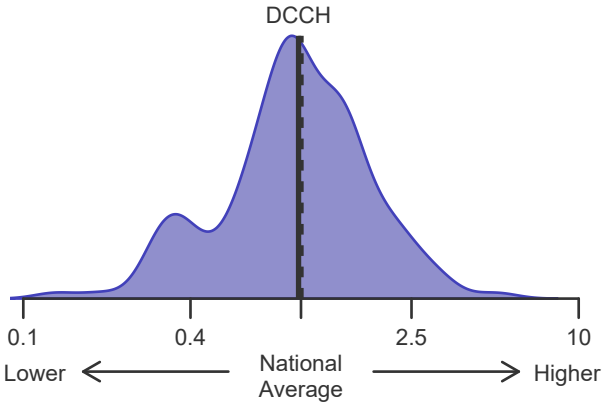



**Figure B15. Offer acceptance: Donor more than 500 miles away**



# C. Transplant Information

**Table C1D. Deceased donor transplant recipient demographic characteristics**
**Patients transplanted between 07/01/2020 and 06/30/2021**

| Characteristic | Percentage in each category | | |
|---|---|---|---|
| | Center (N=8) | Region (N=333) | U.S. (N=3,839) |
| **Ethnicity/Race (%)*** | | | |
| White | 37.5 | 60.1 | 58.2 |
| African-American | 50.0 | 30.3 | 25.7 |
| Hispanic/Latino | 0.0 | 5.7 | 11.0 |
| Asian | 0.0 | 1.8 | 3.8 |
| Other | 12.5 | 2.1 | 1.4 |
| Unknown | 0.0 | 0.0 | 0.0 |
| **Age (%)** | | | |
| <2 years | 12.5 | 1.5 | 4.1 |
| 2-11 years | 25.0 | 4.2 | 4.3 |
| 12-17 | 62.5 | 4.2 | 4.7 |
| 18-34 | 0.0 | 11.1 | 9.5 |
| 35-49 years | 0.0 | 14.4 | 16.3 |
| 50-64 years | 0.0 | 45.6 | 42.3 |
| 65-69 years | 0.0 | 15.9 | 14.8 |
| 70+ years | 0.0 | 3.0 | 4.1 |
| **Gender (%)** | | | |
| Male | 62.5 | 72.4 | 70.7 |
| Female | 37.5 | 27.6 | 29.3 |

* 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 07/01/2020 and 06/30/2021**

| Characteristic | Percentage in each category | | |
|---|---|---|---|
| | Center (N=8) | Region (N=333) | U.S. (N=3,839) |
| **Blood Type (%)** | | | |
| O | 12.5 | 38.1 | 41.6 |
| A | 25.0 | 36.9 | 38.5 |
| B | 37.5 | 19.8 | 14.7 |
| AB | 25.0 | 5.1 | 5.2 |
| **Previous Transplant (%)** | | | |
| Yes | 0.0 | 0.9 | 3.6 |
| No | 100.0 | 99.1 | 96.4 |
| **Body Mass Index (%)** | | | |
| 0-20 | 75.0 | 15.0 | 16.9 |
| 21-25 | 12.5 | 28.5 | 28.2 |
| 26-30 | 0.0 | 32.7 | 30.4 |
| 31-35 | 12.5 | 18.0 | 18.4 |
| 36-40 | 0.0 | 4.8 | 4.1 |
| 41+ | 0.0 | 0.9 | 0.6 |
| Unknown | 0.0 | 0.0 | 1.4 |
| **Primary Disease (%)** | | | |
| Cardiomyopathy | 50.0 | 62.8 | 61.3 |
| Coronary Artery Disease | 0.0 | 25.5 | 25.4 |
| Retransplant/Graft Failure | 0.0 | 0.0 | 0.0 |
| Valvular Heart Disease | 0.0 | 0.6 | 0.7 |
| Congenital Heart Disease | 50.0 | 9.9 | 10.5 |
| Other | 0.0 | 1.2 | 1.6 |
| Missing | 0.0 | 0.0 | 0.4 |
| **Medical Urgency Status at Transplant (%)** | | | |
| Status 1A | 87.5 | 6.9 | 10.8 |
| Status 1B | 12.5 | 2.1 | 2.2 |
| Status 2 | 0.0 | 1.2 | 0.4 |
| Adult Status 1 | 0.0 | 10.5 | 7.8 |
| Adult Status 2 | 0.0 | 44.1 | 41.9 |
| Adult Status 3 | 0.0 | 9.3 | 13.9 |
| Adult Status 4 | 0.0 | 22.8 | 17.1 |
| Adult Status 5 | 0.0 | 0.0 | 0.8 |
| Adult Status 6 | 0.0 | 3.0 | 5.1 |
| **Recipient Medical Condition at Transplant (%)** | | | |
| Not Hospitalized | 12.5 | 32.4 | 29.9 |
| Hospitalized | 0.0 | 14.1 | 15.6 |
| ICU | 87.5 | 53.5 | 53.7 |
| Unknown | 0.0 | 0.0 | 0.8 |
| **Recipient Circulatory Support Status at Transplant (%)** | | | |
| No Support Mechanism | 25.0 | 20.4 | 21.8 |
| Devices* | 75.0 | 66.4 | 61.0 |
| Other Support Mechanism | 0.0 | 13.2 | 16.5 |
| Unknown | 0.0 | 0.0 | 0.7 |

* Devices include ventricular assist devices (VAD), extracorporeal membrane oxygenation (ECMO), intraaortic balloon pump (IABP), and total artificial heart (TAH).

# C. Transplant Information

**Table C3D. Deceased donor characteristics**
**Transplants performed between 07/01/2020 and 06/30/2021**

| Donor Characteristic | Percentage in each category | | |
|---|---|---|---|
| | Center (N=8) | Region (N=333) | U.S. (N=3,839) |
| **Cause of Death (%)** | | | |
| Deceased: Stroke | 12.5 | 17.7 | 12.3 |
| Deceased: MVA | 25.0 | 14.1 | 18.4 |
| Deceased: Other | 62.5 | 68.2 | 69.3 |
| **Ethnicity/Race (%)*** | | | |
| White | 37.5 | 65.2 | 61.0 |
| African-American | 37.5 | 20.4 | 17.9 |
| Hispanic/Latino | 25.0 | 12.0 | 17.6 |
| Asian | 0.0 | 1.8 | 2.1 |
| Other | 0.0 | 0.6 | 1.4 |
| Not Reported | 0.0 | 0.0 | 0.0 |
| **Age (%)** | | | |
| <2 years | 0.0 | 0.6 | 3.0 |
| 2-11 years | 37.5 | 3.6 | 3.9 |
| 12-17 | 25.0 | 5.4 | 6.6 |
| 18-34 | 37.5 | 46.2 | 52.0 |
| 35-49 years | 0.0 | 33.3 | 28.8 |
| 50-64 years | 0.0 | 10.8 | 5.7 |
| 65-69 years | 0.0 | 0.0 | 0.0 |
| 70+ years | 0.0 | 0.0 | 0.0 |
| **Gender (%)** | | | |
| Male | 75.0 | 63.4 | 69.6 |
| Female | 25.0 | 36.6 | 30.4 |
| **Blood Type (%)** | | | |
| O | 50.0 | 49.2 | 53.9 |
| A | 37.5 | 36.0 | 33.8 |
| B | 12.5 | 13.2 | 10.5 |
| AB | 0.0 | 1.5 | 1.9 |
| 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 07/01/2020 and 06/30/2021**

| Transplant Characteristic | Percentage in each category | | |
|---|---|---|---|
| | Center (N=8) | Region (N=333) | U.S. (N=3,839) |
| **Total Ischemic Time (Minutes): Local (%)** | | | |
| Deceased: 0-90 min | -- | 2.4 | 8.4 |
| Deceased: 91-180 min | -- | 82.9 | 60.2 |
| Deceased: 181-270 min | -- | 14.6 | 26.6 |
| Deceased: 271-360 min | -- | 0.0 | 2.6 |
| Deceased: 361+ min | -- | 0.0 | 0.7 |
| Not Reported | -- | 0.0 | 1.5 |
| **Total Ischemic Time (Minutes): Shared (%)** | | | |
| Deceased: 0-90 min | 0.0 | 1.0 | 0.8 |
| Deceased: 91-180 min | 12.5 | 17.1 | 17.5 |
| Deceased: 181-270 min | 87.5 | 74.7 | 64.8 |
| Deceased: 271-360 min | 0.0 | 5.8 | 13.1 |
| Deceased: 361+ min | 0.0 | 1.0 | 3.0 |
| Not Reported | 0.0 | 0.3 | 0.9 |
| **Procedure Type (%)** | | | |
| Single organ | 100.0 | 93.7 | 90.0 |
| Multi organ | 0.0 | 6.3 | 10.0 |
| **Donor Location (%)** | | | |
| Local Donation Service Area (DSA) | 0.0 | 12.3 | 21.4 |
| Another Donation Service Area (DSA) | 100.0 | 87.7 | 78.6 |
| **Median Time in Hospital After Transplant** | 19.5 Days | 19.0 Days | 18.0 Days |

# C. Transplant Information

### Table C5D. Adult (18+) 1-month survival with a functioning deceased donor graft

**Single organ transplants performed between 07/01/2018 and 03/12/2020, and 06/13/2020 and 12/31/2020**
**Deaths and retransplants are considered graft failures**
**Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020**

This center did not perform any transplants relevant to this table during 07/01/2018-12/31/2020

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

This center did not perform any transplants relevant to this figure during 07/01/2018-12/31/2020

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

This center did not perform any transplants relevant to this figure during 07/01/2018-12/31/2020

# C. Transplant Information

### Table C6D. Adult (18+) 1-year survival with a functioning deceased donor graft

**Single organ transplants performed between 07/01/2018 and 03/12/2020, and 06/13/2020 and 12/31/2020**
**Deaths and retransplants are considered graft failures**
**Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020**

This center did not perform any transplants relevant to this table during 07/01/2018-12/31/2020

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

This center did not perform any transplants relevant to this figure during 07/01/2018-12/31/2020

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

This center did not perform any transplants relevant to this figure during 07/01/2018-12/31/2020

# C. Transplant Information

### Table C7D. Adult (18+) 3-year survival with a functioning deceased donor graft

**Single organ transplants performed between 01/01/2016 and 06/30/2018**
**Deaths and retransplants are considered graft failures**
**Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020**

This center did not perform any transplants relevant to this table during 01/01/2016-06/30/2018

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

This center did not perform any transplants relevant to this figure during 01/01/2016-06/30/2018

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

This center did not perform any transplants relevant to this figure during 01/01/2016-06/30/2018

# C. Transplant Information

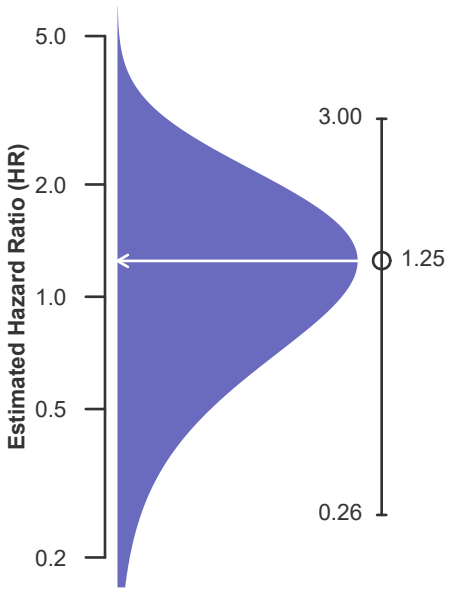
### Table C8D. Pediatric (<18) 1-month survival with a functioning deceased donor graft

**Single organ transplants performed between 07/01/2018 and 03/12/2020, and 06/13/2020 and 12/31/2020**
**Deaths and retransplants are considered graft failures**
**Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020**

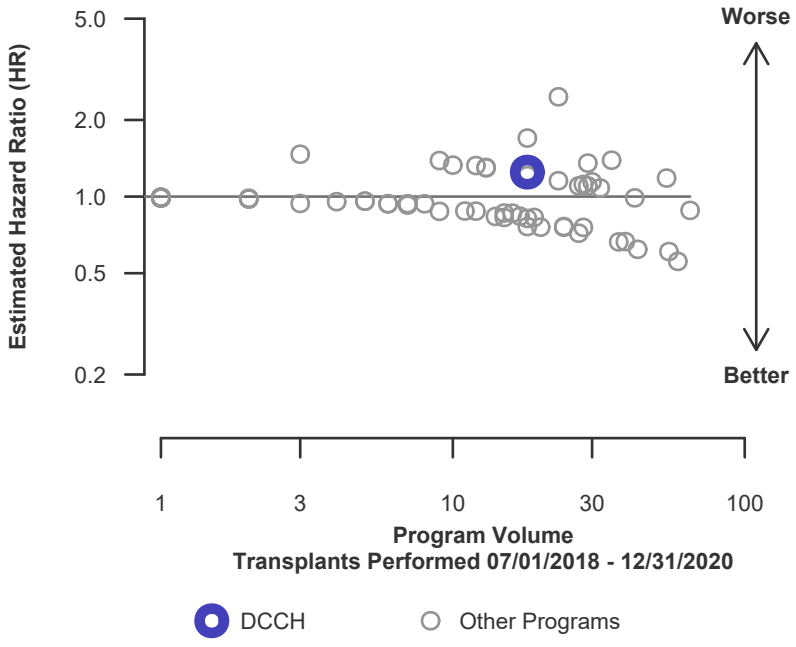
| | DCCH | U.S. |
|---|---|---|
| Number of transplants evaluated | 18 | 1,125 |
| Estimated probability of surviving with a functioning graft at 1 month (unadjusted for patient and donor characteristics) | 94.12% | 97.48% |
| Expected probability of surviving with a functioning graft at 1 month (adjusted for patient and donor characteristics) | 97.66% | -- |
| Number of observed graft failures (including deaths) during the first month after transplant | 1 | 28 |
| Number of expected graft failures (including deaths) during the first month after transplant | 0.40 | -- |
| Estimated hazard ratio* | 1.25 | -- |
| 95% credible interval for the hazard ratio** | [0.26, 3.00] | -- |

* The hazard ratio provides an estimate of how Children's National Medical Center's results compare with what was expected based on modeling the transplant outcomes from all U.S. programs. A ratio above 1 indicates higher than expected graft failure rates (e.g., a hazard ratio of 1.5 would indicate 50% higher risk), and a ratio below 1 indicates lower than expected graft failure rates (e.g., a hazard ratio of 0.75 would indicate 25% lower risk). If DCCH's graft failure rate were precisely the expected rate, the estimated hazard ratio would be 1.0.
** The 95% credible interval, [0.26, 3.00], indicates the location of DCCH's true hazard ratio with 95% probability. The best estimate is 25% higher risk of graft failure compared to an average program, but DCCH's performance could plausibly range from 74% reduced risk up to 200% increased risk.

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




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



# C. Transplant Information

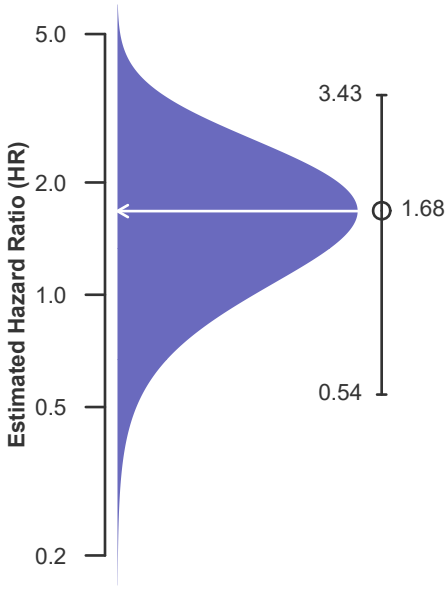
### Table C9D. Pediatric (<18) 1-year survival with a functioning deceased donor graft

**Single organ transplants performed between 07/01/2018 and 03/12/2020, and 06/13/2020 and 12/31/2020**
**Deaths and retransplants are considered graft failures**
**Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020**

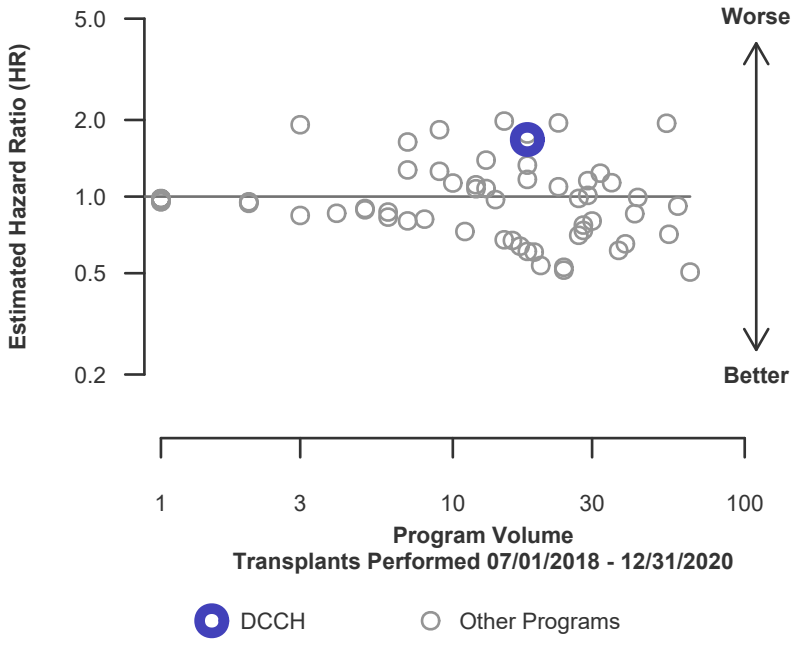
| | DCCH | U.S. |
|---|---|---|
| Number of transplants evaluated | 18 | 1,125 |
| Estimated probability of surviving with a functioning graft at 1 year (unadjusted for patient and donor characteristics) | 81.57% | 91.35% |
| Expected probability of surviving with a functioning graft at 1 year (adjusted for patient and donor characteristics) | 91.89% | -- |
| Number of observed graft failures (including deaths) during the first year after transplant | 3 | 77 |
| Number of expected graft failures (including deaths) during the first year after transplant | 0.98 | -- |
| Estimated hazard ratio* | 1.68 | -- |
| 95% credible interval for the hazard ratio** | [0.54, 3.43] | -- |

* The hazard ratio provides an estimate of how Children's National Medical Center's results compare with what was expected based on modeling the transplant outcomes from all U.S. programs. A ratio above 1 indicates higher than expected graft failure rates (e.g., a hazard ratio of 1.5 would indicate 50% higher risk), and a ratio below 1 indicates lower than expected graft failure rates (e.g., a hazard ratio of 0.75 would indicate 25% lower risk). If DCCH's graft failure rate were precisely the expected rate, the estimated hazard ratio would be 1.0.
** The 95% credible interval, [0.54, 3.43], indicates the location of DCCH's true hazard ratio with 95% probability. The best estimate is 68% higher risk of graft failure compared to an average program, but DCCH's performance could plausibly range from 46% reduced risk up to 243% increased risk.

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




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



# C. Transplant Information

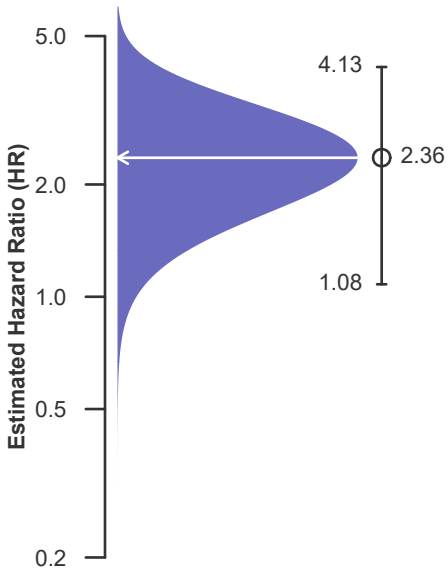
## Table C10D. Pediatric (<18) 3-year survival with a functioning deceased donor graft

**Single organ transplants performed between 01/01/2016 and 06/30/2018**
**Deaths and retransplants are considered graft failures**
**Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020**

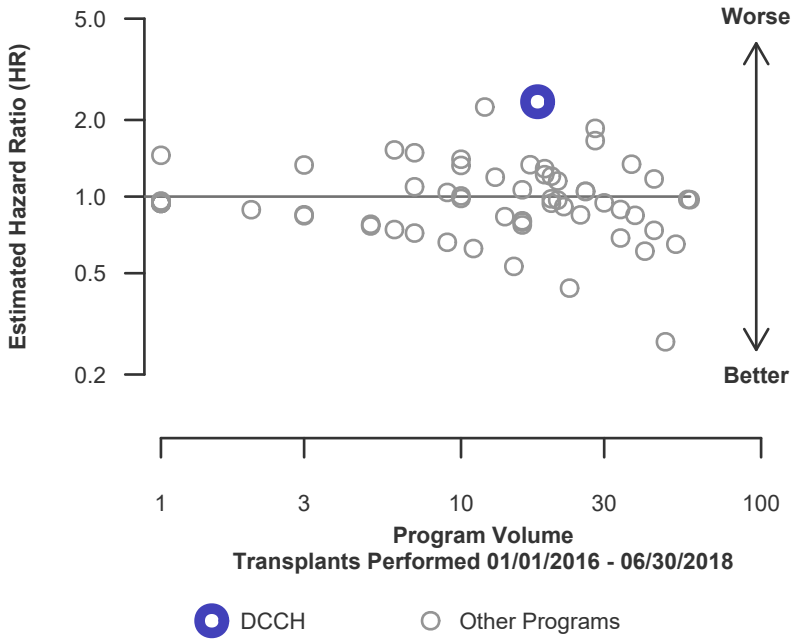
| | DCCH | U.S. |
|---|---|---|
| Number of transplants evaluated | 18 | 1,123 |
| Estimated probability of surviving with a functioning graft at 3 years (unadjusted for patient and donor characteristics) | 56.15% | 88.14% |
| Expected probability of surviving with a functioning graft at 3 years (adjusted for patient and donor characteristics) | 88.14% | -- |
| Number of observed graft failures (including deaths) during the first 3 years after transplant | 7 | 121 |
| Number of expected graft failures (including deaths) during the first 3 years after transplant | 1.82 | -- |
| Estimated hazard ratio* | 2.36 | -- |
| 95% credible interval for the hazard ratio** | [1.08, 4.13] | -- |

* The hazard ratio provides an estimate of how Children's National Medical Center's results compare with what was expected based on modeling the transplant outcomes from all U.S. programs. A ratio above 1 indicates higher than expected graft failure rates (e.g., a hazard ratio of 1.5 would indicate 50% higher risk), and a ratio below 1 indicates lower than expected graft failure rates (e.g., a hazard ratio of 0.75 would indicate 25% lower risk). If DCCH's graft failure rate were precisely the expected rate, the estimated hazard ratio would be 1.0.
** The 95% credible interval, [1.08, 4.13], indicates the location of DCCH's true hazard ratio with 95% probability. The best estimate is 136% higher risk of graft failure compared to an average program, but DCCH's performance could plausibly range from 8% increased risk up to 313% increased risk.

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




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



# C. Transplant Information

### Table C11D. Adult (18+) 1-month patient survival (deceased donor graft recipients)

**Single organ transplants performed between 07/01/2018 and 03/12/2020, and 06/13/2020 and 12/31/2020**
**Retransplants excluded**
**Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020**

**This center did not perform any transplants relevant to this table during 07/01/2018-12/31/2020**

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

**This center did not perform any transplants relevant to this figure during 07/01/2018-12/31/2020**

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

**This center did not perform any transplants relevant to this figure during 07/01/2018-12/31/2020**

# C. Transplant Information

### Table C12D. Adult (18+) 1-year patient survival (deceased donor graft recipients)

**Single organ transplants performed between 07/01/2018 and 03/12/2020, and 06/13/2020 and 12/31/2020**
**Retransplants excluded**
**Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020**

**This center did not perform any transplants relevant to this table during 07/01/2018-12/31/2020**

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

**This center did not perform any transplants relevant to this figure during 07/01/2018-12/31/2020**

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

**This center did not perform any transplants relevant to this figure during 07/01/2018-12/31/2020**

# C. Transplant Information

### Table C13D. Adult (18+) 3-year patient survival (deceased donor graft recipients)

**Single organ transplants performed between 01/01/2016 and 06/30/2018**
**Retransplants excluded**
**Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020**

This center did not perform any transplants relevant to this table during 01/01/2016-06/30/2018

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

This center did not perform any transplants relevant to this figure during 01/01/2016-06/30/2018

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

This center did not perform any transplants relevant to this figure during 01/01/2016-06/30/2018

# C. Transplant Information

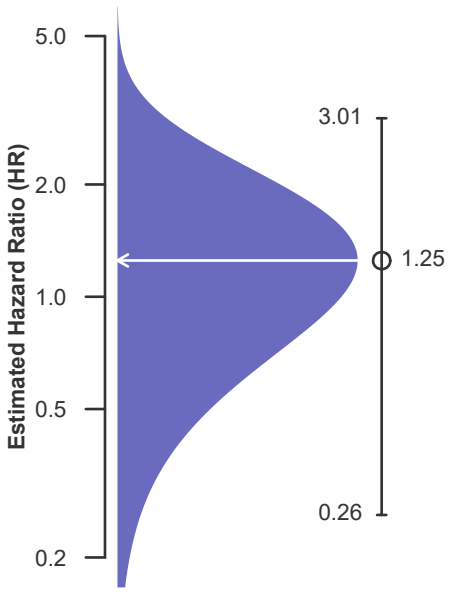
## Table C14D. Pediatric (<18) 1-month patient survival (deceased donor graft recipients)

**Single organ transplants performed between 07/01/2018 and 03/12/2020, and 06/13/2020 and 12/31/2020**
**Retransplants excluded**
**Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020**

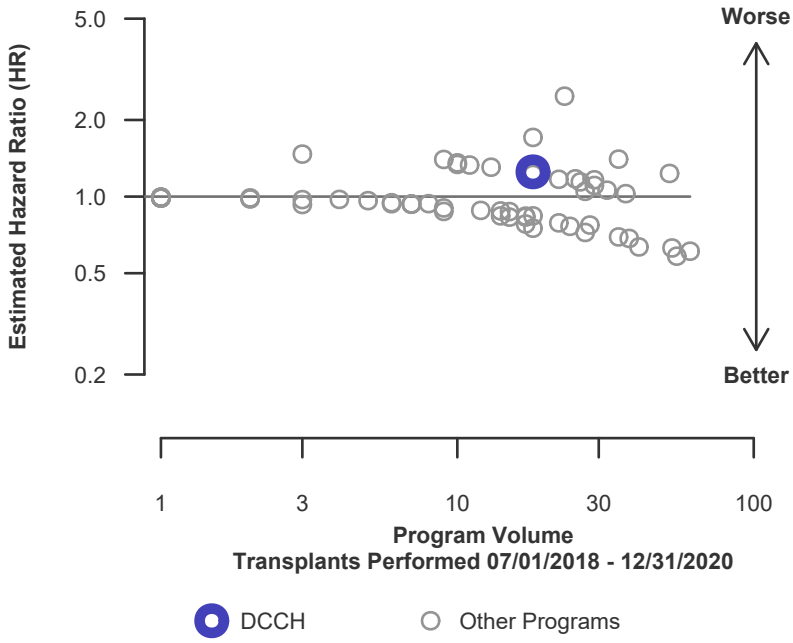
| | DCCH | U.S. |
|---|---|---|
| Number of transplants evaluated | 18 | 1,077 |
| Estimated probability of surviving at 1 month (unadjusted for patient and donor characteristics) | 94.12% | 97.55% |
| Expected probability of surviving at 1 month (adjusted for patient and donor characteristics) | 97.68% | -- |
| Number of observed deaths during the first month after transplant | 1 | 26 |
| Number of expected deaths during the first month after transplant | 0.40 | -- |
| Estimated hazard ratio* | 1.25 | -- |
| 95% credible interval for the hazard ratio** | [0.26, 3.01] | -- |

* The hazard ratio provides an estimate of how Children's National Medical Center's results compare with what was expected based on modeling the transplant outcomes from all U.S. programs. A ratio above 1 indicates higher than expected patient death rates (e.g., a hazard ratio of 1.5 would indicate 50% higher risk), and a ratio below 1 indicates lower than expected patient death rates (e.g., a hazard ratio of 0.75 would indicate 25% lower risk). If DCCH's patient death rate were precisely the expected rate, the estimated hazard ratio would be 1.0.
** The 95% credible interval, [0.26, 3.01], indicates the location of DCCH's true hazard ratio with 95% probability. The best estimate is 25% higher risk of patient death compared to an average program, but DCCH's performance could plausibly range from 74% reduced risk up to 201% increased risk.

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




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



# C. Transplant Information

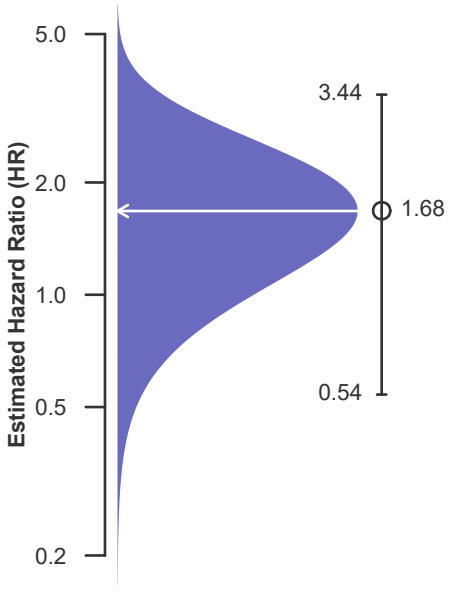
## Table C15D. Pediatric (<18) 1-year patient survival (deceased donor graft recipients)

**Single organ transplants performed between 07/01/2018 and 03/12/2020, and 06/13/2020 and 12/31/2020**
**Retransplants excluded**
**Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020**

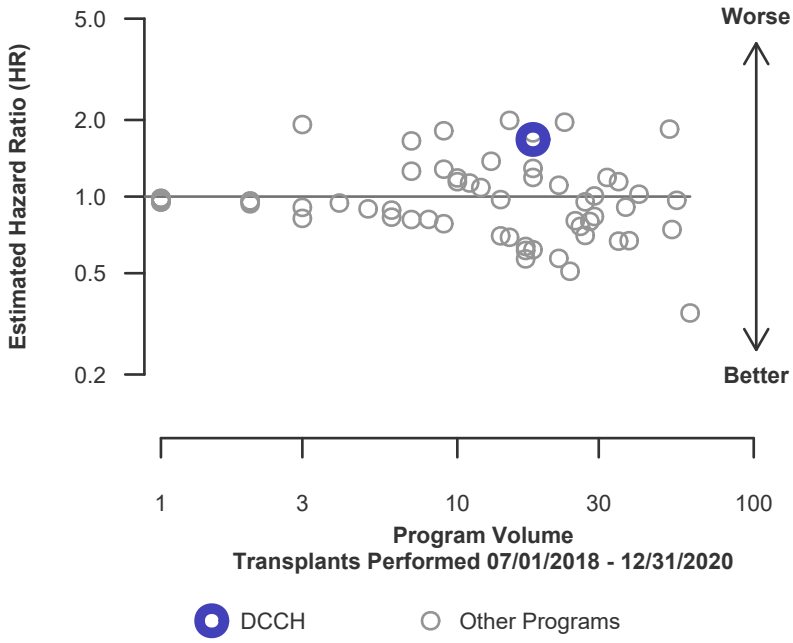
| | DCCH | U.S. |
|---|---|---|
| Number of transplants evaluated | 18 | 1,077 |
| Estimated probability of surviving at 1 year (unadjusted for patient and donor characteristics) | 81.57% | 91.37% |
| Expected probability of surviving at 1 year (adjusted for patient and donor characteristics) | 91.69% | -- |
| Number of observed deaths during the first year after transplant | 3 | 73 |
| Number of expected deaths during the first year after transplant | 0.98 | -- |
| Estimated hazard ratio* | 1.68 | -- |
| 95% credible interval for the hazard ratio** | [0.54, 3.44] | -- |

* The hazard ratio provides an estimate of how Children's National Medical Center's results compare with what was expected based on modeling the transplant outcomes from all U.S. programs. A ratio above 1 indicates higher than expected patient death rates (e.g., a hazard ratio of 1.5 would indicate 50% higher risk), and a ratio below 1 indicates lower than expected patient death rates (e.g., a hazard ratio of 0.75 would indicate 25% lower risk). If DCCH's patient death rate were precisely the expected rate, the estimated hazard ratio would be 1.0.
** The 95% credible interval, [0.54, 3.44], indicates the location of DCCH's true hazard ratio with 95% probability. The best estimate is 68% higher risk of patient death compared to an average program, but DCCH's performance could plausibly range from 46% reduced risk up to 244% increased risk.

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




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



# C. Transplant Information

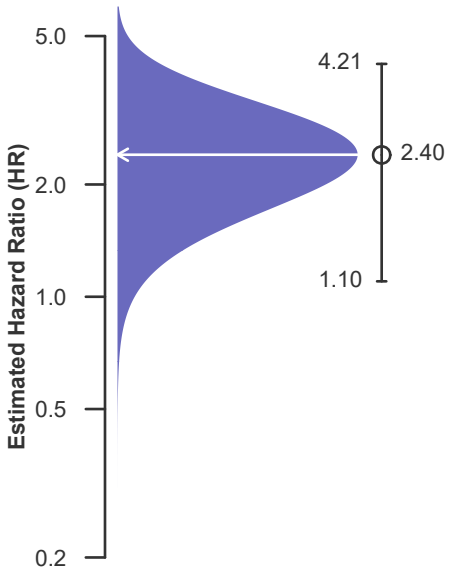
## Table C16D. Pediatric (<18) 3-year patient survival (deceased donor graft recipients)

**Single organ transplants performed between 01/01/2016 and 06/30/2018**
**Retransplants excluded**
**Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020**

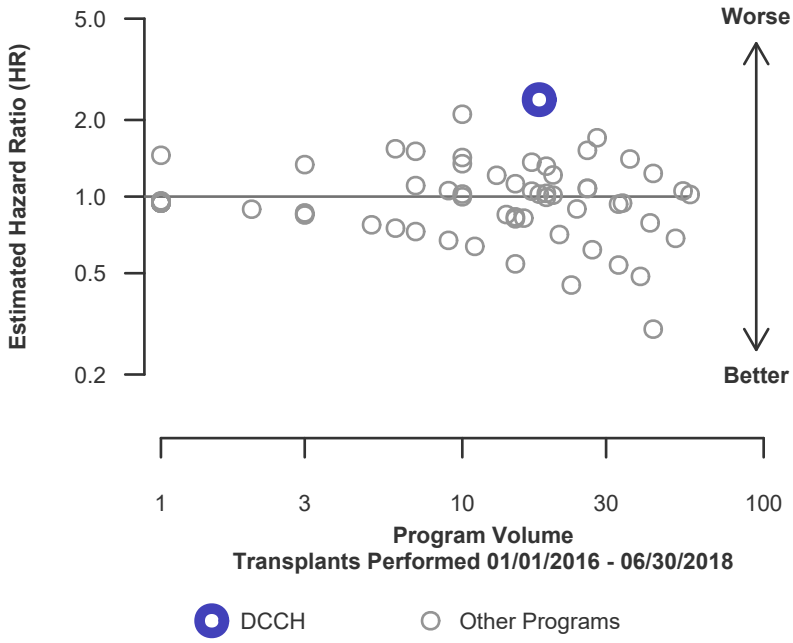
| | DCCH | U.S. |
|---|---|---|
| Number of transplants evaluated | 18 | 1,079 |
| Estimated probability of surviving at 3 years (unadjusted for patient and donor characteristics) | 56.15% | 88.61% |
| Expected probability of surviving at 3 years (adjusted for patient and donor characteristics) | 88.62% | -- |
| Number of observed deaths during the first 3 years after transplant | 7 | 111 |
| Number of expected deaths during the first 3 years after transplant | 1.75 | -- |
| Estimated hazard ratio* | 2.40 | -- |
| 95% credible interval for the hazard ratio** | [1.10, 4.21] | -- |

* The hazard ratio provides an estimate of how Children's National Medical Center's results compare with what was expected based on modeling the transplant outcomes from all U.S. programs. A ratio above 1 indicates higher than expected patient death rates (e.g., a hazard ratio of 1.5 would indicate 50% higher risk), and a ratio below 1 indicates lower than expected patient death rates (e.g., a hazard ratio of 0.75 would indicate 25% lower risk). If DCCH's patient death rate were precisely the expected rate, the estimated hazard ratio would be 1.0.
** The 95% credible interval, [1.10, 4.21], indicates the location of DCCH's true hazard ratio with 95% probability. The best estimate is 140% higher risk of patient death compared to an average program, but DCCH's performance could plausibly range from 10% increased risk up to 321% increased risk.

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




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



# C. Transplant Information

**Table C17. Multi-organ transplant graft survival: 07/01/2018 - 12/31/2020**

**Adult (18+) Transplants**

No adult (18+) multi-organ transplants were performed

**Pediatric (<18) Transplants**

| Transplant Type | Transplants Performed | | First-Year Outcomes: Heart Graft Failures | | Estimated Heart Graft Survival | |
|---|---|---|---|---|---|---|
| | DCCH-TX1 | USA | DCCH-TX1 | USA | DCCH-TX1 | USA |
| Kidney-Heart | 1 | 10 | 1 | 3 | 0.0% | 68.6% |

**Table C18. Multi-organ transplant patient survival: 07/01/2018 - 12/31/2020**

**Adult (18+) Transplants**

No adult (18+) multi-organ transplants were performed

**Pediatric (<18) Transplants**

| Transplant Type | Transplants Performed | | First-Year Outcomes: Patient Deaths | | Estimated Patient Survival | |
|---|---|---|---|---|---|---|
| | DCCH-TX1 | USA | DCCH-TX1 | USA | DCCH-TX1 | USA |
| Kidney-Heart | 1 | 10 | 1 | 3 | 0.0% | 68.6% |