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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, 90-day, 1-year, 1-year conditional on 90-day, 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, July 2021, January 2022, July 2022, January 2023 and July 2023. These reports made adjustments to transplant program and OPO performance metrics so that data during the time around the declaration of a national public health emergency on March 13, 2020, were not included in the metrics.

Modifications for the January 2024 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 meetings April 27, 2021 and on January 11, 2022. 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 2024 reporting cycle. These changes will remain in force beyond the January 2024 reporting cycle, unless otherwise amended:

Posttransplant Outcomes (including 1-month, 90-day, 1-year, 1-year conditional on 90-day, 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, 90-day, 1-year & 1-year conditional on 90-day Patient and Graft Survival Evaluations: Transplants 7/1/2020-12/31/2022, follow-up through 6/30/2023.

3-year Patient and Graft Survival Evaluations: Transplants 1/1/2018-3/12/2020, follow-up through 3/12/2020. Transplants 6/13/2020-6/30/2020; follow-up through 6/30/2023.

Pre-Transplant Mortality Rate (formerly called Waitlist Mortality Rate): These evaluations are based on normal reporting cohorts.

Days after listing (and before transplant) between 7/1/2021 and 6/30/2023.

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Transplant Rate: These evaluations are based on normal reporting cohorts.

Candidates on the waitlist 7/1/2021-6/30/2023.

Overall Rate of Mortality After Listing: These evaluations are based on normal reporting cohorts.

Evaluation period: 7/1/2021-6/30/2023.

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

Offers received 7/1/2022-6/30/2023.

These decisions will apply to the evaluations released in the SRTR's semi-annual program-specific reports scheduled for release on January 9, 2024. 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 2024.

As with the July 2023 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 transplant program at Lucile Salter Packard Children's Hospital at Stanford. 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 193.6 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 07/01/2017 and 12/31/2022. The time it took for 5% (the 5th percentile) of patients to receive a transplant at this program was 0.1 months. If "Not Observed" is displayed in the table, then too few candidates received transplants before 06/30/2023 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-C14 (tables C5-C10 for Pancreas) 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-C14 present data on graft survival, Tables C15-C20 (tables C11-C20 for Pancreas) 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 C21 and C22 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.

Table of Contents

A. Program Summary

Figure A1. Waiting list and transplant activity

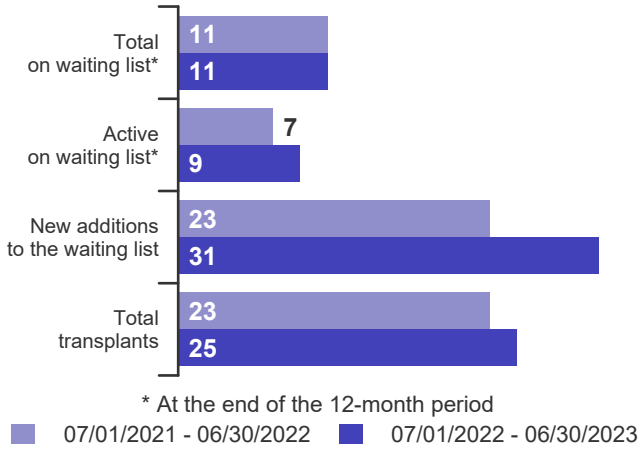


Table A1. Census of transplant recipients

Recipients	07/01/2021-06/30/2022	07/01/2022-06/30/2023
Transplanted at this center	23	25
Followed by this center*	174	154
...transplanted at this program	148	138
...transplanted elsewhere	26	16

* 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 07/01/2021 - 06/30/2023

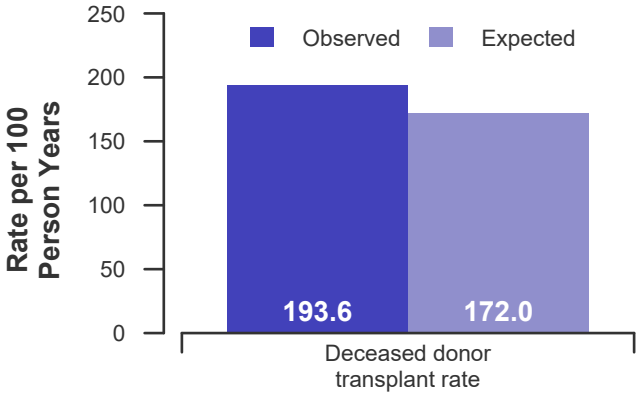


Figure A3. Pre-transplant mortality rates 07/01/2021 - 06/30/2023

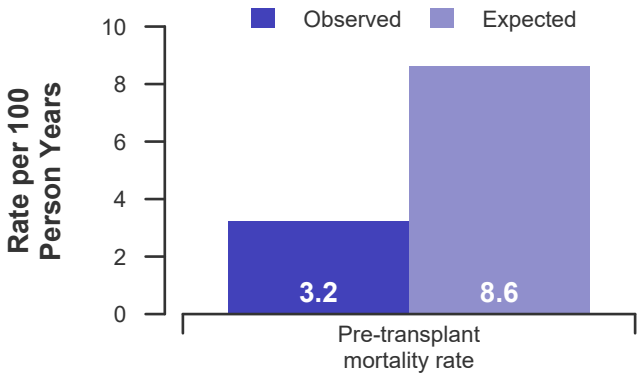


Figure A4. First-year adult graft and patient survival: 07/01/2020 - 12/31/2022

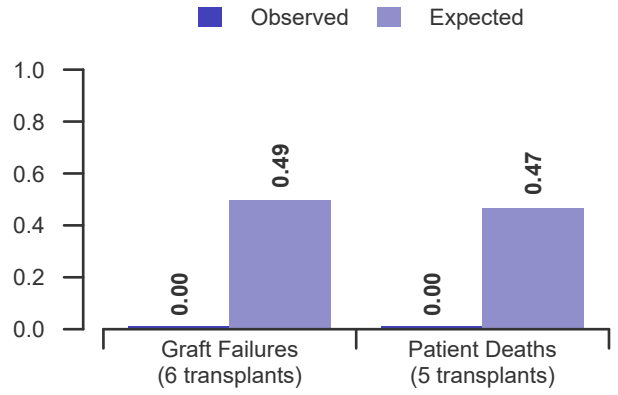
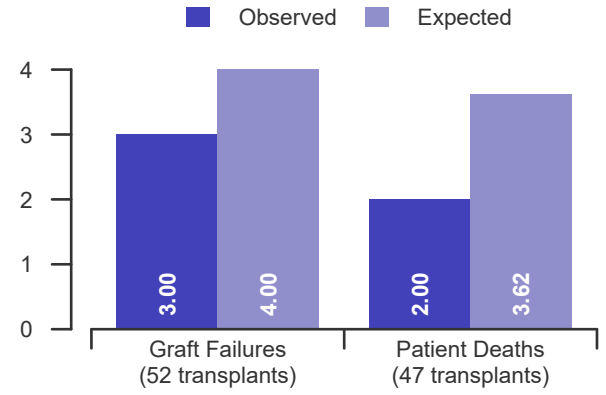


Figure A5. First-year pediatric graft and patient survival: 07/01/2020 - 12/31/2022



B. Waiting List Information

Table B1. Waiting list activity summary: 07/01/2021 - 06/30/2023

Waiting List Registrations	Counts for this center		Activity for 07/01/2022 to 06/30/2023 as percent of registrants on waiting list on 07/01/2022		
	07/01/2021-06/30/2022	07/01/2022-06/30/2023	This Center (%)	OPTN Region (%)	U.S. (%)
On waiting list at start	15	11	100.0	100.0	100.0
Additions					
New listings at this center	23	31	281.8	242.9	159.7
Removals					
Transferred to another center	0	1	9.1	3.9	2.7
Received living donor transplant*	0	0	0.0	0.0	0.0
Received deceased donor transplant*	23	25	227.3	203.9	128.2
Died	0	1	9.1	5.5	5.8
Transplanted at another center	0	0	0.0	0.5	1.0
Deteriorated	1	1	9.1	7.9	7.5
Recovered	1	2	18.2	7.9	6.5
Other reasons	2	1	9.1	11.6	9.7
On waiting list at end of period	11	11	100.0	101.6	98.4

* 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 07/01/2022 and 06/30/2023

Demographic Characteristic	New Waiting List Registrations 07/01/2022 to 06/30/2023 (%)			All Waiting List Registrations on 06/30/2023 (%)		
	This Center (N=31)	OPTN Region (N=923)	U.S. (N=5,535)	This Center (N=11)	OPTN Region (N=386)	U.S. (N=3,410)
All (%)	100.0	100.0	100.0	100.0	100.0	100.0
Ethnicity/Race (%)*						
White	32.3	46.6	55.4	27.3	52.1	56.3
African-American	3.2	12.8	26.0	0.0	11.4	27.7
Hispanic/Latino	51.6	27.8	12.6	63.6	28.2	11.7
Asian	9.7	10.0	4.2	9.1	6.0	2.7
Other	3.2	2.8	1.8	0.0	2.3	1.6
Unknown	0.0	0.0	0.0	0.0	0.0	0.0
Age (%)						
<2 years	25.8	4.2	5.3	36.4	5.2	5.3
2-11 years	29.0	4.3	3.6	27.3	9.3	6.2
12-17 years	29.0	5.1	4.2	36.4	6.0	4.4
18-34 years	16.1	12.5	10.2	0.0	10.6	9.9
35-49 years	0.0	17.6	19.0	0.0	22.3	21.4
50-64 years	0.0	40.1	41.6	0.0	36.3	41.8
65-69 years	0.0	12.6	13.2	0.0	9.8	10.2
70+ years	0.0	3.7	2.9	0.0	0.5	0.8
Gender (%)						
Male	54.8	71.4	71.1	63.6	69.7	74.8
Female	45.2	28.6	28.9	36.4	30.3	25.2

* 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 07/01/2022 and 06/30/2023

Medical Characteristic	New Waiting List Registrations 07/01/2022 to 06/30/2023 (%)			All Waiting List Registrations on 06/30/2023 (%)		
	This Center (N=31)	OPTN Region (N=923)	U.S. (N=5,535)	This Center (N=11)	OPTN Region (N=386)	U.S. (N=3,410)
All (%)	100.0	100.0	100.0	100.0	100.0	100.0
Blood Type (%)						
O	32.3	47.9	46.3	45.5	65.8	61.0
A	54.8	35.9	35.2	27.3	23.1	26.6
B	9.7	13.0	14.2	18.2	9.3	10.8
AB	3.2	3.3	4.4	9.1	1.8	1.7
Unknown	0.0	0.0	0.0	0.0	0.0	0.0
Previous Transplant (%)						
Yes	6.5	4.9	4.0	0.0	6.5	3.9
No	93.5	95.1	96.0	100.0	93.5	96.1
Unknown	0.0	0.0	0.0	0.0	0.0	0.0
Primary Disease (%)						
Cardiomyopathy	51.6	51.1	57.0	36.4	44.0	53.7
Coronary Artery Disease	0.0	25.1	24.5	0.0	22.5	24.9
Retransplant/Graft Failure	3.2	4.1	3.4	0.0	6.0	3.3
Valvular Heart Disease	0.0	2.0	1.0	0.0	3.1	1.0
Congenital Heart Disease	41.9	13.9	11.8	54.5	22.5	15.4
Other	3.2	3.8	2.3	9.1	1.8	1.7
Missing	0.0	0.0	0.0	0.0	0.0	0.0
Medical Urgency Status at Listing (%)						
Status 1A	51.6	7.5	8.0	45.5	6.2	6.3
Status 1B	29.0	3.7	3.0	45.5	6.0	6.5
Status 2	0.0	2.4	2.1	9.1	13.7	9.3
Adult Status 1	0.0	6.5	6.0	0.0	1.6	0.6
Adult Status 2	6.5	27.4	29.1	0.0	5.2	5.8
Adult Status 3	0.0	14.4	8.5	0.0	7.8	4.8
Adult Status 4	9.7	19.0	27.0	0.0	26.9	39.8
Adult Status 5	0.0	4.0	3.0	0.0	5.7	4.2
Adult Status 6	0.0	14.4	12.5	0.0	25.9	20.9
Temporarily Inactive	3.2	0.8	1.0	0.0	1.0	1.7

B. Waiting List Information

Table B4D. Deceased donor transplant rates: 07/01/2021 - 06/30/2023

Waiting List Registrations	This Center	OPO/DSA	Region	U.S.
All Candidates				
Count on waiting list at start*	15	66	384	3,623
Person Years**	24.8	117.9	737.5	6,901.2
Removals for Transplant	48	375	1,441	8,364
Adult (18+) Candidates				
Count on waiting list at start*	4	54	331	3,186
Person Years**	3.8	93.5	604.2	5,937.6
Removals for transpant	8	329	1,273	7,370
Pediatric (<18) Candidates				
Count on waiting list at start*	11	12	53	437
Person Years**	21.0	24.3	133.4	963.6
Removals for transplant	40	46	168	994

* 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.

Figure B1D. Observed and expected deceased donor transplant rates: 07/01/2021 - 06/30/2023

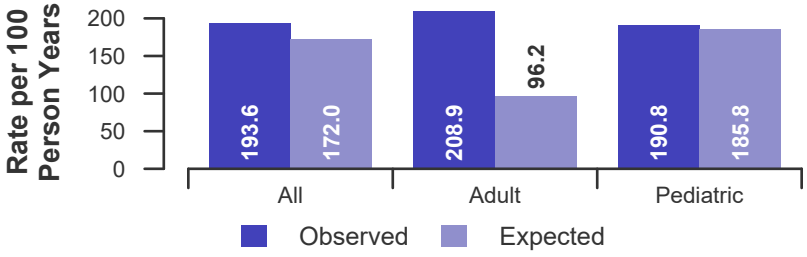


Figure B3D. Observed adult (18+) and pediatric (<18) deceased donor transplant rates: 07/01/2021 - 06/30/2023

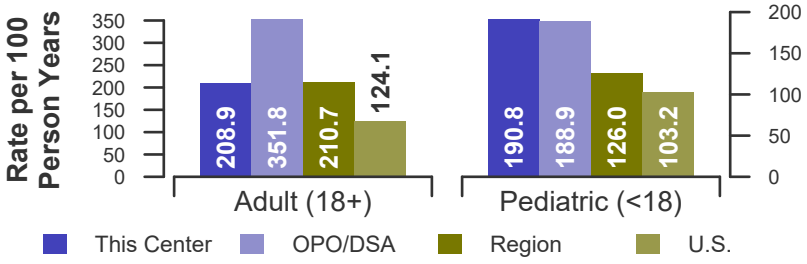
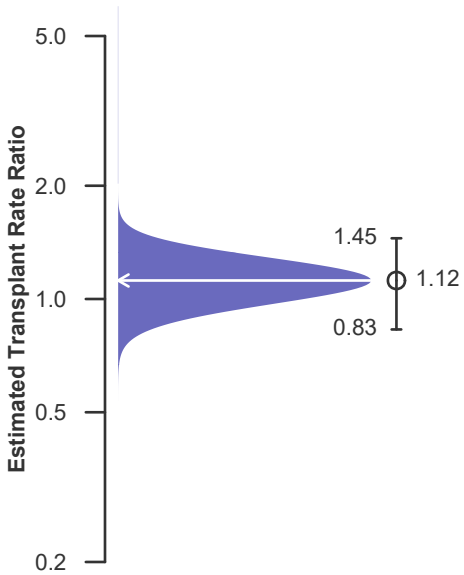


Figure B2D. Deceased donor transplant rate ratio estimate



B. Waiting List Information

Table B5. Pre-transplant mortality rates: 07/01/2021 - 06/30/2023

Waiting List Registrations	This Center	OPO/DSA	Region	U.S.
All Candidates				
Count on waiting list at start*	15	66	384	3,623
Person Years**	31.1	137.2	834.8	7,894.9
Number of deaths	1	20	83	666
Adult (18+) Candidates				
Count on waiting list at start*	4	54	331	3,186
Person Years**	4.8	107.5	684.6	6,825.7
Number of deaths	0	17	70	566
Pediatric (<18) Candidates				
Count on waiting list at start*	11	12	53	437
Person Years**	26.3	29.6	150.1	1,069.2
Number of deaths	1	3	13	100

* 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.

Figure B4. Observed and expected pre-transplant mortality rates: 07/01/2021 - 06/30/2023

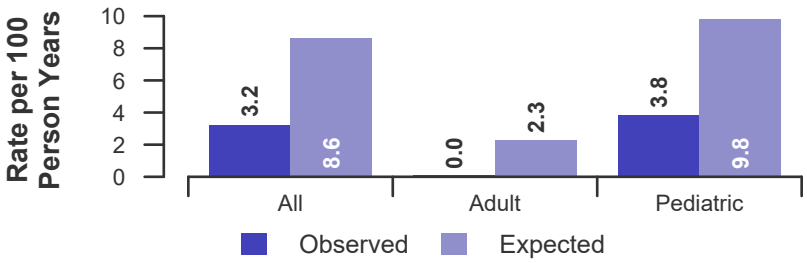


Figure B5. Pre-transplant mortality rate ratio estimate

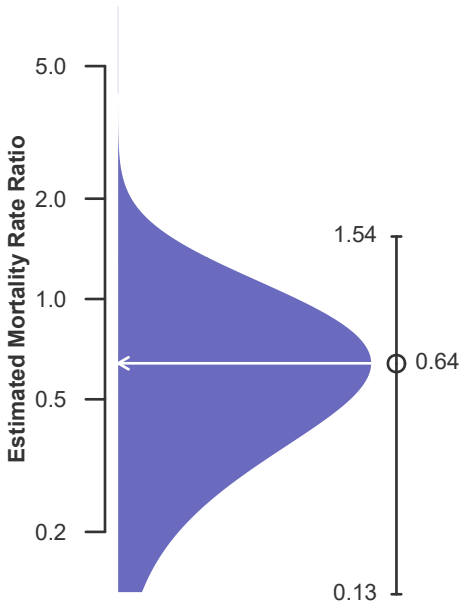
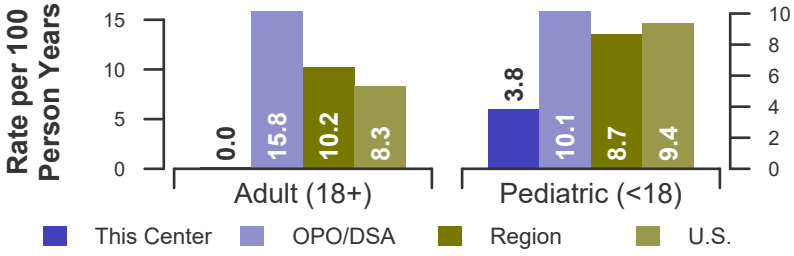


Figure B6. Observed adult (18+) and pediatric (<18) pre-transplant mortality rates: 07/01/2021 - 06/30/2023



B. Waiting List Information

Table B6. Rates of patient mortality after listing: 07/01/2021 - 06/30/2023

Waiting List Registrations	This Center	OPO/DSA	Region	U.S.
All Patients				
Count at risk during the evaluation period	176	1,087	4,630	29,426
Person-years*	241.1	1,421.6	6,134.2	39,287.8
Number of Deaths	7	76	313	2,283
Adult (18+) Patients				
Count at risk during the evaluation period	23	912	3,977	25,269
Person-years*	30.3	1,184.2	5,262.3	33,627.6
Number of Deaths	1	67	278	2,042
Pediatric (<18) Patients				
Count at risk during the evaluation period	153	175	653	4,157
Person-years*	210.8	237.4	871.9	5,660.2
Number of Deaths	6	9	35	241

* Person-years are calculated as days (converted to fractional years). The number of days from 07/01/2021, or from the date of first wait listing until death, reaching 5 years after listing or June 30, 2023.

** 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: 07/01/2021 - 06/30/2023

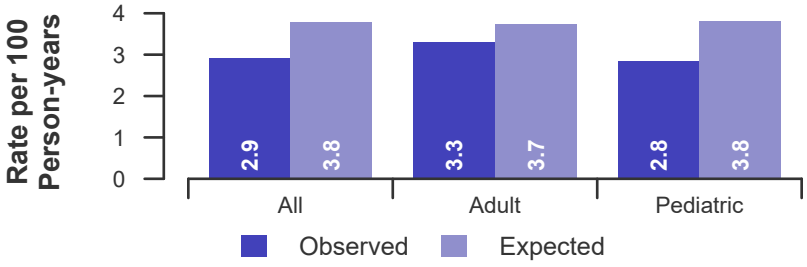


Figure B8. HR estimate of patient mortality after listing

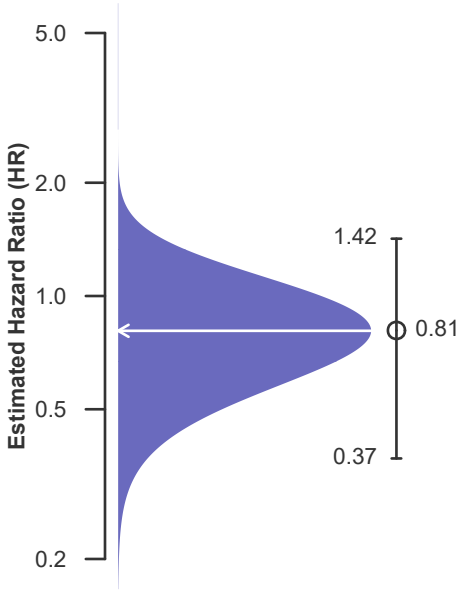
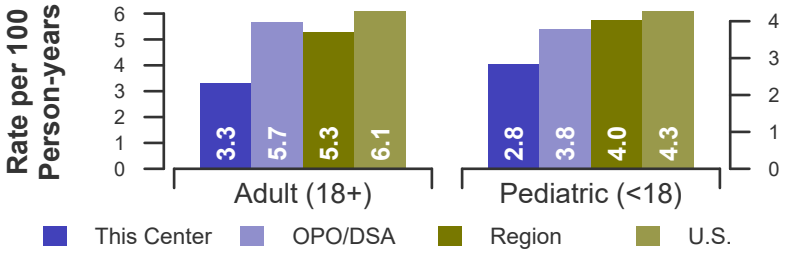


Figure B9. Observed adult (18+) and pediatric (<18) rates of patient mortality after listing: 07/01/2021 - 06/30/2023



B. Waiting List Information

Table B7. Waiting list candidate status after listing
Candidates registered on waiting list between 01/01/2021 and 12/31/2021

Waiting list status (survival status)	This Center (N=32) Months Since Listing			U.S. (N=5,009) Months Since Listing		
	6	12	18	6	12	18
Alive on waiting list (%)	15.6	12.5	0.0	30.0	19.6	13.4
Died on the waiting list without transplant (%)	0.0	0.0	0.0	3.1	3.7	3.9
Removed without transplant (%):						
Condition worsened (status unknown)	0.0	0.0	0.0	2.5	3.1	3.5
Condition improved (status unknown)	0.0	0.0	3.1	0.8	1.7	2.3
Refused transplant (status unknown)	0.0	0.0	0.0	0.2	0.2	0.3
Other	3.1	3.1	6.2	1.7	2.7	3.4
Transplant (living or deceased donor) (%):						
Functioning (alive)	78.1	75.0	50.0	57.5	60.0	41.9
Failed-Retransplanted (alive)	0.0	0.0	0.0	0.1	0.1	0.2
Failed-alive not retransplanted	0.0	0.0	0.0	0.1	0.0	0.0
Died	3.1	6.2	6.2	3.1	5.3	6.7
Status Yet Unknown*	0.0	3.1	34.4	0.4	2.8	23.5
Lost or Transferred (status unknown) (%)	0.0	0.0	0.0	0.5	0.7	1.0
TOTAL (%)	100.0	100.0	100.0	100.0	100.0	100.0
Total % known died on waiting list or after transplant	3.1	6.2	6.2	6.2	9.0	10.6
Total % known died or removed as unstable	3.1	6.2	6.2	8.7	12.1	14.1
Total % removed for transplant	81.2	84.4	90.6	61.2	68.2	72.3
Total % with known functioning transplant (alive)	78.1	75.0	50.0	57.5	60.0	41.9

* 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 07/01/2017 and 06/30/2020

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	77	19.5	70.1	75.3	79.2	13,848	26.4	61.1	67.0	69.3
Ethnicity/Race*										
White	29	17.2	65.5	72.4	79.3	8,362	26.8	62.1	68.1	70.3
African-American	6	33.3	83.3	83.3	83.3	3,323	24.6	57.5	63.4	65.7
Hispanic/Latino	31	12.9	67.7	74.2	77.4	1,455	25.5	61.3	67.0	69.8
Asian	10	40.0	90.0	90.0	90.0	534	36.3	69.7	73.6	75.3
Other	1	0.0	0.0	0.0	0.0	174	19.0	56.3	60.9	64.4
Unknown	0	--	--	--	--	0	--	--	--	--
Age										
<2 years	23	21.7	69.6	69.6	69.6	856	12.7	60.6	61.9	61.9
2-11 years	22	18.2	72.7	77.3	77.3	601	15.3	64.7	71.0	73.9
12-17 years	23	26.1	69.6	78.3	87.0	576	34.5	72.4	78.3	79.9
18-34 years	9	0.0	66.7	77.8	88.9	1,308	28.4	59.0	64.4	67.0
35-49 years	0	--	--	--	--	2,571	26.0	59.1	65.0	67.6
50-64 years	0	--	--	--	--	5,729	26.2	59.2	66.2	68.9
65-69 years	0	--	--	--	--	1,838	31.3	64.1	69.5	71.5
70+ years	0	--	--	--	--	369	38.2	75.6	77.5	77.5
Gender										
Male	41	17.1	68.3	75.6	80.5	9,748	26.1	59.5	65.8	68.5
Female	36	22.2	72.2	75.0	77.8	4,100	27.0	65.0	69.7	71.1

* 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 07/01/2017 and 06/30/2020

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	77	19.5	70.1	75.3	79.2	13,848	26.4	61.1	67.0	69.3
Blood Type										
O	38	18.4	57.9	63.2	71.1	6,153	19.1	51.5	57.8	60.9
A	28	25.0	78.6	85.7	85.7	5,061	31.2	67.6	73.5	75.2
B	9	0.0	88.9	88.9	88.9	2,009	31.8	68.3	73.5	75.3
AB	2	50.0	100.0	100.0	100.0	625	42.9	81.0	83.5	83.8
Previous Transplant										
Yes	6	0.0	66.7	66.7	66.7	529	21.2	56.3	60.5	61.8
No	71	21.1	70.4	76.1	80.3	13,319	26.6	61.3	67.2	69.6
Primary Disease										
Cardiomyopathy	28	25.0	78.6	85.7	85.7	8,055	29.0	63.8	69.6	71.7
Coronary Artery Disease	0	--	--	--	--	3,424	26.5	57.8	64.4	67.4
Retransplant/Graft Failure	6	0.0	66.7	66.7	66.7	459	21.4	58.6	62.7	64.3
Valvular Heart Disease	0	--	--	--	--	130	25.4	53.1	59.2	60.8
Congenital Heart Disease	42	19.0	66.7	71.4	78.6	1,550	15.0	58.2	63.7	65.7
Other	1	0.0	0.0	0.0	0.0	230	21.3	46.5	48.7	50.0
Missing	0	--	--	--	--	0	--	--	--	--
Medical Urgency Status at Listing										
Status 1A	44	29.5	77.3	77.3	77.3	2,584	31.0	70.8	72.6	73.3
Status 1B	10	0.0	70.0	80.0	80.0	2,743	16.3	59.6	66.9	69.6
Status 2	19	10.5	47.4	63.2	78.9	1,701	5.5	42.2	52.1	56.6
Unknown	2	0.0	100.0	100.0	100.0	391	10.5	38.6	44.5	47.6

B. Waiting List Information

Table B10. Time to transplant for waiting list candidates*
Candidates registered on the waiting list between 07/01/2017 and 12/31/2022

	Months to Transplant**			
Percentile	**Center**	**OPO/DSA**	**Region**	**U.S.**
5th	0.1	0.1	0.1	0.1
10th	0.2	0.1	0.2	0.2
25th	0.8	0.3	0.4	0.7
50th (median time to transplant)	3.6	1.1	1.7	3.4
75th	16.2	8.5	12.9	41.6

* 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 06/30/2023. 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: 07/01/2022 - 06/30/2023

Offers Acceptance Characteristics	This Center	OPO/DSA	Region	U.S.
Overall				
Number of Offers	67	880	5,469	66,558
Number of Acceptances	22	165	641	3,903
Expected Acceptances	10.6	74.0	477.1	3,903.3
Offer Acceptance Ratio*	1.91	2.20	1.34	1.00
95% Credible Interval**	[1.22, 2.75]	--	--	--
PHS increased infectious risk				
Number of Offers	15	231	1,495	17,994
Number of Acceptances	5	44	141	796
Expected Acceptances	1.1	15.2	97.8	798.7
Offer Acceptance Ratio*	2.23	2.68	1.43	1.00
95% Credible Interval**	[0.90, 4.16]	--	--	--
Ejection fraction < 60				
Number of Offers	31	391	2,729	35,747
Number of Acceptances	7	75	304	1,960
Expected Acceptances	2.5	30.1	224.5	1,952.3
Offer Acceptance Ratio*	1.98	2.40	1.35	1.00
95% Credible Interval**	[0.91, 3.47]	--	--	--
Donor Age >= 40				
Number of Offers	0	315	2,039	26,890
Number of Acceptances	0	50	144	867
Expected Acceptances	0.0	14.7	99.5	867.3
Offer Acceptance Ratio*	--	3.11	1.44	1.00
95% Credible Interval**	[--, --]	--	--	--
Hard-to-Place Hearts (Over 50 Offers)				
Number of Offers	9	165	1,029	22,777
Number of Acceptances	2	21	36	319
Expected Acceptances	0.1	2.1	12.7	297.2
Offer Acceptance Ratio*	1.94	5.63	2.59	1.07
95% Credible Interval**	[0.53, 4.25]	--	--	--
Donor more than 500 miles away				
Number of Offers	22	416	2,001	22,142
Number of Acceptances	6	64	139	934
Expected Acceptances	1.0	18.0	100.1	940.7
Offer Acceptance Ratio*	2.64	3.30	1.38	0.99
95% Credible Interval**	[1.14, 4.75]	--	--	--

* The offer acceptance ratio estimates the relative offer acceptance practice of Lucile Salter Packard Children's Hospital at Stanford compared to the national offer acceptance practice. A ratio above one indicates the program accepts more offers compared to national offer acceptance practices (e.g., an offer acceptance ratio of 1.25 indicates a center accepts 25% more offers than is expected based on national offer acceptance practices), while a ratio below one indicates the program accepts fewer offers compared to national offer acceptance practices (e.g., an offer acceptance ratio of 0.75 indicates a center accepts 25% fewer offers than is expected based on national offer acceptance practices).
** As an example, the 95% Credible Interval for the overall offer acceptance ratio, [1.22, 2.75], indicates the location of CAPC's true offer acceptance ratio with 95% probability. The best estimate is 91% more likely to accept an offer compared to national acceptance behavior, but CAPC's performance could plausibly range from 22% higher acceptance up to 175%

B. Waiting List Information

Figure B10. Offer acceptance: Overall

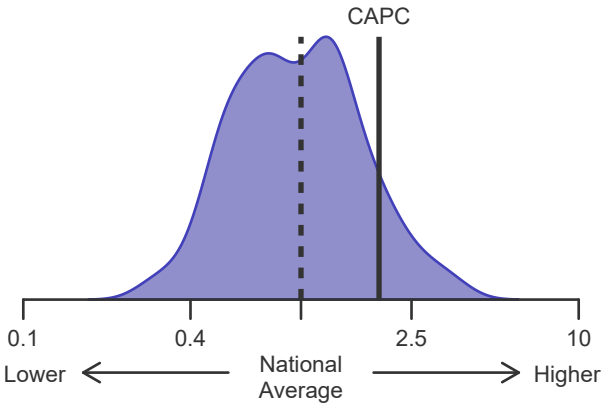


Figure B11. Offer acceptance: PHS increased infectious risk

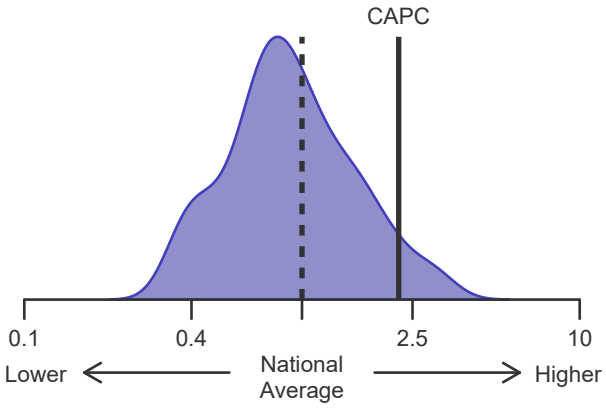


Figure B12. Offer acceptance: Ejection fraction < 60

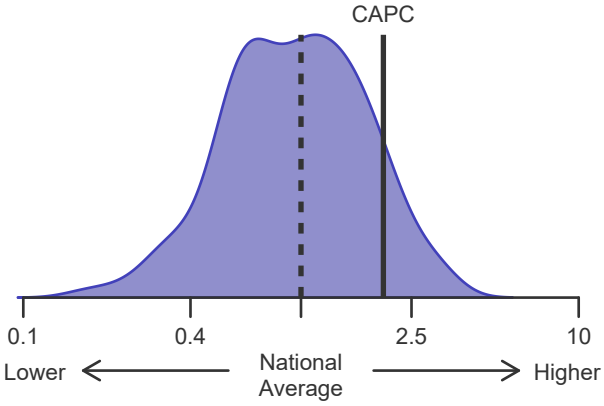


Figure B13. Offer acceptance: Donor age >= 40

This program received no offers.

Figure B14. Offer acceptance: Offer number > 50

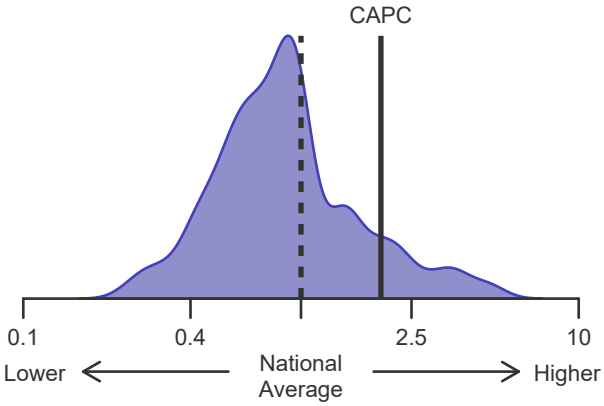
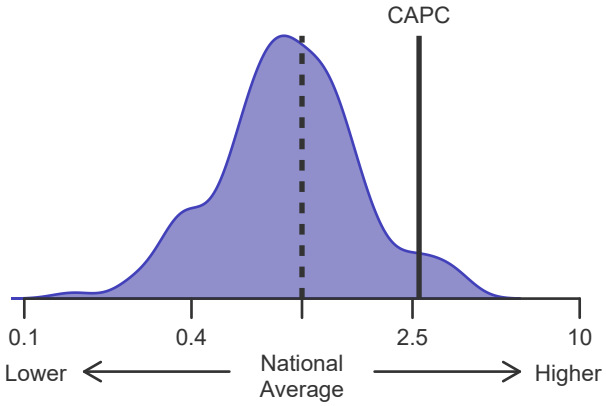


Figure B15. Offer acceptance: Donor more than 500 miles away



C. Transplant Information

Table C1D. Deceased donor transplant recipient demographic characteristics
Patients transplanted between 07/01/2022 and 06/30/2023

Characteristic	Percentage in each category		
	Center (N=25)	Region (N=775)	U.S. (N=4,442)
Ethnicity/Race (%)*			
White	32.0	46.1	55.4
African-American	8.0	14.2	25.6
Hispanic/Latino	52.0	25.9	12.8
Asian	4.0	10.8	4.6
Other	4.0	3.0	1.6
Unknown	0.0	0.0	0.0
Age (%)			
<2 years	16.0	3.0	3.1
2-11 years	32.0	3.5	3.3
12-17	32.0	4.9	4.6
18-34	20.0	12.3	10.6
35-49 years	0.0	18.1	18.5
50-64 years	0.0	39.6	41.9
65-69 years	0.0	13.9	14.2
70+ years	0.0	4.8	3.8
Gender (%)			
Male	44.0	70.7	71.3
Female	56.0	29.3	28.7

* 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 07/01/2022 and 06/30/2023

Characteristic	Percentage in each category		
	Center (N=25)	Region (N=775)	U.S. (N=4,442)
Blood Type (%)			
O	44.0	46.3	43.3
A	52.0	37.2	37.1
B	4.0	13.0	14.9
AB	0.0	3.5	4.7
Previous Transplant (%)			
Yes	12.0	4.4	3.5
No	88.0	95.6	96.5
Body Mass Index (%)			
0-20	60.0	18.6	15.5
21-25	24.0	32.3	29.1
26-30	16.0	28.1	30.1
31-35	0.0	17.4	19.4
36-40	0.0	2.8	4.5
41+	0.0	0.3	0.7
Unknown	0.0	0.5	0.6
Primary Disease (%)			
Cardiomyopathy	48.0	59.5	62.7
Coronary Artery Disease	0.0	24.8	24.0
Retransplant/Graft Failure	0.0	0.0	0.0
Valvular Heart Disease	0.0	0.8	0.8
Congenital Heart Disease	52.0	11.7	10.3
Other	0.0	3.1	1.9
Missing	0.0	0.1	0.2
Medical Urgency Status at Transplant (%)			
Status 1A	40.0	8.6	9.1
Status 1B	40.0	3.0	2.0
Status 2	0.0	0.4	0.3
Adult Status 1	0.0	10.5	11.6
Adult Status 2	12.0	41.5	47.9
Adult Status 3	0.0	13.9	10.5
Adult Status 4	8.0	11.0	12.9
Adult Status 5	0.0	2.5	1.1
Adult Status 6	0.0	8.6	4.6
Recipient Medical Condition at Transplant (%)			
Not Hospitalized	44.0	24.8	25.2
Hospitalized	36.0	20.6	18.8
ICU	20.0	54.6	55.9
Unknown	0.0	0.0	0.1
Recipient Circulatory Support Status at Transplant (%)			
No Support Mechanism	60.0	34.1	24.8
Devices*	40.0	52.8	61.5
Other Support Mechanism	0.0	13.2	13.6
Unknown	0.0	0.0	0.0

* 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 07/01/2022 and 06/30/2023

Donor Characteristic	Percentage in each category		
	Center (N=25)	Region (N=775)	U.S. (N=4,442)
Cause of Death (%)			
Deceased: Stroke	8.0	11.9	10.6
Deceased: MVA	12.0	20.6	18.5
Deceased: Other	80.0	67.5	70.9
Ethnicity/Race (%)*			
White	12.0	38.7	54.5
African-American	20.0	10.3	17.4
Hispanic/Latino	24.0	13.0	7.2
Asian	4.0	4.5	2.0
Other	12.0	2.6	1.6
Not Reported	28.0	30.8	17.4
Age (%)			
<2 years	8.0	2.1	2.3
2-11 years	32.0	3.6	3.1
12-17	12.0	5.0	6.7
18-34	48.0	51.9	50.3
35-49 years	0.0	31.7	33.0
50-64 years	0.0	5.7	4.6
65-69 years	0.0	0.0	0.0
70+ years	0.0	0.0	0.0
Gender (%)			
Male	52.0	74.7	70.9
Female	48.0	25.3	29.1
Blood Type (%)			
O	56.0	56.5	54.1
A	36.0	33.8	33.7
B	8.0	9.0	10.3
AB	0.0	0.6	1.8
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 07/01/2022 and 06/30/2023

Transplant Characteristic	Percentage in each category		
	Center (N=25)	Region (N=775)	U.S. (N=4,442)
Total Ischemic Time (Minutes): Local (%)			
Deceased: 0-90 min	0.0	8.3	11.7
Deceased: 91-180 min	42.9	60.9	56.5
Deceased: 181-270 min	57.1	25.2	25.4
Deceased: 271-360 min	0.0	5.7	3.8
Deceased: 361+ min	0.0	0.0	2.3
Not Reported	0.0	0.0	0.2
Total Ischemic Time (Minutes): Shared (%)			
Deceased: 0-90 min	0.0	1.7	1.4
Deceased: 91-180 min	0.0	9.4	13.5
Deceased: 181-270 min	66.7	56.9	62.7
Deceased: 271-360 min	11.1	22.0	13.2
Deceased: 361+ min	22.2	9.9	8.6
Not Reported	0.0	0.2	0.6
Procedure Type (%)			
Single organ	96.0	84.9	89.2
Multi organ	4.0	15.1	10.8
Donor Location (%)			
Local Donation Service Area (DSA)	28.0	29.7	19.4
Another Donation Service Area (DSA)	72.0	70.3	80.6
Median Time in Hospital After Transplant	39.0 Days	17.0 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 07/01/2020 and 12/31/2022
Deaths and retransplants are considered graft failures

	CAPC	U.S.
Number of transplants evaluated	6	7,536
Estimated probability of surviving with a functioning graft at 1 month & [95% CI] (unadjusted for patient and donor characteristics)	100.00% [100.00%-100.00%]	97.05% [96.67%-97.44%]
Expected probability of surviving with a functioning graft at 1 month (adjusted for patient and donor characteristics)	97.36%	--
Number of observed graft failures (including deaths) during the first month after transplant	0	222
Number of expected graft failures (including deaths) during the first month after transplant	0.16	--
Estimated hazard ratio*	0.93	--
95% credible interval for the hazard ratio**	[0.11, 2.58]	--

* The hazard ratio provides an estimate of how Lucile Salter Packard Children's Hospital at Stanford'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 CAPC's graft failure rate were precisely the expected rate, the estimated hazard ratio would be 1.0.
** The 95% credible interval, [0.11, 2.58], indicates the location of CAPC's true hazard ratio with 95% probability. The best estimate is 7% lower risk of graft failure compared to an average program, but CAPC's performance could plausibly range from 89% reduced risk up to 158% increased risk.

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

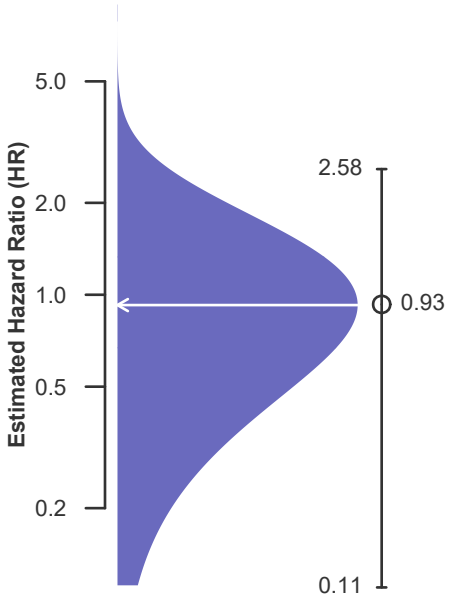
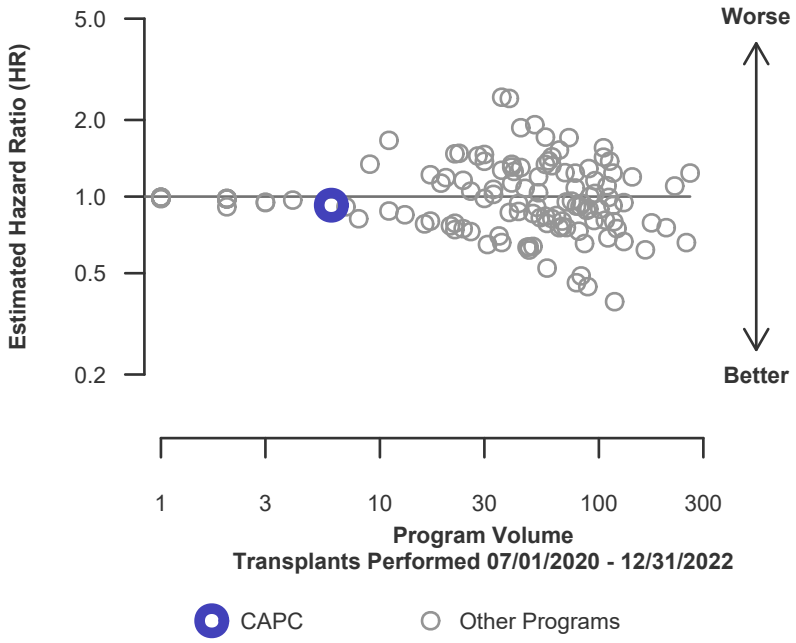


Figure C2D. Adult (18+) 1-month deceased donor graft failure HR program comparison



C. Transplant Information

Table C6D. Adult (18+) 90-Day survival with a functioning deceased donor graft

Single organ transplants performed between 07/01/2020 and 12/31/2022
Deaths and retransplants are considered graft failures

	CAPC	U.S.
Number of transplants evaluated	6	7,536
Estimated probability of surviving with a functioning graft at 90 days & [95% CI] (unadjusted for patient and donor characteristics)	100.00% [100.00%-100.00%]	94.94% [94.45%-95.44%]
Expected probability of surviving with a functioning graft at 90 days (adjusted for patient and donor characteristics)	95.45%	--
Number of observed graft failures (including deaths) during the first 90 days after transplant	0	381
Number of expected graft failures (including deaths) during the first 90 days after transplant	0.28	--
Estimated hazard ratio*	0.88	--
95% credible interval for the hazard ratio**	[0.11, 2.44]	--

* The hazard ratio provides an estimate of how Lucile Salter Packard Children's Hospital at Stanford'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 CAPC's graft failure rate were precisely the expected rate, the estimated hazard ratio would be 1.0.
** The 95% credible interval, [0.11, 2.44], indicates the location of CAPC's true hazard ratio with 95% probability. The best estimate is 12% lower risk of graft failure compared to an average program, but CAPC's performance could plausibly range from 89% reduced risk up to 144% increased risk.

Figure C3D. Adult (18+) 90-Day deceased donor graft failure HR estimate

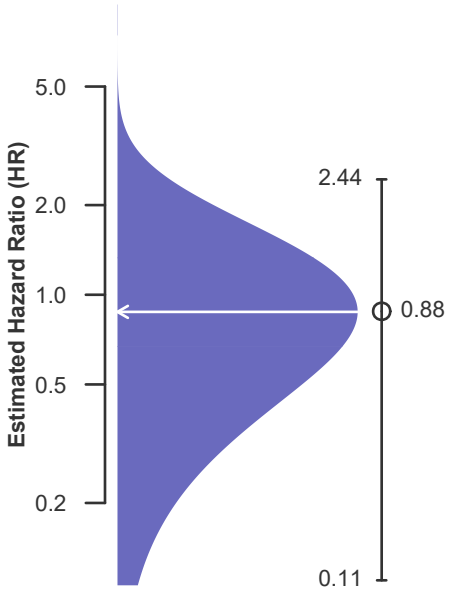
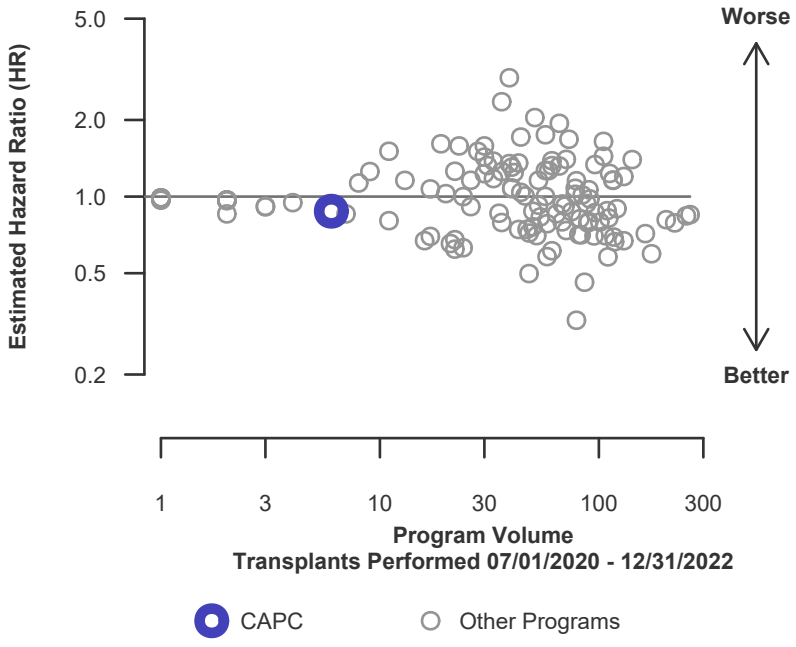


Figure C4D. Adult (18+) 90-Day deceased donor graft failure HR program comparison



C. Transplant Information

Table C7D. Adult (18+) 1-year survival with a functioning deceased donor graft

Single organ transplants performed between 07/01/2020 and 12/31/2022
Deaths and retransplants are considered graft failures

	CAPC	U.S.
Number of transplants evaluated	6	7,536
Estimated probability of surviving with a functioning graft at 1 year & [95% CI] (unadjusted for patient and donor characteristics)	100.00% [100.00%-100.00%]	91.24% [90.58%-91.90%]
Expected probability of surviving with a functioning graft at 1 year (adjusted for patient and donor characteristics)	92.12%	--
Number of observed graft failures (including deaths) during the first year after transplant	0	630
Number of expected graft failures (including deaths) during the first year after transplant	0.49	--
Estimated hazard ratio*	0.80	--
95% credible interval for the hazard ratio**	[0.10, 2.23]	--

* The hazard ratio provides an estimate of how Lucile Salter Packard Children's Hospital at Stanford'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 CAPC's graft failure rate were precisely the expected rate, the estimated hazard ratio would be 1.0.
** The 95% credible interval, [0.10, 2.23], indicates the location of CAPC's true hazard ratio with 95% probability. The best estimate is 20% lower risk of graft failure compared to an average program, but CAPC's performance could plausibly range from 90% reduced risk up to 123% increased risk.

Figure C5D. Adult (18+) 1-year deceased donor graft failure HR estimate

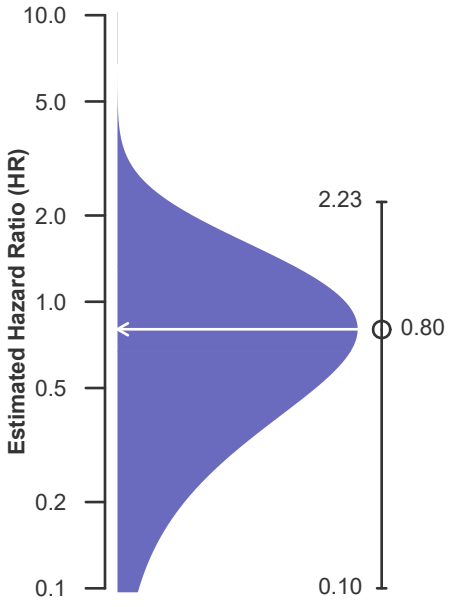
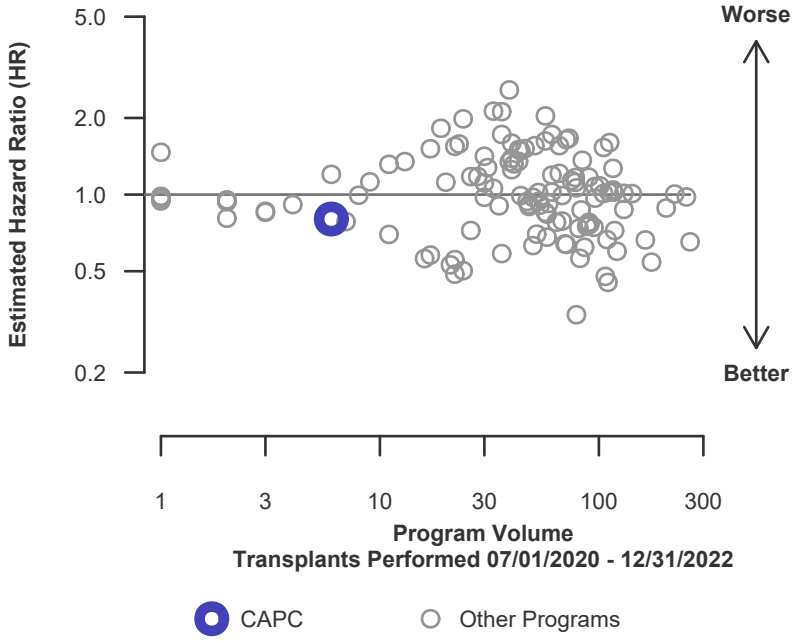


Figure C6D. Adult (18+) 1-year deceased donor graft failure HR program comparison



C. Transplant Information

Table C8D. Adult (18+) 1-year Conditional survival with a functioning deceased donor graft

Single organ transplants performed between 07/01/2020 and 12/31/2022
Deaths and retransplants are considered graft failures

	CAPC	U.S.
Number of transplants evaluated	6	7,155
Estimated probability of surviving with a functioning graft at 1 year, among patients with a functioning graft at day 90 & [95% CI] (unadjusted for patient and donor characteristics)	100.00% [100.00%-100.00%]	96.10% [95.91%-96.29%]
Expected probability of surviving with a functioning graft at 1 year, among patients with a functioning graft at day 90 (adjusted for patient and donor characteristics)	96.51%	--
Number of observed graft failures (including deaths) from day 91 through day 365 after transplant	0	249
Number of expected graft failures (including deaths) from day 91 through day 365 after transplant	0.21	--
Estimated hazard ratio*	0.90	--
95% credible interval for the hazard ratio**	[0.11, 2.52]	--

* The hazard ratio provides an estimate of how Lucile Salter Packard Children's Hospital at Stanford'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 CAPC's graft failure rate were precisely the expected rate, the estimated hazard ratio would be 1.0.
** The 95% credible interval, [0.11, 2.52], indicates the location of CAPC's true hazard ratio with 95% probability. The best estimate is 10% lower risk of graft failure compared to an average program, but CAPC's performance could plausibly range from 89% reduced risk up to 152% increased risk.

Figure C7D. Adult (18+) 1-year Conditional deceased donor graft failure HR estimate

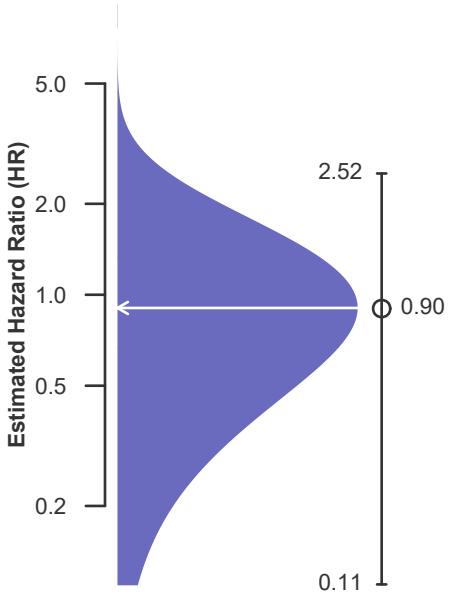
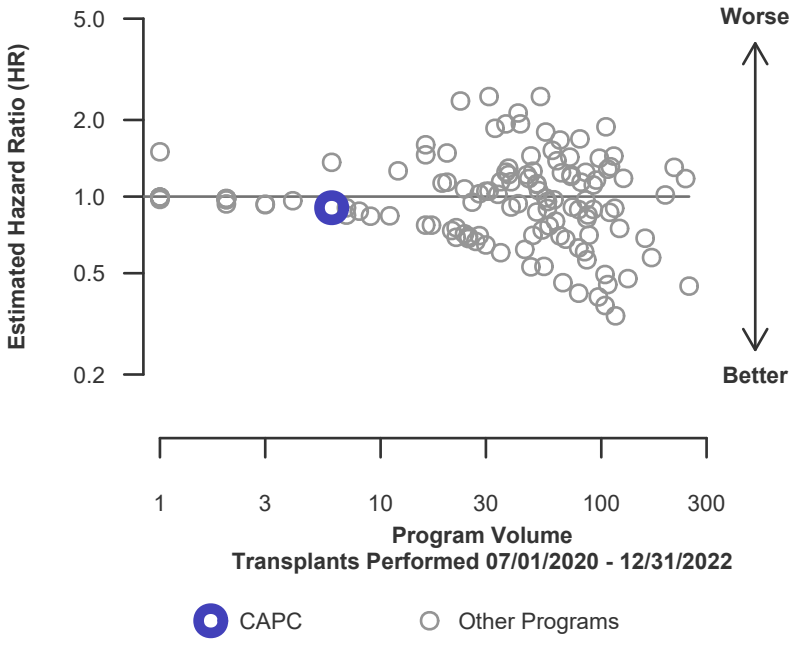


Figure C8D. Adult (18+) 1-year Conditional deceased donor graft failure HR program comparison



C. Transplant Information

Table C9D. Adult (18+) 3-year survival with a functioning deceased donor graft

Single organ transplants performed between 01/01/2018 and 03/12/2020, and 06/13/2020 and 06/30/2020
Deaths and retransplants are considered graft failures
Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	CAPC	U.S.
Number of transplants evaluated	4	6,166
Estimated probability of surviving with a functioning graft at 3 years & [95% CI] (unadjusted for patient and donor characteristics)	100.00% [100.00%-100.00%]	84.99% [82.35%-87.72%]
Expected probability of surviving with a functioning graft at 3 years (adjusted for patient and donor characteristics)	84.35%	--
Number of observed graft failures (including deaths) during the first 3 years after transplant	0	543
Number of expected graft failures (including deaths) during the first 3 years after transplant	0.36	--
Estimated hazard ratio*	0.85	--
95% credible interval for the hazard ratio**	[0.10, 2.36]	--

* The hazard ratio provides an estimate of how Lucile Salter Packard Children's Hospital at Stanford'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 CAPC's graft failure rate were precisely the expected rate, the estimated hazard ratio would be 1.0.
** The 95% credible interval, [0.10, 2.36], indicates the location of CAPC's true hazard ratio with 95% probability. The best estimate is 15% lower risk of graft failure compared to an average program, but CAPC's performance could plausibly range from 90% reduced risk up to 136% increased risk.

Figure C9D. Adult (18+) 3-year deceased donor graft failure HR estimate

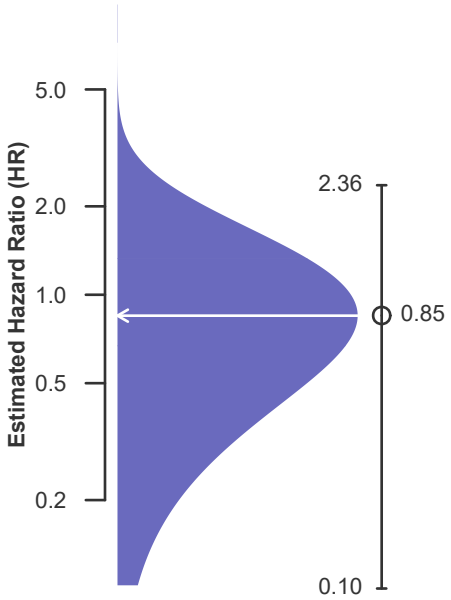
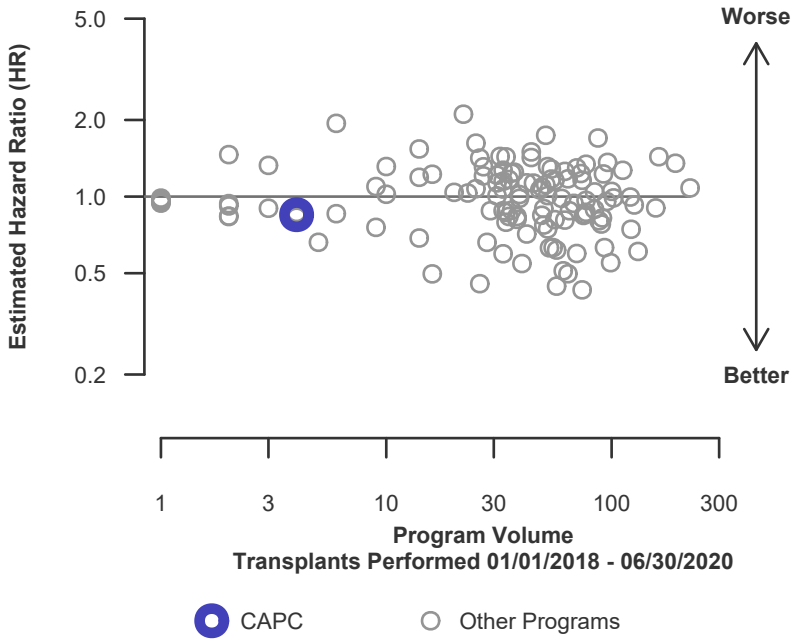


Figure C10D. Adult (18+) 3-year deceased donor graft failure HR program comparison



C. Transplant Information

Table C10D. Pediatric (<18) 1-month survival with a functioning deceased donor graft

Single organ transplants performed between 07/01/2020 and 12/31/2022
Deaths and retransplants are considered graft failures

	CAPC	U.S.
Number of transplants evaluated	52	1,231
Estimated probability of surviving with a functioning graft at 1 month & [95% CI] (unadjusted for patient and donor characteristics)	100.00% [100.00%-100.00%]	97.89% [97.09%-98.69%]
Expected probability of surviving with a functioning graft at 1 month (adjusted for patient and donor characteristics)	97.75%	--
Number of observed graft failures (including deaths) during the first month after transplant	0	26
Number of expected graft failures (including deaths) during the first month after transplant	1.19	--
Estimated hazard ratio*	0.63	--
95% credible interval for the hazard ratio**	[0.08, 1.75]	--

* The hazard ratio provides an estimate of how Lucile Salter Packard Children's Hospital at Stanford'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 CAPC's graft failure rate were precisely the expected rate, the estimated hazard ratio would be 1.0.
** The 95% credible interval, [0.08, 1.75], indicates the location of CAPC's true hazard ratio with 95% probability. The best estimate is 37% lower risk of graft failure compared to an average program, but CAPC's performance could plausibly range from 92% reduced risk up to 75% increased risk.

Figure C11D. Pediatric (<18) 1-month deceased donor graft failure HR estimate

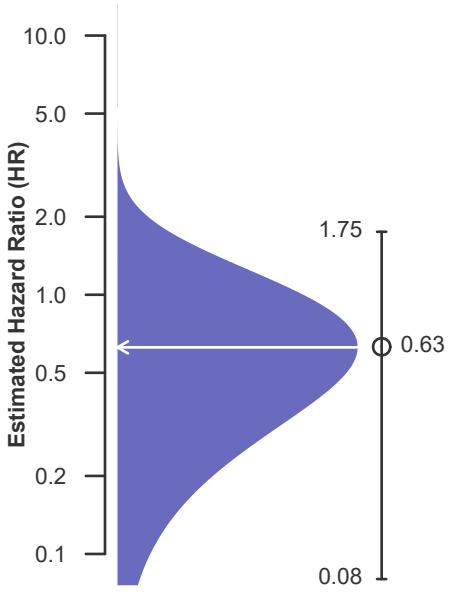
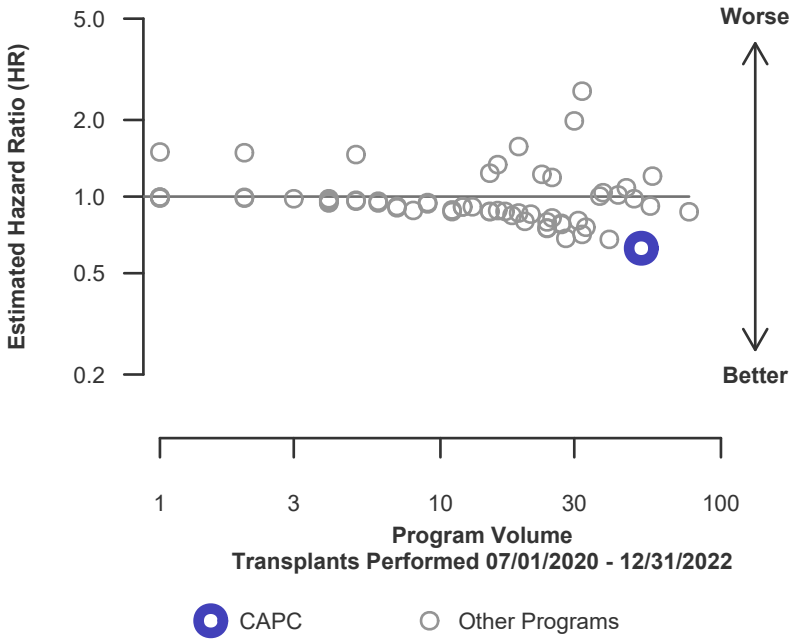


Figure C12D. Pediatric (<18) 1-month deceased donor graft failure HR program comparison



C. Transplant Information

Table C11D. Pediatric (<18) 90-Day survival with a functioning deceased donor graft

Single organ transplants performed between 07/01/2020 and 12/31/2022
Deaths and retransplants are considered graft failures

	CAPC	U.S.
Number of transplants evaluated	52	1,231
Estimated probability of surviving with a functioning graft at 90 days & [95% CI] (unadjusted for patient and donor characteristics)	98.08% [94.41%-100.00%]	95.61% [94.48%-96.76%]
Expected probability of surviving with a functioning graft at 90 days (adjusted for patient and donor characteristics)	95.32%	--
Number of observed graft failures (including deaths) during the first 90 days after transplant	1	54
Number of expected graft failures (including deaths) during the first 90 days after transplant	2.43	--
Estimated hazard ratio*	0.68	--
95% credible interval for the hazard ratio**	[0.14, 1.63]	--

* The hazard ratio provides an estimate of how Lucile Salter Packard Children's Hospital at Stanford'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 CAPC's graft failure rate were precisely the expected rate, the estimated hazard ratio would be 1.0.
** The 95% credible interval, [0.14, 1.63], indicates the location of CAPC's true hazard ratio with 95% probability. The best estimate is 32% lower risk of graft failure compared to an average program, but CAPC's performance could plausibly range from 86% reduced risk up to 63% increased risk.

Figure C13D. Pediatric (<18) 90-Day deceased donor graft failure HR estimate

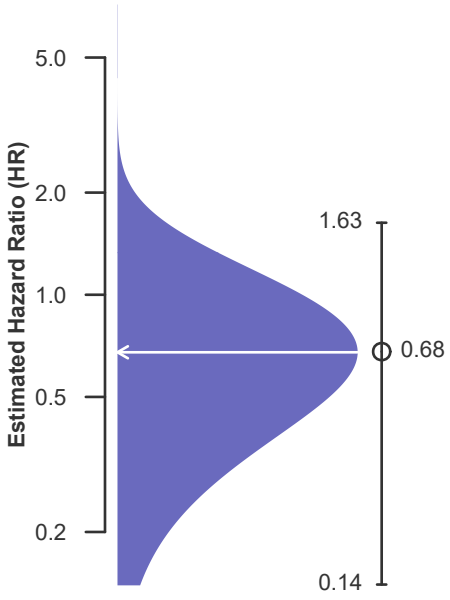
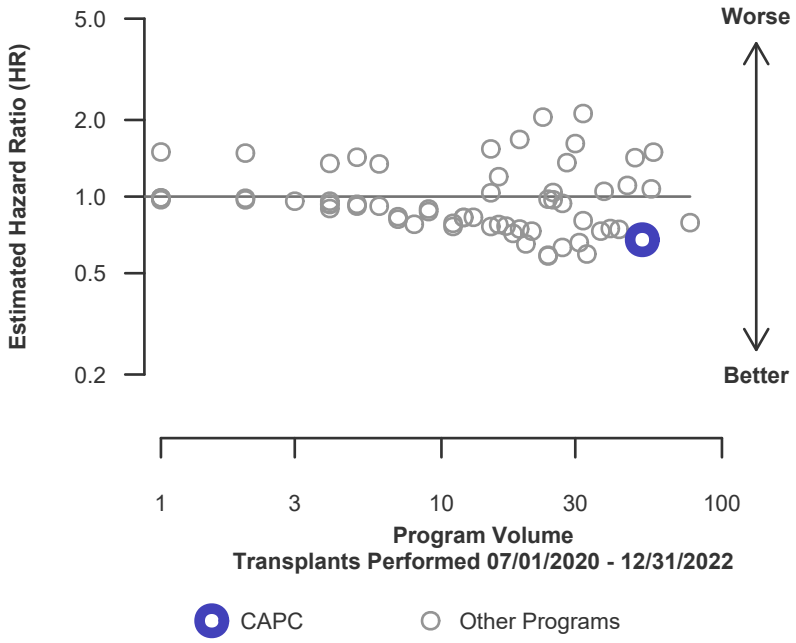


Figure C14D. Pediatric (<18) 90-Day deceased donor graft failure HR program comparison



C. Transplant Information

Table C12D. Pediatric (<18) 1-year survival with a functioning deceased donor graft

Single organ transplants performed between 07/01/2020 and 12/31/2022
Deaths and retransplants are considered graft failures

	CAPC	U.S.
Number of transplants evaluated	52	1,231
Estimated probability of surviving with a functioning graft at 1 year & [95% CI] (unadjusted for patient and donor characteristics)	93.69% [86.96%-100.00%]	92.33% [90.81%-93.88%]
Expected probability of surviving with a functioning graft at 1 year (adjusted for patient and donor characteristics)	91.78%	--
Number of observed graft failures (including deaths) during the first year after transplant	3	90
Number of expected graft failures (including deaths) during the first year after transplant	4.00	--
Estimated hazard ratio*	0.83	--
95% credible interval for the hazard ratio**	[0.27, 1.71]	--

* The hazard ratio provides an estimate of how Lucile Salter Packard Children's Hospital at Stanford'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 CAPC's graft failure rate were precisely the expected rate, the estimated hazard ratio would be 1.0.
** The 95% credible interval, [0.27, 1.71], indicates the location of CAPC's true hazard ratio with 95% probability. The best estimate is 17% lower risk of graft failure compared to an average program, but CAPC's performance could plausibly range from 73% reduced risk up to 71% increased risk.

Figure C15D. Pediatric (<18) 1-year deceased donor graft failure HR estimate

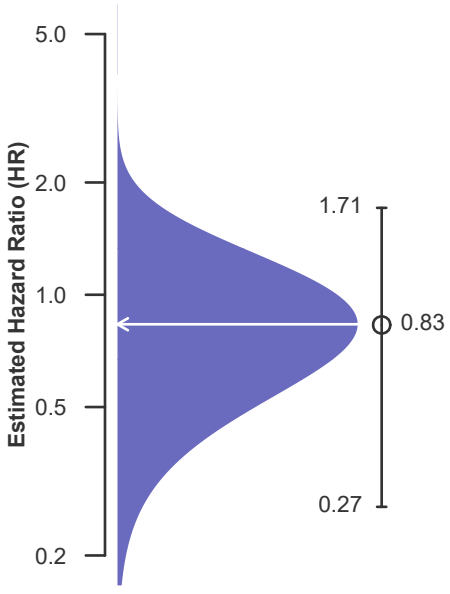
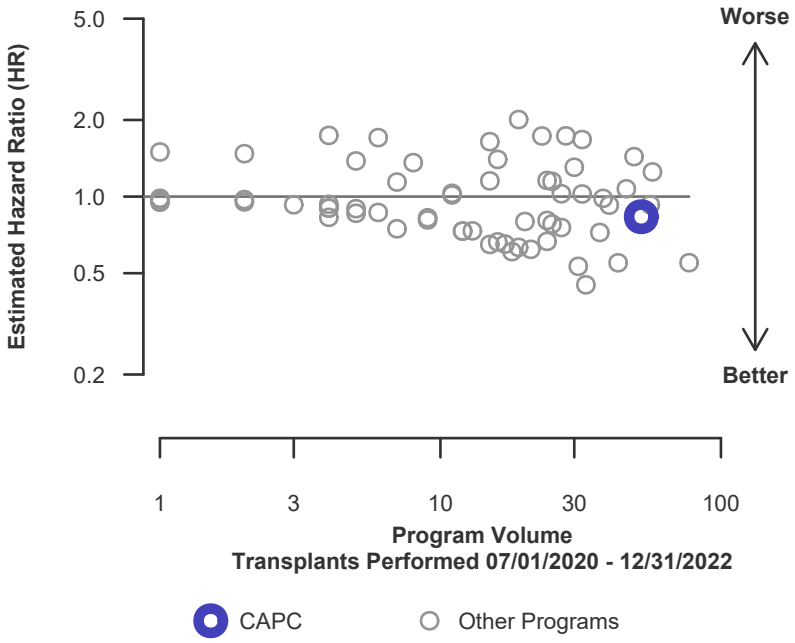


Figure C16D. Pediatric (<18) 1-year deceased donor graft failure HR program comparison



C. Transplant Information

Table C13D. Pediatric (<18) 1-year Conditional survival with a functioning deceased donor graft

Single organ transplants performed between 07/01/2020 and 12/31/2022
Deaths and retransplants are considered graft failures

	CAPC	U.S.
Number of transplants evaluated	51	1,177
Estimated probability of surviving with a functioning graft at 1 year, among patients with a functioning graft at day 90 & [95% CI] (unadjusted for patient and donor characteristics)	95.53% [92.11%-100.00%]	96.57% [96.12%-97.02%]
Expected probability of surviving with a functioning graft at 1 year, among patients with a functioning graft at day 90 (adjusted for patient and donor characteristics)	96.29%	--
Number of observed graft failures (including deaths) from day 91 through day 365 after transplant	2	36
Number of expected graft failures (including deaths) from day 91 through day 365 after transplant	1.57	--
Estimated hazard ratio*	1.12	--
95% credible interval for the hazard ratio**	[0.31, 2.46]	--

* The hazard ratio provides an estimate of how Lucile Salter Packard Children's Hospital at Stanford'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 CAPC's graft failure rate were precisely the expected rate, the estimated hazard ratio would be 1.0.
** The 95% credible interval, [0.31, 2.46], indicates the location of CAPC's true hazard ratio with 95% probability. The best estimate is 12% higher risk of graft failure compared to an average program, but CAPC's performance could plausibly range from 69% reduced risk up to 146% increased risk.

Figure C17D. Pediatric (<18) 1-year Conditional deceased donor graft failure HR estimate

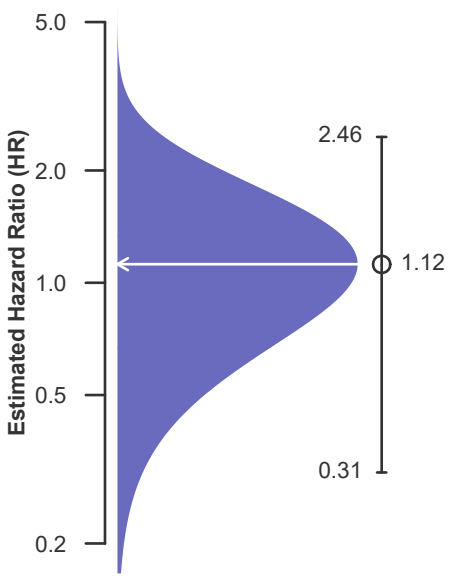
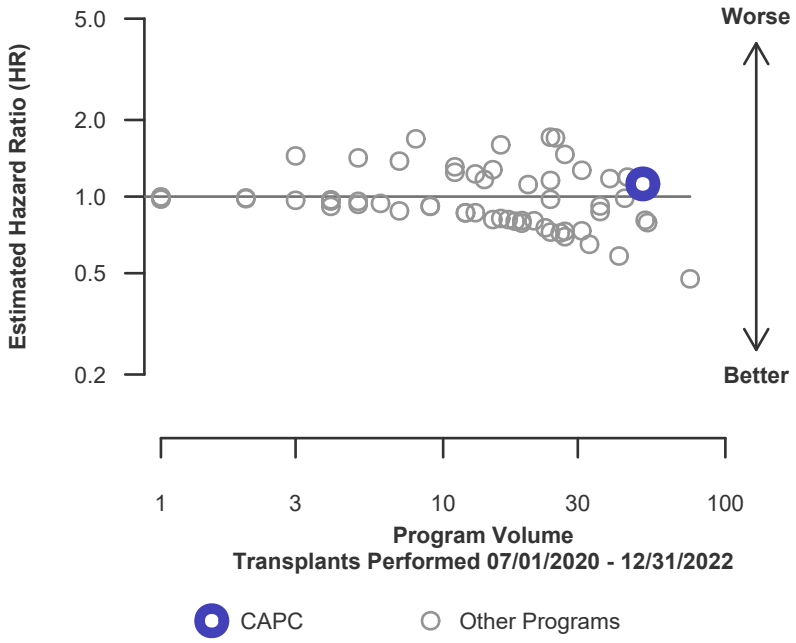


Figure C18D. Pediatric (<18) 1-year Conditional deceased donor graft failure HR program comparison



C. Transplant Information

Table C14D. Pediatric (<18) 3-year survival with a functioning deceased donor graft

Single organ transplants performed between 01/01/2018 and 03/12/2020, and 06/13/2020 and 06/30/2020
Deaths and retransplants are considered graft failures
Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	CAPC	U.S.
Number of transplants evaluated	43	1,112
Estimated probability of surviving with a functioning graft at 3 years & [95% CI] (unadjusted for patient and donor characteristics)	94.23% [86.74%-100.00%]	88.90% [86.33%-91.54%]
Expected probability of surviving with a functioning graft at 3 years (adjusted for patient and donor characteristics)	88.60%	--
Number of observed graft failures (including deaths) during the first 3 years after transplant	2	87
Number of expected graft failures (including deaths) during the first 3 years after transplant	3.03	--
Estimated hazard ratio*	0.80	--
95% credible interval for the hazard ratio**	[0.22, 1.74]	--

* The hazard ratio provides an estimate of how Lucile Salter Packard Children's Hospital at Stanford'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 CAPC's graft failure rate were precisely the expected rate, the estimated hazard ratio would be 1.0.
** The 95% credible interval, [0.22, 1.74], indicates the location of CAPC's true hazard ratio with 95% probability. The best estimate is 20% lower risk of graft failure compared to an average program, but CAPC's performance could plausibly range from 78% reduced risk up to 74% increased risk.

Figure C19D. Pediatric (<18) 3-year deceased donor graft failure HR estimate

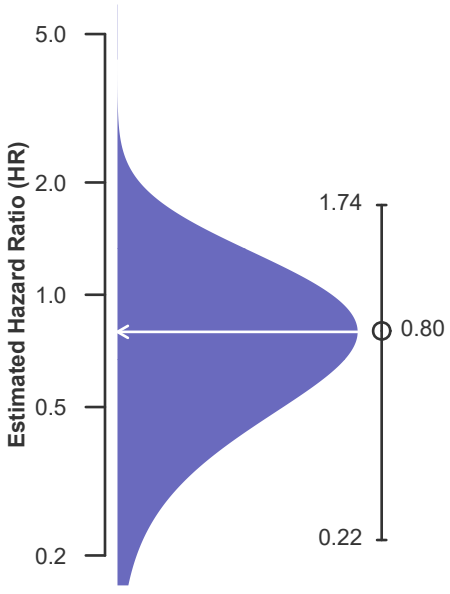
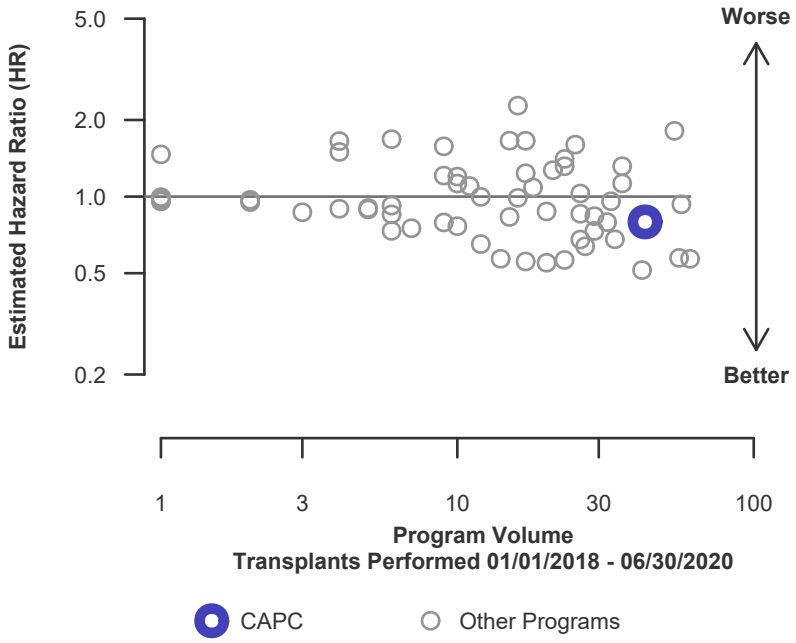


Figure C20D. Pediatric (<18) 3-year deceased donor graft failure HR program comparison



C. Transplant Information

Table C15D. Adult (18+) 1-month patient survival (deceased donor graft recipients)

Single organ transplants performed between 07/01/2020 and 12/31/2022
Retransplants excluded

	CAPC	U.S.
Number of transplants evaluated	5	7,365
Estimated probability of surviving at 1 month & [95% CI] (unadjusted for patient and donor characteristics)	100.00% [100.00%-100.00%]	97.30% [96.93%-97.67%]
Expected probability of surviving at 1 month (adjusted for patient and donor characteristics)	97.15%	--
Number of observed deaths during the first month after transplant	0	199
Number of expected deaths during the first month after transplant	0.15	--
Estimated hazard ratio*	0.93	--
95% credible interval for the hazard ratio**	[0.11, 2.60]	--

* The hazard ratio provides an estimate of how Lucile Salter Packard Children's Hospital at Stanford'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 CAPC's patient death rate were precisely the expected rate, the estimated hazard ratio would be 1.0.
** The 95% credible interval, [0.11, 2.60], indicates the location of CAPC's true hazard ratio with 95% probability. The best estimate is 7% lower risk of patient death compared to an average program, but CAPC's performance could plausibly range from 89% reduced risk up to 160% increased risk.

Figure C21D. Adult (18+) 1-month patient death HR estimate (deceased donor grafts)

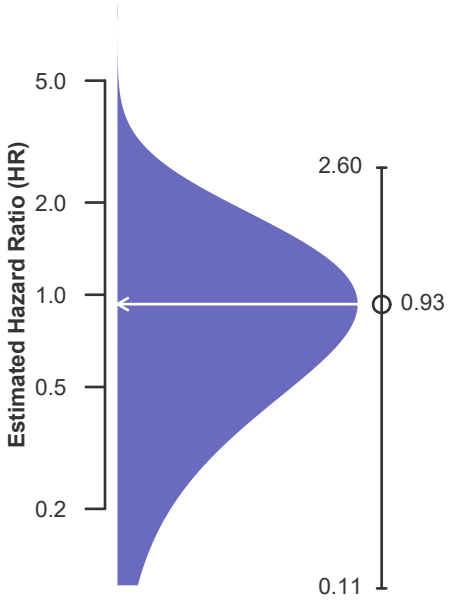
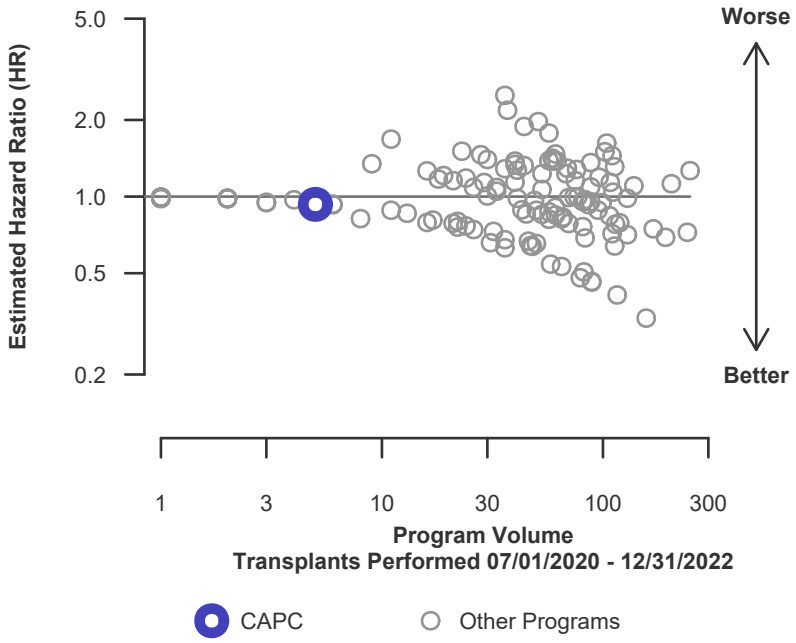


Figure C22D. Adult (18+) 1-month patient death HR program comparison (deceased donor grafts)



C. Transplant Information

Table C16D. Adult (18+) 1-year patient survival (deceased donor graft recipients)

Single organ transplants performed between 07/01/2020 and 12/31/2022
Retransplants excluded

	CAPC	U.S.
Number of transplants evaluated	5	7,365
Estimated probability of surviving at 1 year & [95% CI] (unadjusted for patient and donor characteristics)	100.00% [100.00%-100.00%]	91.57% [90.92%-92.23%]
Expected probability of surviving at 1 year (adjusted for patient and donor characteristics)	91.18%	--
Number of observed deaths during the first year after transplant	0	592
Number of expected deaths during the first year after transplant	0.47	--
Estimated hazard ratio*	0.81	--
95% credible interval for the hazard ratio**	[0.10, 2.26]	--

* The hazard ratio provides an estimate of how Lucile Salter Packard Children's Hospital at Stanford'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 CAPC's patient death rate were precisely the expected rate, the estimated hazard ratio would be 1.0.
** The 95% credible interval, [0.10, 2.26], indicates the location of CAPC's true hazard ratio with 95% probability. The best estimate is 19% lower risk of patient death compared to an average program, but CAPC's performance could plausibly range from 90% reduced risk up to 126% increased risk.

Figure C23D. Adult (18+) 1-year patient death HR estimate (deceased donor grafts)

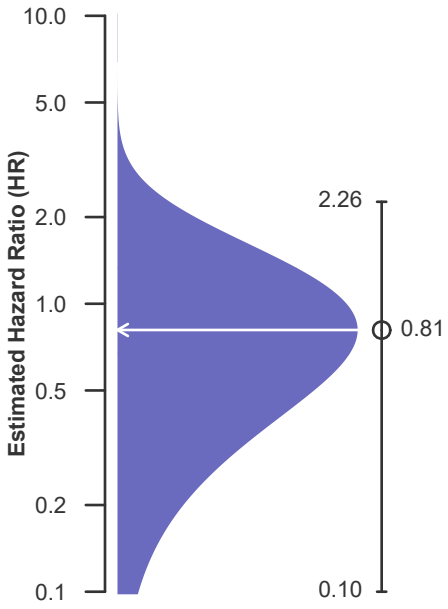
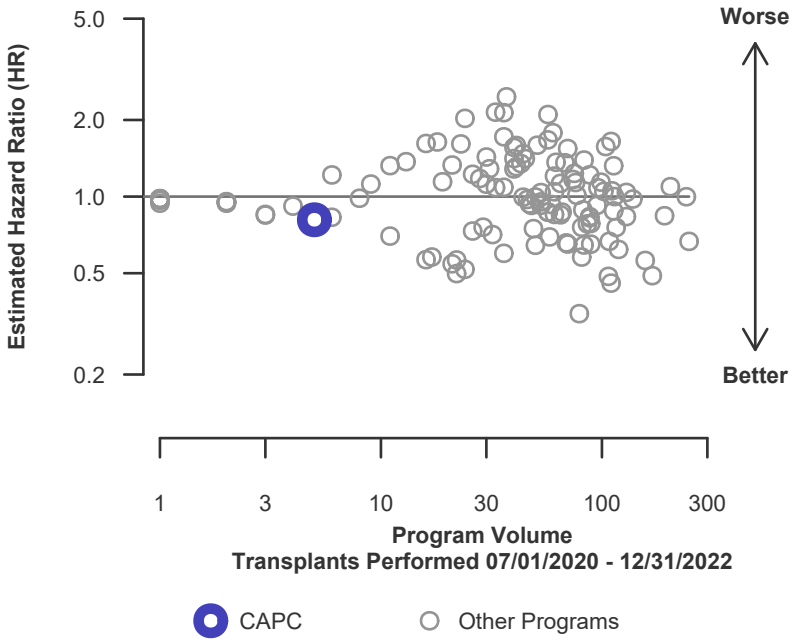


Figure C24D. Adult (18+) 1-year patient death HR program comparison (deceased donor grafts)



C. Transplant Information

Table C17D. Adult (18+) 3-year patient survival (deceased donor graft recipients)

Single organ transplants performed between 01/01/2018 and 03/12/2020, and 06/13/2020 and 06/30/2020
Retransplants excluded
Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	CAPC	U.S.
Number of transplants evaluated	4	6,004
Estimated probability of surviving at 3 years & [95% CI] (unadjusted for patient and donor characteristics)	100.00% [100.00%-100.00%]	85.92% [83.28%-88.64%]
Expected probability of surviving at 3 years (adjusted for patient and donor characteristics)	85.60%	--
Number of observed deaths during the first 3 years after transplant	0	499
Number of expected deaths during the first 3 years after transplant	0.33	--
Estimated hazard ratio*	0.86	--
95% credible interval for the hazard ratio**	[0.10, 2.39]	--

* The hazard ratio provides an estimate of how Lucile Salter Packard Children's Hospital at Stanford'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 CAPC's patient death rate were precisely the expected rate, the estimated hazard ratio would be 1.0.
** The 95% credible interval, [0.10, 2.39], indicates the location of CAPC's true hazard ratio with 95% probability. The best estimate is 14% lower risk of patient death compared to an average program, but CAPC's performance could plausibly range from 90% reduced risk up to 139% increased risk.

Figure C25D. Adult (18+) 3-year patient death HR estimate (deceased donor grafts)

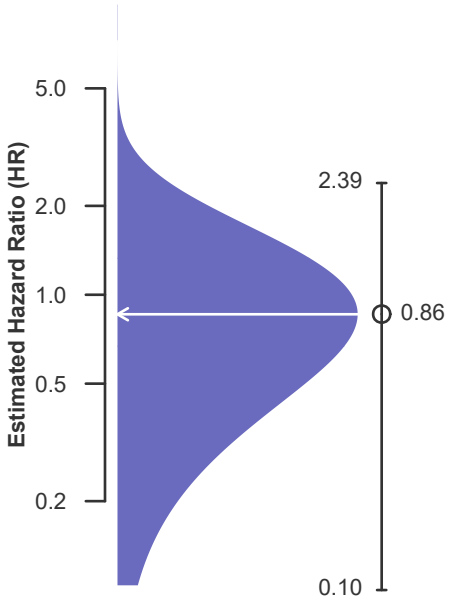
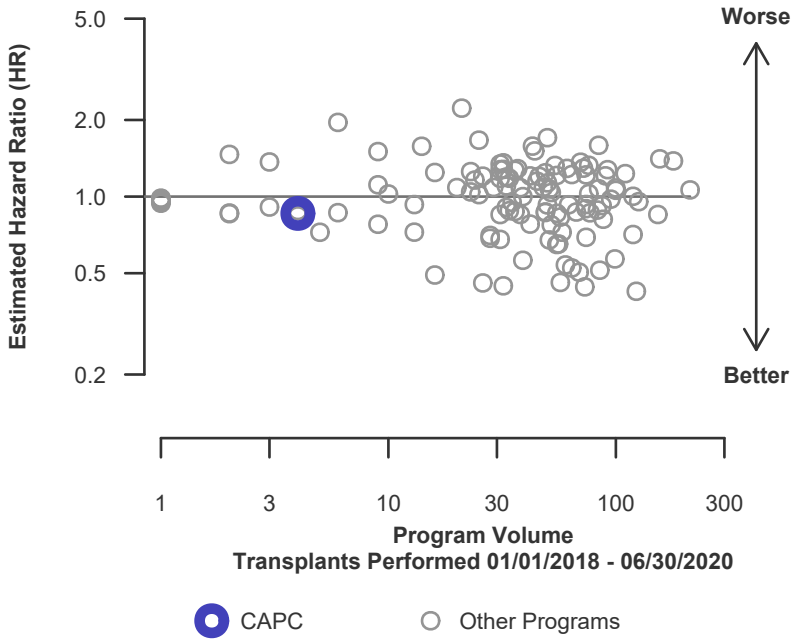


Figure C26D. Adult (18+) 3-year patient death HR program comparison (deceased donor grafts)



C. Transplant Information

Table C18D. Pediatric (<18) 1-month patient survival (deceased donor graft recipients)

Single organ transplants performed between 07/01/2020 and 12/31/2022
Retransplants excluded

	CAPC	U.S.
Number of transplants evaluated	47	1,173
Estimated probability of surviving at 1 month & [95% CI] (unadjusted for patient and donor characteristics)	100.00% [100.00%-100.00%]	97.87% [97.05%-98.70%]
Expected probability of surviving at 1 month (adjusted for patient and donor characteristics)	97.72%	--
Number of observed deaths during the first month after transplant	0	25
Number of expected deaths during the first month after transplant	1.09	--
Estimated hazard ratio*	0.65	--
95% credible interval for the hazard ratio**	[0.08, 1.80]	--

* The hazard ratio provides an estimate of how Lucile Salter Packard Children's Hospital at Stanford'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 CAPC's patient death rate were precisely the expected rate, the estimated hazard ratio would be 1.0.
** The 95% credible interval, [0.08, 1.80], indicates the location of CAPC's true hazard ratio with 95% probability. The best estimate is 35% lower risk of patient death compared to an average program, but CAPC's performance could plausibly range from 92% reduced risk up to 80% increased risk.

Figure C27D. Pediatric (<18) 1-month patient death HR estimate (deceased donor grafts)

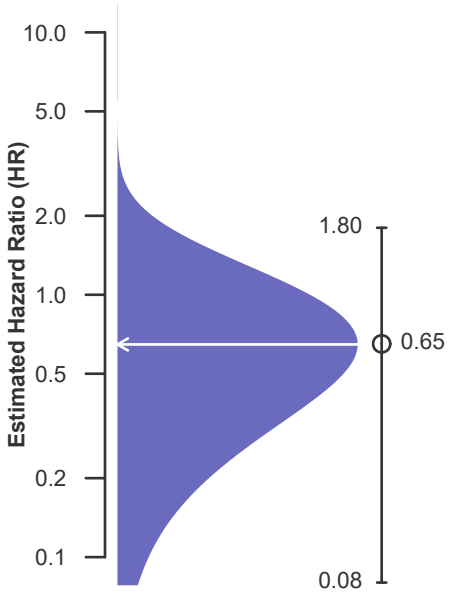
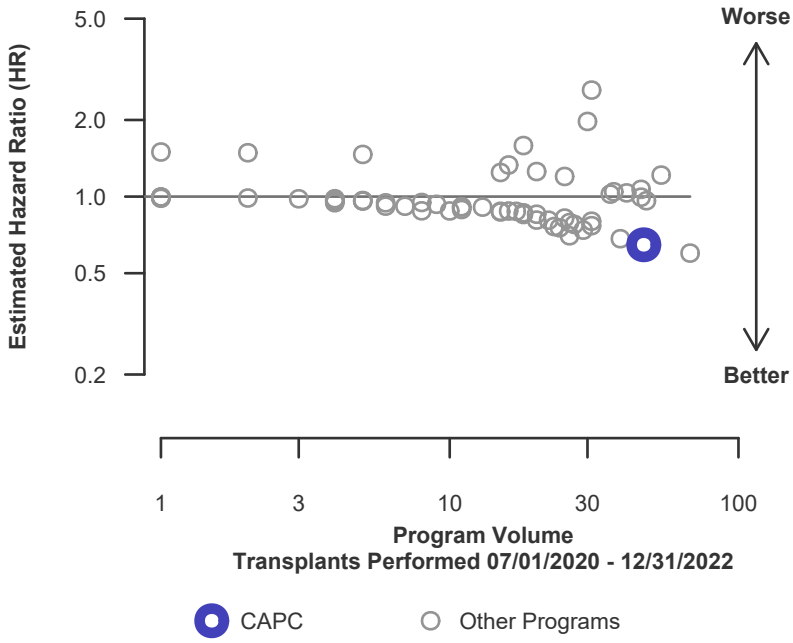


Figure C28D. Pediatric (<18) 1-month patient death HR program comparison (deceased donor grafts)



C. Transplant Information

Table C19D. Pediatric (<18) 1-year patient survival (deceased donor graft recipients)

Single organ transplants performed between 07/01/2020 and 12/31/2022
Retransplants excluded

	CAPC	U.S.
Number of transplants evaluated	47	1,173
Estimated probability of surviving at 1 year & [95% CI] (unadjusted for patient and donor characteristics)	95.74% [90.14%-100.00%]	92.31% [90.76%-93.90%]
Expected probability of surviving at 1 year (adjusted for patient and donor characteristics)	91.74%	--
Number of observed deaths during the first year after transplant	2	86
Number of expected deaths during the first year after transplant	3.62	--
Estimated hazard ratio*	0.71	--
95% credible interval for the hazard ratio**	[0.19, 1.56]	--

* The hazard ratio provides an estimate of how Lucile Salter Packard Children's Hospital at Stanford'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 CAPC's patient death rate were precisely the expected rate, the estimated hazard ratio would be 1.0.
** The 95% credible interval, [0.19, 1.56], indicates the location of CAPC's true hazard ratio with 95% probability. The best estimate is 29% lower risk of patient death compared to an average program, but CAPC's performance could plausibly range from 81% reduced risk up to 56% increased risk.

Figure C29D. Pediatric (<18) 1-year patient death HR estimate (deceased donor grafts)

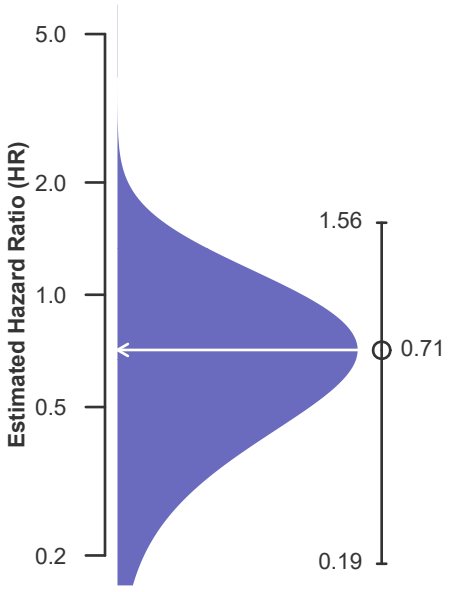
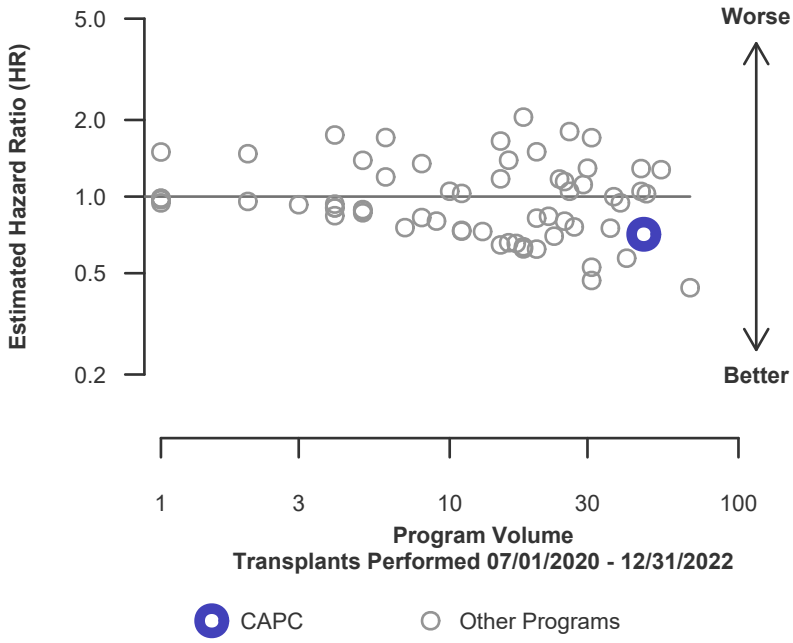


Figure C30D. Pediatric (<18) 1-year patient death HR program comparison (deceased donor grafts)



C. Transplant Information

Table C20D. Pediatric (<18) 3-year patient survival (deceased donor graft recipients)

Single organ transplants performed between 01/01/2018 and 03/12/2020, and 06/13/2020 and 06/30/2020
Retransplants excluded
Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	CAPC	U.S.
Number of transplants evaluated	39	1,066
Estimated probability of surviving at 3 years & [95% CI] (unadjusted for patient and donor characteristics)	93.79% [85.79%-100.00%]	89.10% [86.50%-91.78%]
Expected probability of surviving at 3 years (adjusted for patient and donor characteristics)	89.36%	--
Number of observed deaths during the first 3 years after transplant	2	82
Number of expected deaths during the first 3 years after transplant	2.74	--
Estimated hazard ratio*	0.84	--
95% credible interval for the hazard ratio**	[0.23, 1.85]	--

* The hazard ratio provides an estimate of how Lucile Salter Packard Children's Hospital at Stanford'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 CAPC's patient death rate were precisely the expected rate, the estimated hazard ratio would be 1.0.
** The 95% credible interval, [0.23, 1.85], indicates the location of CAPC's true hazard ratio with 95% probability. The best estimate is 16% lower risk of patient death compared to an average program, but CAPC's performance could plausibly range from 77% reduced risk up to 85% increased risk.

Figure C31D. Pediatric (<18) 3-year patient death HR estimate (deceased donor grafts)

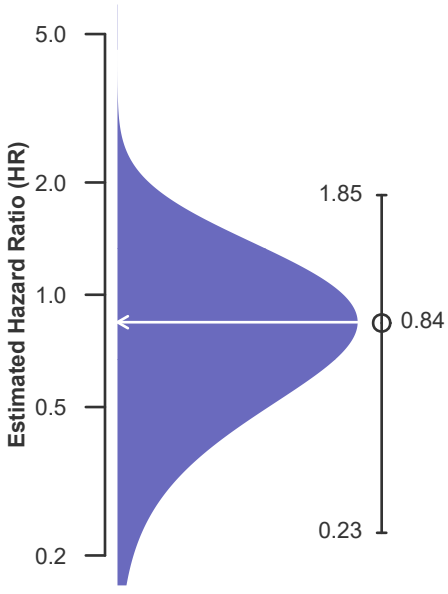
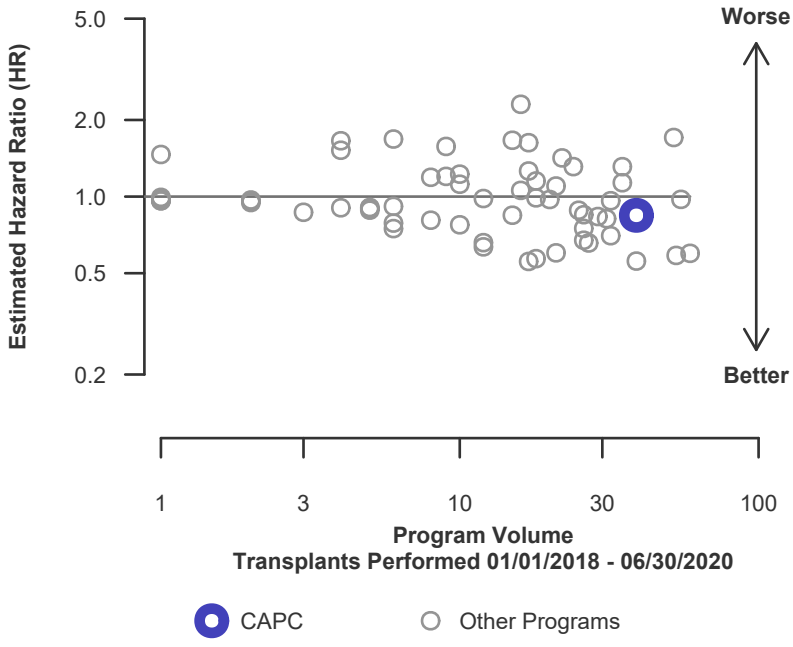


Figure C32D. Pediatric (<18) 3-year patient death HR program comparison (deceased donor grafts)



C. Transplant Information

Table C21. Multi-organ transplant graft survival: 07/01/2020 - 12/31/2022

Adult (18+) Transplants

Transplant Type	Transplants Performed		First-Year Outcomes: Heart Graft Failures		First-Year Outcomes: Estimated Heart Graft Survival	
	CAPC-TX1	USA	CAPC-TX1	USA	CAPC-TX1	USA
Liver-Heart	2	138	0	26	100.0%	81.2%

Pediatric (<18) Transplants

Transplant Type	Transplants Performed		First-Year Outcomes: Heart Graft Failures		First-Year Outcomes: Estimated Heart Graft Survival	
	CAPC-TX1	USA	CAPC-TX1	USA	CAPC-TX1	USA
Heart-Lung	2	7	0	3	100.0%	57.1%
Liver-Heart	4	15	1	5	75.0%	66.7%

Table C22. Multi-organ transplant patient survival: 07/01/2020 - 12/31/2022

Adult (18+) Transplants

Transplant Type	Transplants Performed		First-Year Outcomes: Patient Deaths		First-Year Outcomes: Estimated Patient Survival	
	CAPC-TX1	USA	CAPC-TX1	USA	CAPC-TX1	USA
Liver-Heart	2	138	0	26	100.0%	81.2%

Pediatric (<18) Transplants

Transplant Type	Transplants Performed		First-Year Outcomes: Patient Deaths		First-Year Outcomes: Estimated Patient Survival	
	CAPC-TX1	USA	CAPC-TX1	USA	CAPC-TX1	USA
Heart-Lung	2	7	0	3	100.0%	57.1%
Liver-Heart	4	15	1	5	75.0%	66.7%