



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, 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 and January 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 July 2023 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 July 2023 reporting cycle. These changes will remain in force beyond the July 2023 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 1/1/2020-3/12/2020, follow-up through 3/12/2020. Transplants 6/13/2020-6/30/2022, follow-up through 12/31/2022.

3-year Patient and Graft Survival Evaluations: Transplants 7/1/2017-12/31/2019; follow-up through 3/12/2020.

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

Days after listing (and before transplant) between 1/1/2021 and 12/31/2022.



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

Candidates on the waitlist 1/1/2021-12/31/2022.

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

Evaluation period: 1/1/2021-12/31/2022.

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

Offers received 1/1/2022-12/31/2022.

These decisions will apply to the evaluations released in the SRTR's semi-annual program-specific reports scheduled for release on July 6, 2023. 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 January 2024.

As with the January 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 kidney transplant program at University of Colorado Hospital/Health Science 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 transplant rate at this program was 37.3 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. Transplant rates are also presented excluding transplants from a living donor (Table B4D and Figures B1D-B3D). Please refer to the PSR Technical Methods documentation available at <http://www.srtr.org> for more detail regarding how expected rates are calculated.

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

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

Table B7 presents information on what happens to candidates on the waiting list by three different time points after listing: 6 months, 12 months, and 18 months. The table displays percentages of candidates who have died, been removed from the waiting list, been transplanted, or been transferred or lost-to-follow-up. Tables B8 and B9 provide more detail regarding how many candidates have received a deceased donor transplant by certain time points during the first 3 years after being put on the transplant waiting list. Each row of Tables B8 and B9 presents the percent of candidates who received a deceased donor transplant by each time point. Table B10 presents data on the time it took for different percentages of patients to be transplanted for candidates added to the list between 01/01/2017 and 06/30/2022. The time it took for 5% (the 5th percentile) of patients to receive a transplant at this program was 1 months. If "Not Observed" is displayed in the table, then too few candidates received transplants before 12/31/2022 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 - B14 similarly show offer acceptance rates for subsets



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of offers.

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.

Table D1 shows the rates of follow-up for living donors.

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



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A. Program Summary

Figure A1. Waiting list and transplant activity

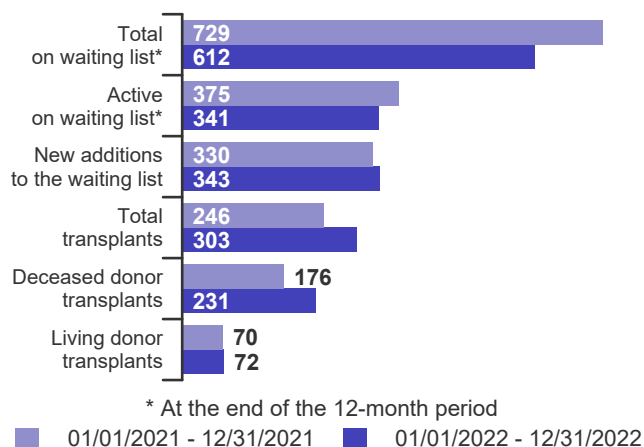


Table A1. Census of transplant recipients

Recipients	01/01/2021-12/31/2021	01/01/2022-12/31/2022
Transplanted at this center	246	303
Followed by this center*	1,837	1,801
...transplanted at this program	1,755	1,712
...transplanted elsewhere	82	89

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

Figure A2. Transplant rates
01/01/2021 - 12/31/2022

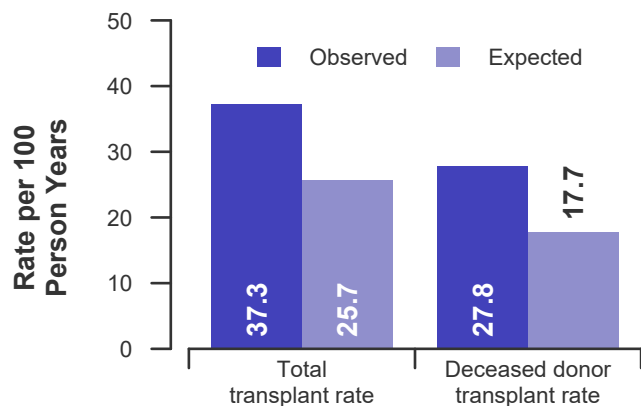


Figure A3. Pre-transplant mortality rates
01/01/2021 - 12/31/2022

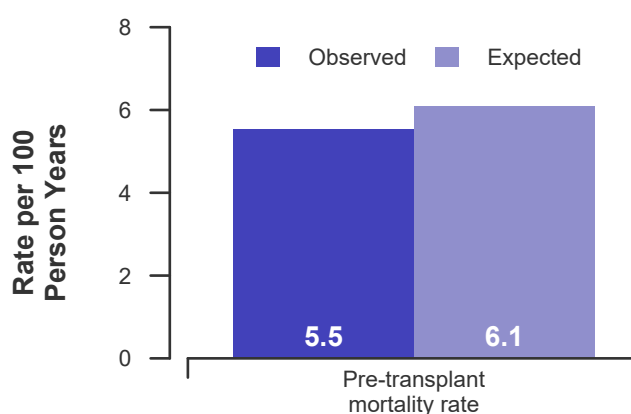


Figure A4. First-year adult graft and patient survival:
01/01/2020 - 03/12/2020, 06/13/2020 - 06/30/2022

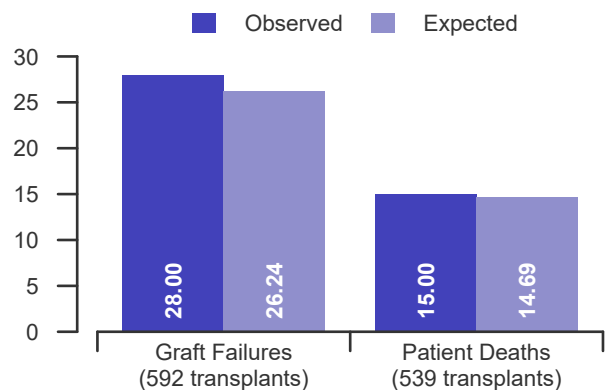


Figure A5. First-year pediatric graft & patient survival:
01/01/2020 - 03/12/2020, 06/13/2020 - 06/30/2022

This center did not perform any transplants relevant to this figure during 01/01/2020-06/30/2022



B. Waiting List Information

Table B1. Waiting list activity summary: 01/01/2021 - 12/31/2022

Waiting List Registrations	Counts for this center		Activity for 01/01/2022 to 12/31/2022 as percent of registrants on waiting list on 01/01/2022		
	01/01/2021-12/31/2021	01/01/2022-12/31/2022	This Center (%)	OPTN Region (%)	U.S. (%)
On waiting list at start	840	729	100.0	100.0	100.0
Additions					
New listings at this center	330	343	47.1	61.7	45.7
Removals					
Transferred to another center	6	3	0.4	1.2	0.9
Received living donor transplant*	68	70	9.6	9.9	6.1
Received deceased donor transplant*	176	231	31.7	31.2	20.4
Died	42	23	3.2	4.1	4.6
Transplanted at another center	21	15	2.1	3.6	4.3
Deteriorated	50	47	6.4	6.6	4.6
Recovered	5	4	0.5	0.8	0.3
Other reasons	73	67	9.2	5.7	5.1
On waiting list at end of period	729	612	84.0	98.7	99.3

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



B. Waiting List Information

Table B2. Demographic characteristics of waiting list candidates**Candidates registered on the waiting list between 01/01/2022 and 12/31/2022**

Demographic Characteristic	New Waiting List Registrations 01/01/2022 to 12/31/2022 (%)			All Waiting List Registrations on 12/31/2022 (%)		
	This Center (N=343)	OPTN Region (N=2,311)	U.S. (N=43,798)	This Center (N=612)	OPTN Region (N=3,698)	U.S. (N=95,236)
All (%)	100.0	100.0	100.0	100.0	100.0	100.0
Ethnicity/Race (%)*						
White	50.7	60.1	40.3	51.5	59.5	35.4
African-American	11.1	20.4	29.7	12.7	22.2	31.5
Hispanic/Latino	32.4	12.3	19.8	27.5	11.5	21.2
Asian	5.0	5.1	8.5	6.0	4.8	10.1
Other	0.9	2.1	1.7	2.3	2.0	1.8
Unknown	0.0	0.0	0.0	0.0	0.0	0.0
Age (%)						
<2 years	0.0	0.4	0.2	0.0	0.3	0.1
2-11 years	0.0	1.2	0.9	0.0	1.1	0.6
12-17 years	0.0	1.6	1.5	0.0	1.5	1.1
18-34 years	16.0	10.5	10.2	10.5	8.7	9.6
35-49 years	30.3	23.4	24.1	27.3	22.4	26.1
50-64 years	37.0	37.8	40.9	43.0	40.8	43.7
65-69 years	9.6	13.5	13.4	13.2	14.9	12.4
70+ years	7.0	11.7	8.9	6.0	10.4	6.5
Gender (%)						
Male	57.1	61.8	62.0	61.6	61.9	62.2
Female	42.9	38.2	38.0	38.4	38.1	37.8

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



B. Waiting List Information

Table B3. Medical characteristics of waiting list candidates

Candidates registered on the waiting list between 01/01/2022 and 12/31/2022

Medical Characteristic	New Waiting List Registrations 01/01/2022 to 12/31/2022 (%)			All Waiting List Registrations on 12/31/2022 (%)		
	This Center (N=343)	OPTN Region (N=2,311)	U.S. (N=43,798)	This Center (N=612)	OPTN Region (N=3,698)	U.S. (N=95,236)
All (%)	100.0	100.0	100.0	100.0	100.0	100.0
Blood Type (%)						
O	49.9	49.0	49.4	60.6	55.5	54.4
A	35.3	34.8	31.9	26.0	28.9	26.8
B	12.0	13.4	14.9	11.8	13.6	16.2
AB	2.9	2.8	3.8	1.6	2.0	2.5
Unknown	0.0	0.0	0.0	0.0	0.0	0.0
Previous Transplant (%)						
Yes	11.7	12.6	12.2	14.2	15.4	13.5
No	88.3	87.4	87.8	85.8	84.6	86.5
Unknown	0.0	0.0	0.0	0.0	0.0	0.0
Initial CPRA (%)						
0-9%	87.8	79.9	78.0	88.1	80.2	79.0
10-79%	8.2	13.9	14.3	7.0	13.0	13.8
80+%	4.1	6.2	7.6	4.9	6.7	7.2
Unknown	0.0	0.0	0.0	0.0	0.1	0.0
Primary Disease (%)*						
Glomerular Diseases	22.7	20.5	18.5	20.6	20.3	18.3
Tubular and Interstitial Diseases	3.2	5.2	3.7	5.6	5.4	3.7
Polycystic Kidneys	9.9	8.6	7.0	8.5	8.8	6.8
Congenital, Familial, Metabolic	1.5	2.7	1.9	2.9	3.3	1.9
Diabetes	30.0	32.4	34.6	37.3	33.6	37.1
Renovascular & Vascular Diseases	0.0	0.0	0.1	0.0	0.1	0.1
Neoplasms	0.0	0.8	0.5	0.2	0.5	0.3
Hypertensive Nephrosclerosis	14.9	16.4	20.3	12.3	17.0	20.5
Other	17.2	13.0	13.0	12.1	10.7	10.9
Missing*	0.6	0.3	0.5	0.7	0.4	0.4

* When "retransplant" is indicated, the primary disease is passed forward from the prior transplant in order to indicate the initial primary disease causing organ failure. "Missing" may include some patients for whom retransplant is indicated but no prior diagnosis can be found.



B. Waiting List Information

Table B4. Transplant rates: 01/01/2021 - 12/31/2022

Waiting List Registrations	This Center	OPO/DSA	Region	U.S.
All Candidates				
Count on waiting list at start*	839	1,316	3,676	97,140
Person Years**	1,462.0	2,476.4	7,461.4	191,451.8
Removals for Transplant	545	832	3,002	49,960
Adult (18+) Candidates				
Count on waiting list at start*	839	1,293	3,583	95,449
Person Years**	1,462.0	2,428.2	7,261.0	188,047.4
Removals for transplant	545	797	2,876	48,193
Pediatric (<18) Candidates				
Count on waiting list at start*	--	--	--	--
Person Years**	--	--	--	--
Removals for transplant	--	--	--	--

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

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

Figure B1. Observed and expected transplant rates: 01/01/2021 - 12/31/2022

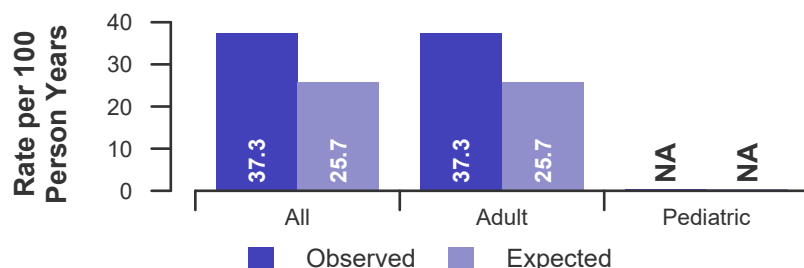


Figure B2. Transplant rate ratio estimate

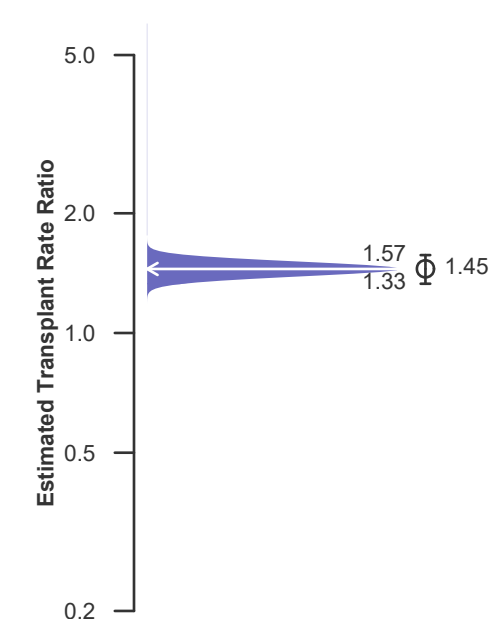
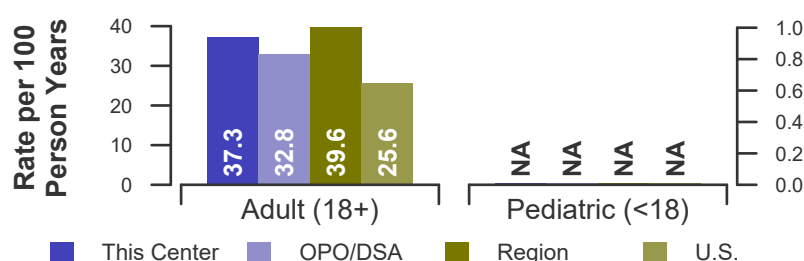


Figure B3. Observed adult (18+) and pediatric (<18) transplant rates: 01/01/2021 - 12/31/2022





B. Waiting List Information

Table B4D. Deceased donor transplant rates: 01/01/2021 - 12/31/2022

Waiting List Registrations	This Center	OPO/DSA	Region	U.S.
All Candidates				
Count on waiting list at start*	839	1,316	3,676	97,140
Person Years**	1,462.0	2,476.4	7,461.4	191,451.8
Removals for Transplant	407	564	2,284	38,253
Adult (18+) Candidates				
Count on waiting list at start*	839	1,293	3,583	95,449
Person Years**	1,462.0	2,428.2	7,261.0	188,047.4
Removals for transplant	407	544	2,213	36,973
Pediatric (<18) Candidates				
Count on waiting list at start*	--	--	--	--
Person Years**	--	--	--	--
Removals for transplant	--	--	--	--

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

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

Figure B1D. Observed and expected deceased donor transplant rates: 01/01/2021 - 12/31/2022

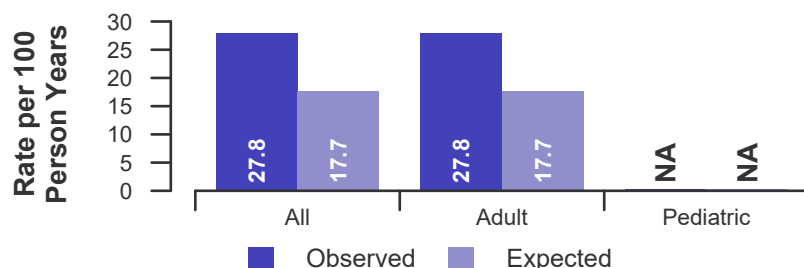


Figure B2D. Deceased donor transplant rate ratio estimate

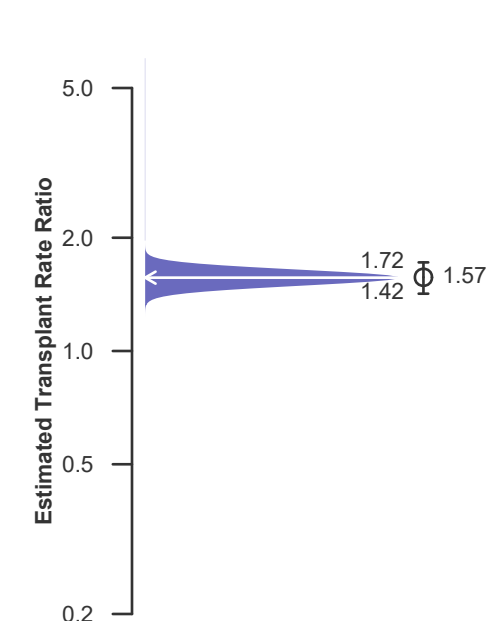
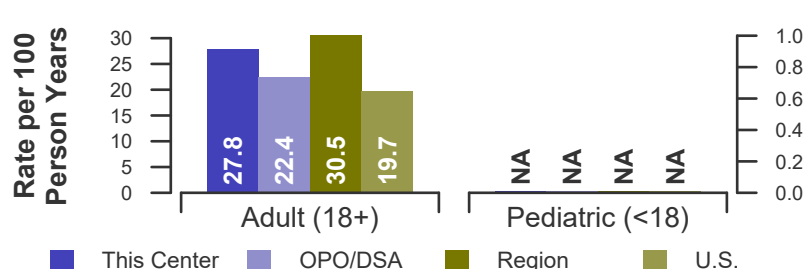


Figure B3D. Observed adult (18+) and pediatric (<18) deceased donor transplant rates: 01/01/2021 - 12/31/2022





B. Waiting List Information

Table B5. Pre-transplant mortality rates: 01/01/2021 - 12/31/2022

Waiting List Registrations	This Center	OPO/DSA	Region	U.S.
All Candidates				
Count on waiting list at start*	839	1,316	3,676	97,140
Person Years**	1,678.1	2,814.5	8,225.0	206,618.5
Number of deaths	93	142	437	12,548
Adult (18+) Candidates				
Count on waiting list at start*	839	1,293	3,583	95,449
Person Years**	1,678.1	2,763.1	8,020.4	203,096.6
Number of deaths	93	142	436	12,500
Pediatric (<18) Candidates				
Count on waiting list at start*	--	--	--	--
Person Years**	--	--	--	--
Number of deaths	--	--	--	--

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

** Person years are calculated as days (converted to fractional years). The number of days from January 1 or from the date of first wait listing until death, transplant, 60 days after recovery, transfer or December 31.

Figure B4. Observed and expected pre-transplant mortality rates: 01/01/2021 - 12/31/2022

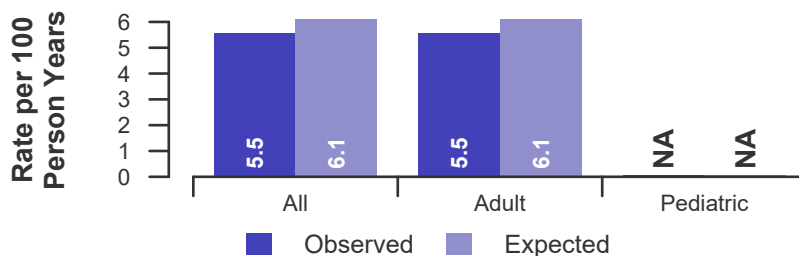


Figure B6. Observed adult (18+) and pediatric (<18) pre-transplant mortality rates: 01/01/2021 - 12/31/2022

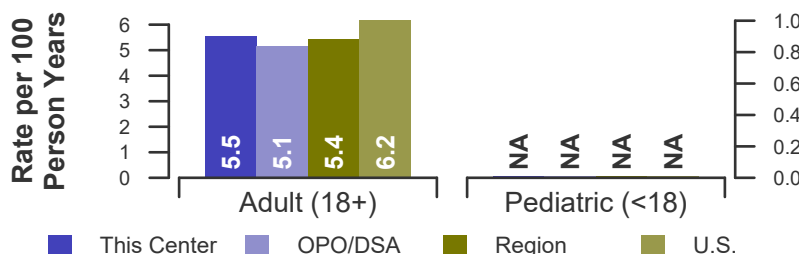
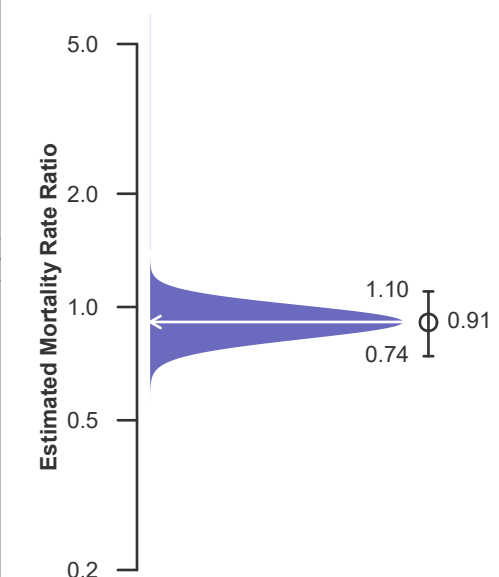


Figure B5. Pre-transplant mortality rate ratio estimate





B. Waiting List Information

Table B6. Rates of patient mortality after listing: 01/01/2021 - 12/31/2022

Waiting List Registrations	This Center	OPO/DSA	Region	U.S.
All Patients				
Count at risk during the evaluation period	2,781	4,579	16,584	311,071
Person-years*	4,215.0	6,805.0	24,664.4	459,601.0
Number of Deaths	206	319	1,224	24,941
Adult (18+) Patients				
Count at risk during the evaluation period	2,778	4,376	15,949	301,947
Person-years*	4,209.0	6,479.5	23,673.2	445,552.1
Number of Deaths	206	319	1,219	24,842
Pediatric (<18) Patients				
Count at risk during the evaluation period	3	203	635	9,124
Person-years*	6.0	325.4	991.2	14,048.9
Number of Deaths	0	0	5	99

* Person-years are calculated as days (converted to fractional years). The number of days from 01/01/2021, or from the date of first wait listing until death, reaching 7 years after listing or December 31, 2022.

** 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: 01/01/2021 - 12/31/2022

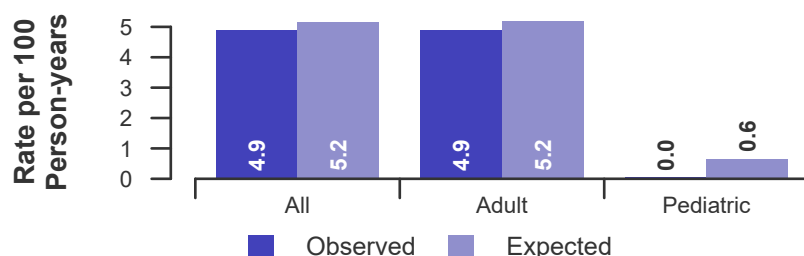


Figure B8. HR estimate of patient mortality after listing

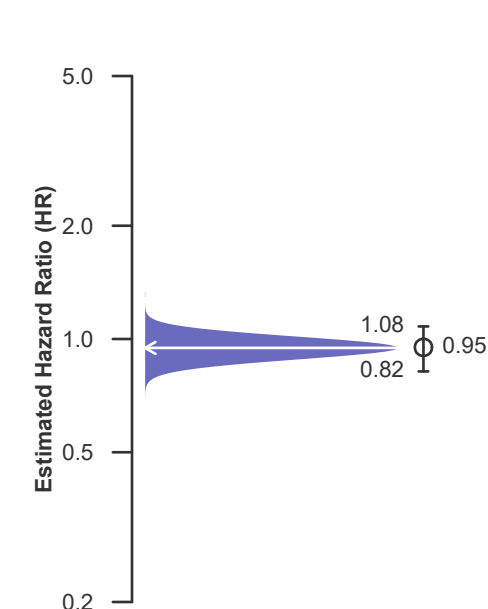
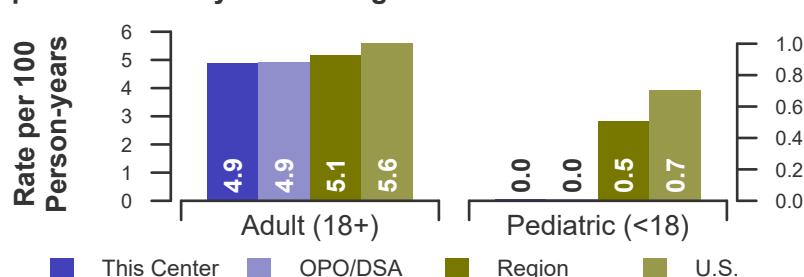


Figure B9. Observed adult (18+) and pediatric (<18) rates of patient mortality after listing: 01/01/2021 - 12/31/2022





B. Waiting List Information

Table B7. Waiting list candidate status after listing
Candidates registered on waiting list between 07/01/2020 and 06/30/2021

Waiting list status (survival status)	This Center (N=329)			U.S. (N=40,027)		
	Months Since Listing			Months Since Listing		
	6	12	18	6	12	18
Alive on waiting list (%)	76.9	58.1	46.2	73.8	59.9	49.8
Died on the waiting list without transplant (%)	0.9	3.0	3.6	1.5	2.8	3.8
Removed without transplant (%):						
Condition worsened (status unknown)	0.0	0.9	2.4	0.7	1.6	2.6
Condition improved (status unknown)	0.0	0.0	0.0	0.1	0.2	0.3
Refused transplant (status unknown)	0.0	0.0	0.0	0.0	0.1	0.1
Other	0.3	1.8	3.3	0.6	1.5	2.7
Transplant (living donor from waiting list only) (%):						
Functioning (alive)	4.3	11.2	11.2	5.7	8.8	7.1
Failed-Retransplanted (alive)	0.0	0.0	0.0	0.0	0.0	0.0
Failed-alive not retransplanted	0.0	0.3	0.0	0.0	0.0	0.0
Died	0.0	0.0	0.0	0.0	0.1	0.2
Status Yet Unknown**	0.0	0.0	3.6	0.1	0.4	4.0
Transplant (deceased donor) (%):						
Functioning (alive)	15.2	19.1	17.6	14.9	18.9	14.4
Failed-Retransplanted (alive)	0.0	0.0	0.0	0.0	0.0	0.0
Failed-alive not retransplanted	0.0	0.3	0.3	0.1	0.1	0.1
Died	0.6	0.6	0.9	0.4	0.8	1.3
Status Yet Unknown*	1.8	4.0	10.0	1.9	4.4	13.0
Lost or Transferred (status unknown) (%)	0.0	0.6	0.6	0.1	0.4	0.7
TOTAL (%)	100.0	100.0	100.0	100.0	100.0	100.0
Total % known died on waiting list or after transplant	1.5	3.6	4.6	2.0	3.7	5.2
Total % known died or removed as unstable	1.5	4.6	7.0	2.6	5.3	7.8
Total % removed for transplant	21.9	35.6	43.8	23.1	33.5	40.0
Total % with known functioning transplant (alive)	19.5	30.4	28.9	20.6	27.7	21.5

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



B. Waiting List Information

Table B8. Percent of candidates with deceased donor transplants: demographic characteristics
Candidates registered on the waiting list between 01/01/2017 and 12/31/2019

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	881	4.4	18.4	25.9	35.2	102,077	4.6	19.7	27.5	33.4
Ethnicity/Race*										
White	436	3.0	14.7	22.9	32.1	39,780	4.6	20.4	28.4	34.2
African-American	104	3.8	22.1	26.9	34.6	31,749	4.9	20.2	28.3	34.3
Hispanic/Latino	241	7.5	23.2	31.1	40.2	19,871	4.9	19.3	26.3	32.2
Asian	51	3.9	17.6	23.5	37.3	8,669	2.9	14.6	21.8	27.6
Other	49	4.1	20.4	26.5	36.7	2,008	6.0	23.2	31.4	37.0
Unknown	0	--	--	--	--	0	--	--	--	--
Age										
<2 years	0	--	--	--	--	113	7.1	41.6	61.1	73.5
2-11 years	0	--	--	--	--	830	7.5	48.4	64.2	72.9
12-17 years	0	--	--	--	--	1,436	7.4	47.3	61.0	66.6
18-34 years	100	3.0	26.0	36.0	48.0	9,914	4.5	21.3	30.8	38.9
35-49 years	189	3.7	22.8	32.3	41.8	25,227	4.5	19.3	27.3	33.6
50-64 years	380	6.8	19.2	26.1	35.3	43,182	4.6	18.2	25.4	31.0
65-69 years	134	1.5	6.0	12.7	22.4	13,913	4.4	18.4	25.5	30.8
70+ years	78	1.3	15.4	19.2	24.4	7,462	4.8	20.9	27.9	32.4
Gender										
Male	556	5.4	20.1	27.9	35.4	63,005	4.8	18.9	26.4	32.1
Female	325	2.8	15.4	22.5	34.8	39,072	4.3	20.9	29.2	35.5

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



B. Waiting List Information

Table B9. Percent of candidates with deceased donor transplants: medical characteristics
Candidates registered on the waiting list between 01/01/2017 and 12/31/2019

Characteristic	N	Percent transplanted at time periods since listing					United States				
		This Center									
		30 day	1 year	2 years	3 years	N	30 day	1 year	2 years	3 years	
All	881	4.4	18.4	25.9	35.2	102,077	4.6	19.7	27.5	33.4	
Blood Type											
O	432	3.7	13.2	18.8	25.9	50,773	4.2	16.7	23.3	28.7	
A	313	6.1	22.4	31.0	42.8	31,914	5.7	23.7	33.1	39.9	
B	106	0.9	21.7	31.1	42.5	15,515	3.1	17.0	24.3	30.0	
AB	30	10.0	40.0	56.7	63.3	3,875	8.4	37.1	48.3	54.2	
Previous Transplant											
Yes	112	5.4	24.1	33.0	39.3	13,547	3.1	18.7	27.3	33.2	
No	769	4.3	17.6	24.8	34.6	88,530	4.9	19.8	27.5	33.4	
Peak PRA/CPRA											
0-9%	785	4.3	16.8	24.5	33.5	80,281	4.9	19.2	26.6	32.5	
10-79%	52	3.8	25.0	30.8	46.2	13,146	3.8	18.6	26.7	32.7	
80+%	44	6.8	38.6	45.5	52.3	8,557	3.1	26.3	36.8	42.6	
Unknown	0	--	--	--	--	2	100.0	100.0	100.0	100.0	
Primary Disease*											
Glomerular Diseases	162	3.1	20.4	27.8	42.0	18,660	3.8	20.6	29.9	37.1	
Tubular & Interstitial Diseases	48	4.2	14.6	22.9	29.2	4,009	5.4	22.2	29.1	34.9	
Polycystic Kidneys	60	3.3	18.3	31.7	41.7	6,808	3.8	19.1	28.5	35.9	
Congenital, Familial, Metabolic	21	4.8	19.0	33.3	38.1	1,956	5.8	30.3	41.5	49.5	
Diabetes	348	2.6	13.8	19.5	29.3	37,576	3.3	15.3	21.7	26.5	
Renovascular & Vascular Diseases	1	0.0	0.0	0.0	0.0	163	5.5	22.1	31.3	39.3	
Neoplasms	4	0.0	25.0	25.0	25.0	334	7.8	25.7	35.3	39.2	
Hypertensive Nephrosclerosis	95	8.4	22.1	29.5	35.8	20,662	5.2	20.5	28.8	35.3	
Other	138	8.7	26.8	35.5	42.0	11,551	9.2	28.7	36.6	41.5	
Missing*	4	0.0	0.0	0.0	0.0	358	2.0	9.5	17.6	22.9	

* When "retransplant" is indicated, the primary disease is passed forward from the prior transplant in order to indicate the initial primary disease causing organ failure. "Missing" may include some patients for whom retransplant is indicated but no prior diagnosis can be found.



B. Waiting List Information

Table B10. Time to transplant for waiting list candidates*

Candidates registered on the waiting list between 01/01/2017 and 06/30/2022

Percentile	Center	Months to Transplant**		U.S.
		OPO/DSA	Region	
5th	1	1.1	0.6	0.7
10th	2.5	2.8	1.4	1.9
25th	7.0	7.8	5.4	7.9
50th (median time to transplant)	25.2	29.3	19.1	32.9
75th	Not Observed	Not Observed	Not Observed	Not Observed

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

** Censored on 12/31/2022. 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: 01/01/2022 - 12/31/2022

Offers Acceptance Characteristics	This Center	OPO/DSA	Region	U.S.
Overall				
Number of Offers	14,325	20,978	96,436	3,129,787
Number of Acceptances	216	306	1,095	18,237
Expected Acceptances	146.5	329.1	1,185.5	18,235.0
Offer Acceptance Ratio*	1.47	0.93	0.92	1.00
95% Credible Interval**	[1.28, 1.67]	--	--	--
Low-KDRI Donors (KDRI < 1.05)				
Number of Offers	1,935	2,965	11,889	367,443
Number of Acceptances	100	151	378	5,670
Expected Acceptances	71.9	145.3	369.0	5,671.9
Offer Acceptance Ratio*	1.38	1.04	1.02	1.00
95% Credible Interval**	[1.13, 1.66]	--	--	--
Medium-KDRI Donors (1.05 < KDRI < 1.75)				
Number of Offers	10,740	15,796	68,058	2,095,082
Number of Acceptances	98	137	597	10,272
Expected Acceptances	64.6	165.3	674.4	10,269.7
Offer Acceptance Ratio*	1.50	0.83	0.89	1.00
95% Credible Interval**	[1.22, 1.81]	--	--	--
High-KDRI Donors (KDRI > 1.75)				
Number of Offers	1,650	2,217	16,489	667,251
Number of Acceptances	18	18	120	2,293
Expected Acceptances	10.0	18.5	142.1	2,293.1
Offer Acceptance Ratio*	1.67	0.98	0.85	1.00
95% Credible Interval**	[1.02, 2.48]	--	--	--
Hard-to-Place Kidneys (Over 100 Offers)				
Number of Offers	11,119	15,235	78,155	2,740,125
Number of Acceptances	4	4	83	3,453
Expected Acceptances	7.9	19.0	191.1	3,391.1
Offer Acceptance Ratio*	0.61	0.29	0.44	1.02
95% Credible Interval**	[0.22, 1.18]	--	--	--

* The offer acceptance ratio estimates the relative offer acceptance practice of University of Colorado Hospital/Health Science 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, [1.28, 1.67], indicates the location of COUC's true offer acceptance ratio with 95% probability. The best estimate is 47% more likely to accept an offer compared to national acceptance behavior, but COUC's performance could plausibly range from 28% higher acceptance up to 67% higher acceptance.



B. Waiting List Information

Figure B10. Offer acceptance: Overall

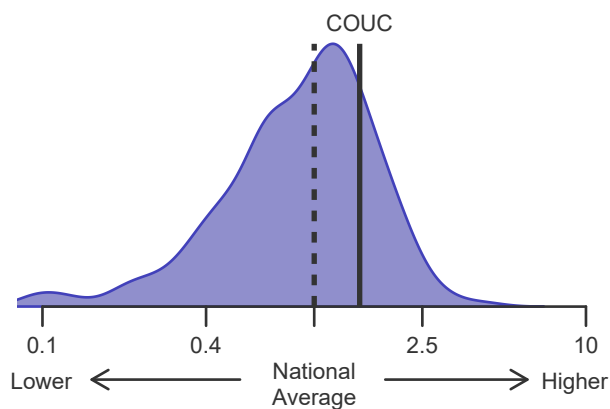


Figure B11. Offer acceptance: Low-KDRI

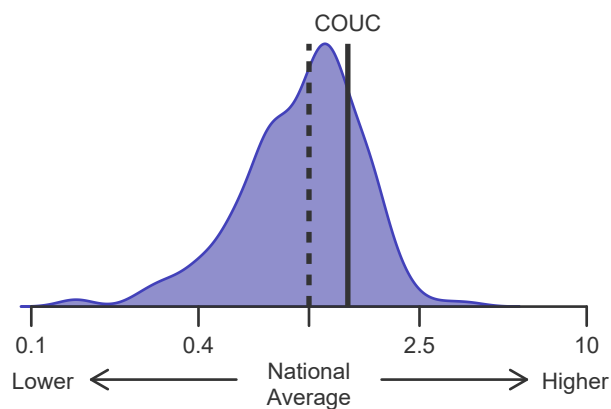


Figure B12. Offer acceptance: Medium-KDRI

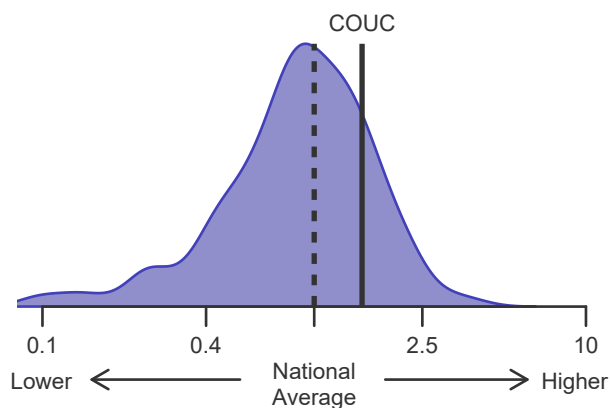


Figure B13. Offer acceptance: High-KDRI

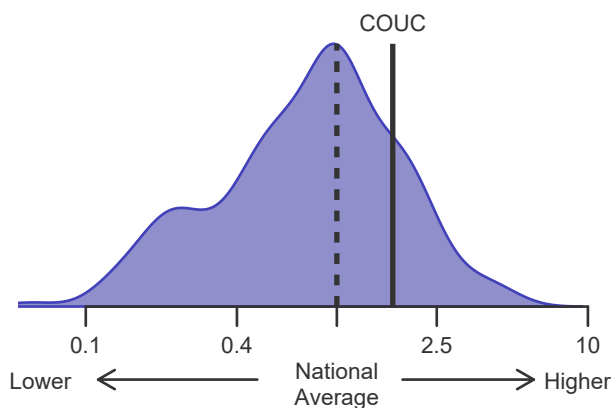
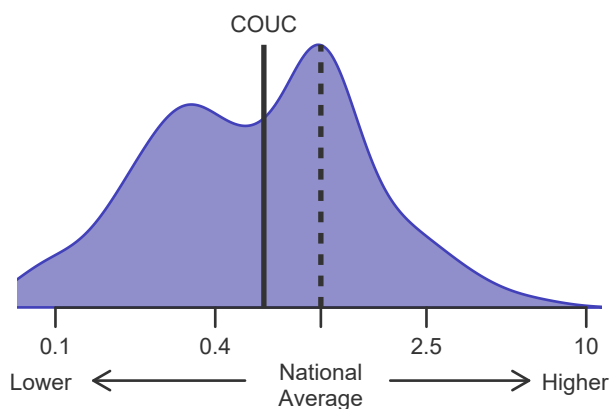


Figure B14. Offer acceptance: Offer number > 100





C. Transplant Information

Table C1D. Deceased donor transplant recipient demographic characteristics

Patients transplanted between 01/01/2022 and 12/31/2022

Characteristic	Percentage in each category		
	Center (N=231)	Region (N=1,169)	U.S. (N=19,636)
Ethnicity/Race (%)*			
White	43.3	53.0	35.2
African-American	13.4	24.3	33.8
Hispanic/Latino	32.9	14.2	20.7
Asian	6.9	6.1	8.5
Other	3.5	2.4	1.8
Unknown	0.0	0.0	0.0
Age (%)			
<2 years	0.0	0.0	0.0
2-11 years	0.0	1.1	1.0
12-17	0.0	1.0	1.5
18-34	12.6	10.6	9.9
35-49 years	31.2	25.0	23.7
50-64 years	38.5	37.0	39.7
65-69 years	10.8	11.6	13.3
70+ years	6.9	13.7	10.8
Gender (%)			
Male	61.9	60.8	60.7
Female	38.1	39.2	39.3

* 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 C1L. Living donor transplant recipient demographic characteristics

Patients transplanted between 01/01/2022 and 12/31/2022

Characteristic	Percentage in each category		
	Center (N=72)	Region (N=373)	U.S. (N=5,864)
Ethnicity/Race (%)*			
White	65.3	74.5	61.5
African-American	5.6	8.6	12.8
Hispanic/Latino	23.6	12.6	17.2
Asian	5.6	2.7	7.0
Other	0.0	1.6	1.4
Unknown	0.0	0.0	0.0
Age (%)			
<2 years	0.0	0.3	0.2
2-11 years	0.0	3.8	1.8
12-17	0.0	2.4	1.6
18-34	23.6	18.5	15.3
35-49 years	31.9	24.9	26.3
50-64 years	25.0	25.7	34.2
65-69 years	9.7	12.3	10.4
70+ years	9.7	12.1	10.2
Gender (%)			
Male	59.7	66.5	62.0
Female	40.3	33.5	38.0

* 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 C2D. Deceased donor transplant recipient medical characteristics

Patients transplanted between 01/01/2022 and 12/31/2022

Characteristic	Percentage in each category		
	Center (N=231)	Region (N=1,169)	U.S. (N=19,636)
Blood Type (%)			
O	46.8	45.2	46.8
A	36.4	37.6	33.8
B	13.0	13.4	14.7
AB	3.9	3.8	4.7
Previous Transplant (%)			
Yes	5.2	9.8	11.9
No	94.8	90.2	88.1
Peak PRA/CPRA Prior to Transplant (%)			
0-9%	82.7	66.8	60.2
10-79%	10.4	20.4	22.9
80+ %	6.9	12.8	16.9
Unknown	0.0	0.0	0.0
Body Mass Index (%)			
0-20	6.9	6.8	8.8
21-25	29.4	26.7	27.1
26-30	37.2	30.5	31.2
31-35	18.6	23.3	21.5
36-40	6.5	10.9	8.4
41+	1.3	1.1	1.3
Unknown	0.0	0.6	1.6
Primary Disease (%)*			
Glomerular Diseases	26.8	22.7	20.6
Tubular and Interstitial Disease	3.5	4.7	3.9
Polycystic Kidneys	6.1	7.9	6.8
Congenital, Familial, Metabolic	0.9	2.0	2.3
Diabetes	27.7	28.8	30.1
Renovascular & Vascular Diseases	0.0	0.1	0.1
Neoplasms	0.4	1.1	0.5
Hypertensive Nephrosclerosis	16.5	19.8	23.6
Other Kidney	18.2	12.8	11.8
Missing*	0.0	0.1	0.3

* When "retransplant" is indicated, the primary disease is passed forward from the prior transplant in order to indicate the initial primary disease causing organ failure. "Missing" may include some patients for whom retransplant is indicated but no prior diagnosis can be found.



C. Transplant Information

Table C2L. Living donor transplant recipient medical characteristics**Patients transplanted between 01/01/2022 and 12/31/2022**

Characteristic	Percentage in each category		
	Center (N=72)	Region (N=373)	U.S. (N=5,864)
Blood Type (%)			
O	44.4	43.7	43.3
A	37.5	38.1	38.0
B	15.3	14.7	13.9
AB	2.8	3.5	4.8
Previous Transplant (%)			
Yes	5.6	8.6	10.4
No	94.4	91.4	89.6
Peak PRA/CPRA Prior to Transplant (%)			
0-9%	84.7	77.5	73.0
10-79%	12.5	18.8	22.6
80+ %	2.8	3.8	4.4
Unknown	0.0	0.0	0.0
Body Mass Index (%)			
0-20	19.4	14.2	12.9
21-25	25.0	28.4	29.1
26-30	25.0	25.7	29.4
31-35	13.9	19.3	20.2
36-40	9.7	9.9	6.7
41+	6.9	1.9	1.1
Unknown	0.0	0.5	0.7
Primary Disease (%)*			
Glomerular Diseases	31.9	27.3	28.7
Tubular and Interstitial Disease	4.2	5.1	4.5
Polycystic Kidneys	11.1	14.5	12.4
Congenital, Familial, Metabolic	1.4	6.4	3.7
Diabetes	26.4	21.2	23.8
Renovascular & Vascular Diseases	0.0	0.0	0.2
Neoplasms	0.0	1.1	0.6
Hypertensive Nephrosclerosis	8.3	13.4	16.2
Other Kidney	16.7	10.5	9.3
Missing*	0.0	0.5	0.5

* When "retransplant" is indicated, the primary disease is passed forward from the prior transplant in order to indicate the initial primary disease causing organ failure. "Missing" may include some patients for whom retransplant is indicated but no prior diagnosis can be found.



C. Transplant Information

Table C3D. Deceased donor characteristics**Transplants performed between 01/01/2022 and 12/31/2022**

Donor Characteristic	Percentage in each category		
	Center (N=231)	Region (N=1,169)	U.S. (N=19,636)
Cause of Death (%)			
Deceased: Stroke	19.5	21.3	21.3
Deceased: MVA	16.5	13.0	12.8
Deceased: Other	64.1	65.7	65.8
Ethnicity/Race (%)*			
White	77.5	78.3	66.2
African-American	3.9	9.1	14.4
Hispanic/Latino	13.9	9.1	15.4
Asian	3.5	2.7	2.7
Other	1.3	0.9	1.3
Not Reported	0.0	0.0	0.0
Age (%)			
<2 years	0.0	0.4	0.7
2-11 years	0.4	2.7	2.3
12-17	6.5	5.8	3.7
18-34	40.7	32.4	31.0
35-49 years	27.3	31.3	34.7
50-64 years	22.9	24.2	24.9
65-69 years	2.2	2.4	2.2
70+ years	0.0	0.8	0.5
Gender (%)			
Male	58.4	60.1	64.2
Female	41.6	39.9	35.8
Blood Type (%)			
O	47.6	46.5	48.6
A	39.0	39.3	36.3
B	11.7	11.5	11.6
AB	1.7	2.6	3.5
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 C3L. Living donor characteristics**Transplants performed between 01/01/2022 and 12/31/2022**

Donor Characteristic	Percentage in each category		
	Center (N=72)	Region (N=373)	U.S. (N=5,864)
Ethnicity/Race (%)*			
White	76.4	83.1	69.4
African-American	4.2	4.0	7.6
Hispanic/Latino	16.7	9.9	16.2
Asian	2.8	1.1	5.0
Other	0.0	1.9	1.7
Not Reported	0.0	0.0	0.0
Age (%)			
0-11 years	0.0	0.0	0.0
12-17	0.0	0.0	0.0
18-34	26.4	27.1	24.8
35-49 years	34.7	38.9	38.7
50-64 years	27.8	28.4	30.3
65-69 years	11.1	5.4	4.7
70+ years	0.0	0.3	1.6
Gender (%)			
Male	34.7	35.7	36.2
Female	65.3	64.3	63.8
Blood Type (%)			
O	58.3	59.5	60.7
A	29.2	29.8	28.3
B	11.1	9.1	9.2
AB	1.4	1.6	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 01/01/2022 and 12/31/2022

Transplant Characteristic	Center (N=231)	Percentage in each category Region (N=1,169)	U.S. (N=19,636)
Cold Ischemic Time (Hours): Local (%)			
Deceased: 0-11 hr	36.1	30.3	21.2
Deceased: 12-21 hr	47.9	47.6	50.9
Deceased: 22-31 hr	15.5	20.4	23.5
Deceased: 32-41 hr	0.5	1.1	2.8
Deceased: 42+ hr	0.0	0.1	0.7
Not Reported	0.0	0.4	0.9
Cold Ischemic Time (Hours): Shared (%)			
Deceased: 0-11 hr	25.0	13.7	9.1
Deceased: 12-21 hr	16.7	49.3	47.8
Deceased: 22-31 hr	50.0	32.6	33.4
Deceased: 32-41 hr	8.3	3.5	7.6
Deceased: 42+ hr	0.0	0.2	1.2
Not Reported	0.0	0.7	0.9
Level of Mismatch (%)			
A Locus Mismatches (%)			
0	9.5	12.4	11.1
1	41.6	39.2	39.2
2	48.9	48.4	49.5
Not Reported	0.0	0.0	0.2
B Locus Mismatches (%)			
0	3.0	6.1	6.6
1	25.1	26.9	24.8
2	71.9	67.0	68.5
Not Reported	0.0	0.0	0.2
DR Locus Mismatches (%)			
0	13.9	16.5	16.2
1	51.1	50.6	47.8
2	35.1	32.9	35.8
Not Reported	0.0	0.0	0.2
Total Mismatches (%)			
0	1.3	4.1	4.3
1	0.9	1.4	1.1
2	6.9	5.2	4.4
3	11.7	14.6	14.4
4	32.0	28.2	27.5
5	31.6	34.0	33.1
6	15.6	12.5	15.1
Not Reported	0.0	0.0	0.2
Procedure Type (%)			
Single organ	94.4	94.6	93.8
Multi organ	5.6	5.4	6.2
Dialysis in First Week After Transplant (%)			
Yes	22.9	22.4	33.5
No	77.1	77.6	66.2
Not Reported	0.0	0.0	0.3
Donor Location (%)			
Local Donation Service Area (DSA)	94.8	63.2	40.4
Another Donation Service Area (DSA)	5.2	36.8	59.6
Median Time in Hospital After Transplant	3.0 Days	4.0 Days	5.0 Days



C. Transplant Information

Table C4L. Living donor transplant characteristics
Transplants performed between 01/01/2022 and 12/31/2022

Transplant Characteristic	Percentage in each category		
	Center (N=72)	Region (N=373)	U.S. (N=5,864)
Relation with Donor (%)			
Related	26.4	32.7	38.0
Unrelated	72.2	66.8	61.4
Not Reported	1.4	0.5	0.6
Level of Mismatch (%)			
A Locus Mismatches (%)			
0	16.7	14.2	15.9
1	58.3	52.5	48.2
2	25.0	33.0	32.6
Not Reported	0.0	0.3	3.3
B Locus Mismatches (%)			
0	5.6	7.5	8.9
1	33.3	38.6	40.6
2	61.1	53.6	47.1
Not Reported	0.0	0.3	3.3
DR Locus Mismatches (%)			
0	8.3	11.3	15.1
1	45.8	48.0	46.7
2	45.8	40.5	34.9
Not Reported	0.0	0.3	3.3
Total Mismatches (%)			
0	2.8	2.7	4.5
1	1.4	2.9	3.5
2	12.5	12.6	11.6
3	16.7	18.8	21.5
4	20.8	18.0	18.0
5	33.3	31.6	24.0
6	12.5	13.1	13.5
Not Reported	0.0	0.3	3.3
Procedure Type (%)			
Single organ	98.6	99.7	100.0
Multi organ	1.4	0.3	0.0
Dialysis in First Week After Transplant (%)			
Yes	0.0	0.8	2.6
No	100.0	99.2	96.9
Not Reported	0.0	0.0	0.4
Median Time in Hospital After Transplant	3.0 Days	4.0 Days	4.0 Days



C. Transplant Information

Table C5. Adult (18+) 1-month survival with a functioning graft

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

Deaths and retransplants are considered graft failures

Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	COUC	U.S.
Number of transplants evaluated	592	50,701
Estimated probability of surviving with a functioning graft at 1 month (unadjusted for patient and donor characteristics)	98.64%	98.47%
Expected probability of surviving with a functioning graft at 1 month (adjusted for patient and donor characteristics)	98.63%	--
Number of observed graft failures (including deaths) during the first month after transplant	8	770
Number of expected graft failures (including deaths) during the first month after transplant	7.99	--
Estimated hazard ratio*	1.00	--
95% credible interval for the hazard ratio**	[0.48, 1.71]	--

* The hazard ratio provides an estimate of how University of Colorado Hospital/Health Science 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 COUC's graft failure rate were precisely the expected rate, the estimated hazard ratio would be 1.0.

** The 95% credible interval, [0.48, 1.71], indicates the location of COUC's true hazard ratio with 95% probability. The best estimate is 0% higher risk of graft failure compared to an average program, but COUC's performance could plausibly range from 52% reduced risk up to 71% increased risk.

Figure C1. Adult (18+) 1-month graft failure HR estimate

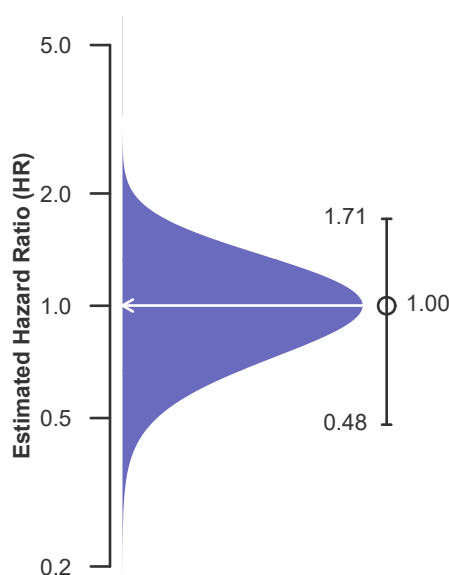
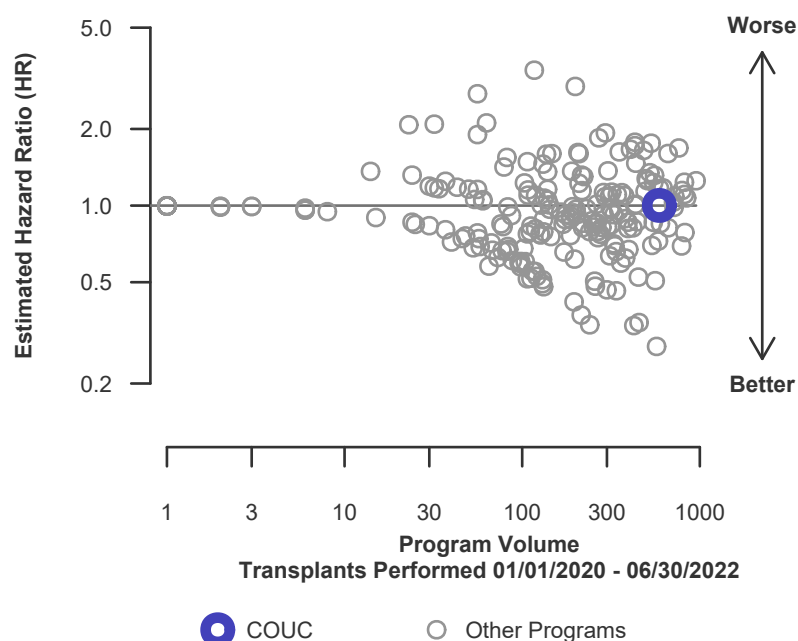


Figure C2. Adult (18+) 1-month graft failure HR program comparison





C. Transplant Information

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

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

Deaths and retransplants are considered graft failures

Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	COUC	U.S.
Number of transplants evaluated	423	37,884
Estimated probability of surviving with a functioning graft at 1 month (unadjusted for patient and donor characteristics)	98.57%	98.22%
Expected probability of surviving with a functioning graft at 1 month (adjusted for patient and donor characteristics)	98.40%	--
Number of observed graft failures (including deaths) during the first month after transplant	6	667
Number of expected graft failures (including deaths) during the first month after transplant	6.70	--
Estimated hazard ratio*	0.92	--
95% credible interval for the hazard ratio**	[0.40, 1.66]	--

* The hazard ratio provides an estimate of how University of Colorado Hospital/Health Science 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 COUC's graft failure rate were precisely the expected rate, the estimated hazard ratio would be 1.0.

** The 95% credible interval, [0.40, 1.66], indicates the location of COUC's true hazard ratio with 95% probability. The best estimate is 8% lower risk of graft failure compared to an average program, but COUC's performance could plausibly range from 60% reduced risk up to 66% increased risk.

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

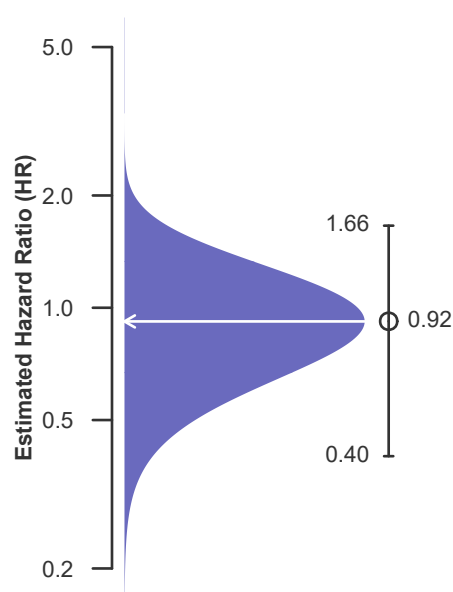
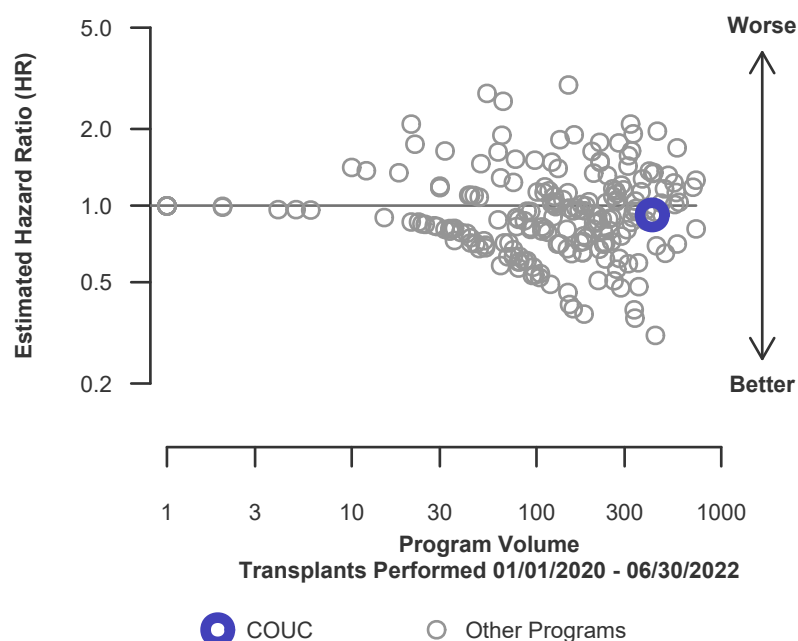


Figure C2D. Adult (18+) 1-month deceased donor graft failure HR program comparison





C. Transplant Information

Table C5L. Adult (18+) 1-month survival with a functioning living donor graft

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

Deaths and retransplants are considered graft failures

Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	COUC	U.S.
Number of transplants evaluated	169	12,817
Estimated probability of surviving with a functioning graft at 1 month (unadjusted for patient and donor characteristics)	98.82%	99.19%
Expected probability of surviving with a functioning graft at 1 month (adjusted for patient and donor characteristics)	99.23%	--
Number of observed graft failures (including deaths) during the first month after transplant	2	103
Number of expected graft failures (including deaths) during the first month after transplant	1.28	--
Estimated hazard ratio*	1.22	--
95% credible interval for the hazard ratio**	[0.33, 2.67]	--

* The hazard ratio provides an estimate of how University of Colorado Hospital/Health Science 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 COUC's graft failure rate were precisely the expected rate, the estimated hazard ratio would be 1.0.

** The 95% credible interval, [0.33, 2.67], indicates the location of COUC's true hazard ratio with 95% probability. The best estimate is 22% higher risk of graft failure compared to an average program, but COUC's performance could plausibly range from 67% reduced risk up to 167% increased risk.

Figure C1L. Adult (18+) 1-month living donor graft failure HR estimate

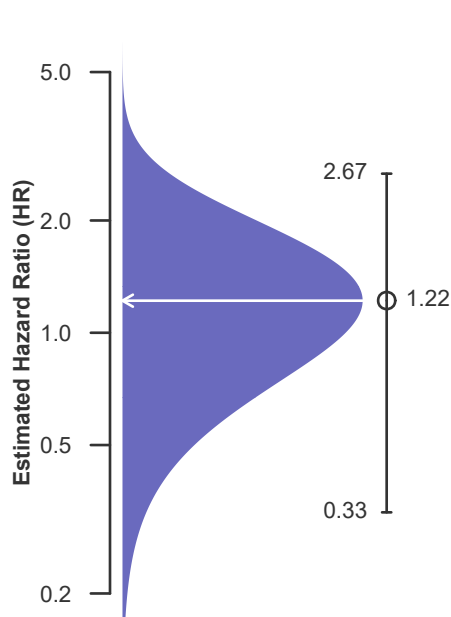
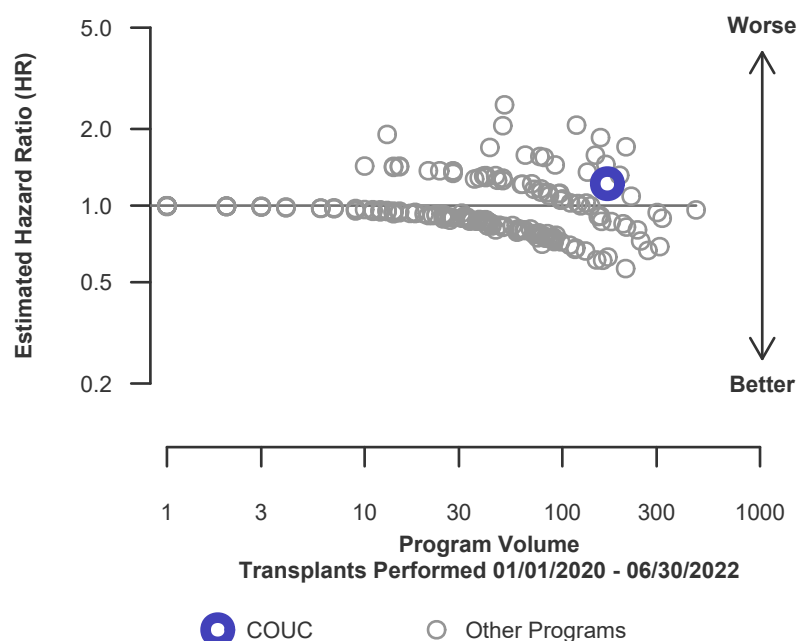


Figure C2L. Adult (18+) 1-month living donor graft failure HR program comparison





C. Transplant Information

Table C6. Adult (18+) 90-Day survival with a functioning graft

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

Deaths and retransplants are considered graft failures

Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	COUC	U.S.
Number of transplants evaluated	592	50,701
Estimated probability of surviving with a functioning graft at 90 days (unadjusted for patient and donor characteristics)	97.16%	97.21%
Expected probability of surviving with a functioning graft at 90 days (adjusted for patient and donor characteristics)	97.53%	--
Number of observed graft failures (including deaths) during the first 90 days after transplant	16	1,358
Number of expected graft failures (including deaths) during the first 90 days after transplant	13.84	--
Estimated hazard ratio*	1.14	--
95% credible interval for the hazard ratio**	[0.67, 1.72]	--

* The hazard ratio provides an estimate of how University of Colorado Hospital/Health Science 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 COUC's graft failure rate were precisely the expected rate, the estimated hazard ratio would be 1.0.

** The 95% credible interval, [0.67, 1.72], indicates the location of COUC's true hazard ratio with 95% probability. The best estimate is 14% higher risk of graft failure compared to an average program, but COUC's performance could plausibly range from 33% reduced risk up to 72% increased risk.

Figure C3. Adult (18+) 90-Day graft failure HR estimate

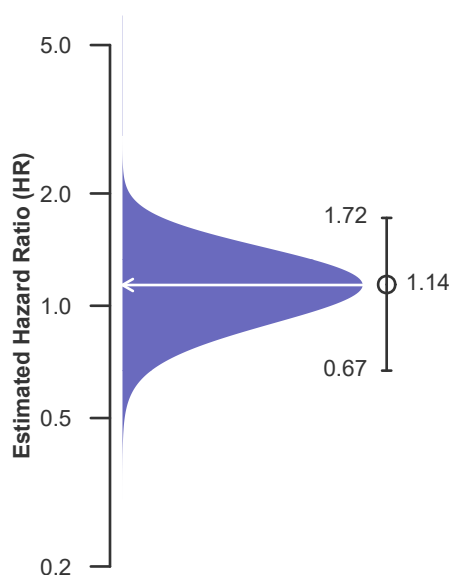
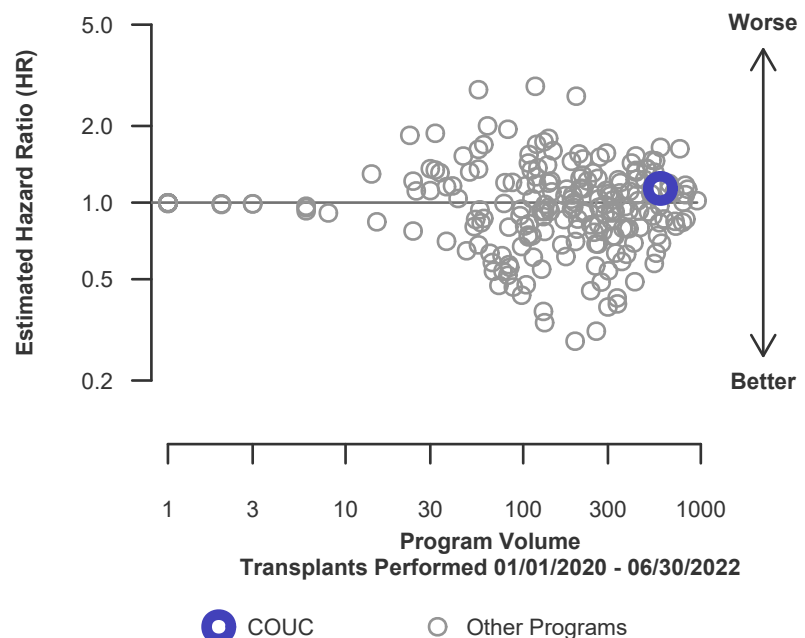


Figure C4. Adult (18+) 90-Day graft failure HR program comparison





C. Transplant Information

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

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

Deaths and retransplants are considered graft failures

Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	COUC	U.S.
Number of transplants evaluated	423	37,884
Estimated probability of surviving with a functioning graft at 90 days (unadjusted for patient and donor characteristics)	96.49%	96.66%
Expected probability of surviving with a functioning graft at 90 days (adjusted for patient and donor characteristics)	96.98%	--
Number of observed graft failures (including deaths) during the first 90 days after transplant	14	1,214
Number of expected graft failures (including deaths) during the first 90 days after transplant	12.04	--
Estimated hazard ratio*	1.14	--
95% credible interval for the hazard ratio**	[0.65, 1.76]	--

* The hazard ratio provides an estimate of how University of Colorado Hospital/Health Science 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 COUC's graft failure rate were precisely the expected rate, the estimated hazard ratio would be 1.0.

** The 95% credible interval, [0.65, 1.76], indicates the location of COUC's true hazard ratio with 95% probability. The best estimate is 14% higher risk of graft failure compared to an average program, but COUC's performance could plausibly range from 35% reduced risk up to 76% increased risk.

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

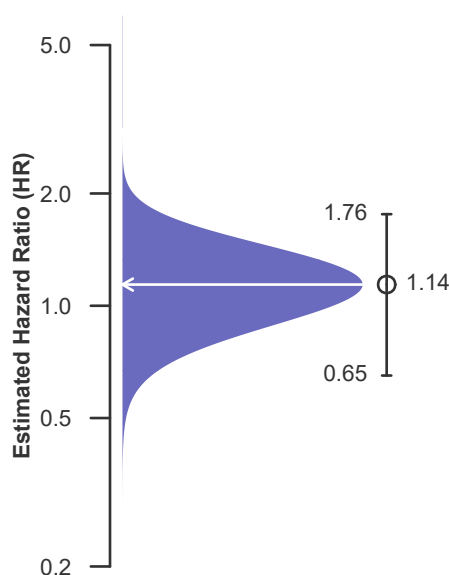
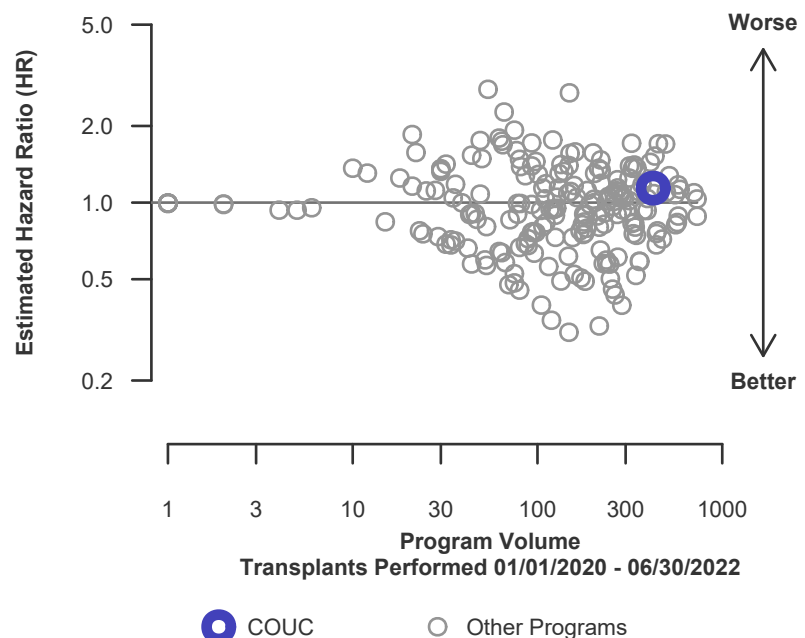


Figure C4D. Adult (18+) 90-Day deceased donor graft failure HR program comparison





C. Transplant Information

Table C6L. Adult (18+) 90-Day survival with a functioning living donor graft

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

Deaths and retransplants are considered graft failures

Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	COUC	U.S.
Number of transplants evaluated	169	12,817
Estimated probability of surviving with a functioning graft at 90 days (unadjusted for patient and donor characteristics)	98.82%	98.84%
Expected probability of surviving with a functioning graft at 90 days (adjusted for patient and donor characteristics)	98.89%	--
Number of observed graft failures (including deaths) during the first 90 days after transplant	2	144
Number of expected graft failures (including deaths) during the first 90 days after transplant	1.80	--
Estimated hazard ratio*	1.05	--
95% credible interval for the hazard ratio**	[0.29, 2.31]	--

* The hazard ratio provides an estimate of how University of Colorado Hospital/Health Science 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 COUC's graft failure rate were precisely the expected rate, the estimated hazard ratio would be 1.0.

** The 95% credible interval, [0.29, 2.31], indicates the location of COUC's true hazard ratio with 95% probability. The best estimate is 5% higher risk of graft failure compared to an average program, but COUC's performance could plausibly range from 71% reduced risk up to 131% increased risk.

Figure C3L. Adult (18+) 90-Day living donor graft failure HR estimate

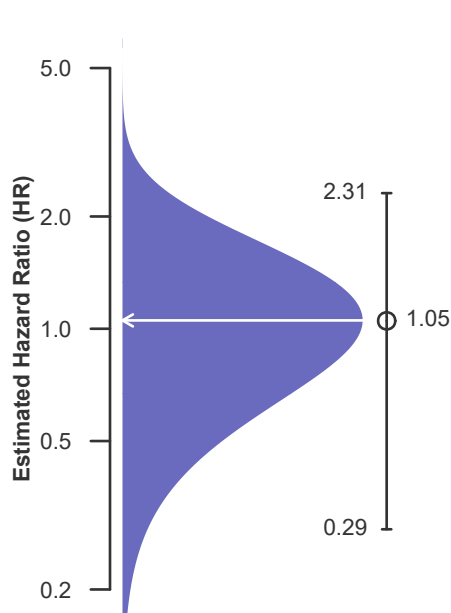
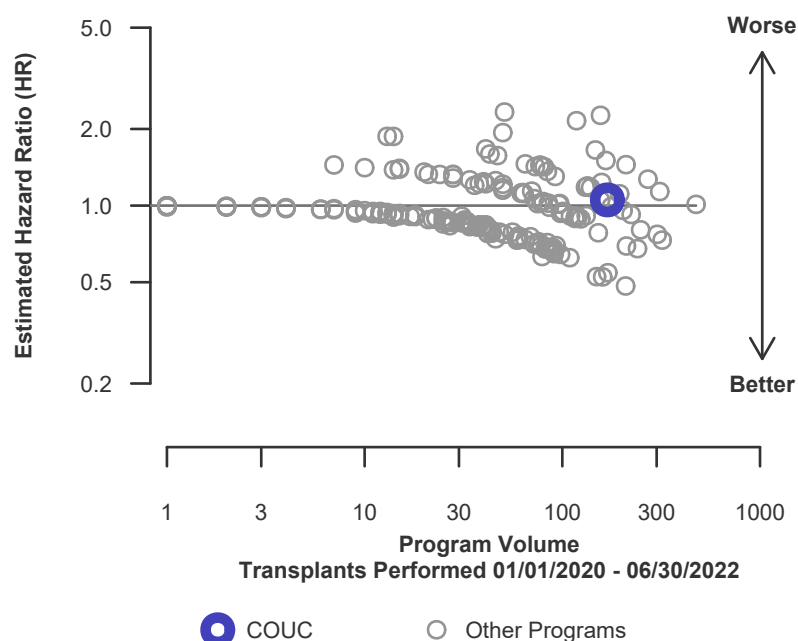


Figure C4L. Adult (18+) 90-Day living donor graft failure HR program comparison





C. Transplant Information

Table C7. Adult (18+) 1-year survival with a functioning graft

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

Deaths and retransplants are considered graft failures

Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	COUC	U.S.
Number of transplants evaluated	592	50,701
Estimated probability of surviving with a functioning graft at 1 year (unadjusted for patient and donor characteristics)	94.69%	94.01%
Expected probability of surviving with a functioning graft at 1 year (adjusted for patient and donor characteristics)	94.67%	--
Number of observed graft failures (including deaths) during the first year after transplant	28	2,609
Number of expected graft failures (including deaths) during the first year after transplant	26.24	--
Estimated hazard ratio*	1.06	--
95% credible interval for the hazard ratio**	[0.72, 1.47]	--

* The hazard ratio provides an estimate of how University of Colorado Hospital/Health Science 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 COUC's graft failure rate were precisely the expected rate, the estimated hazard ratio would be 1.0.

** The 95% credible interval, [0.72, 1.47], indicates the location of COUC's true hazard ratio with 95% probability. The best estimate is 6% higher risk of graft failure compared to an average program, but COUC's performance could plausibly range from 28% reduced risk up to 47% increased risk.

Figure C5. Adult (18+) 1-year graft failure HR estimate

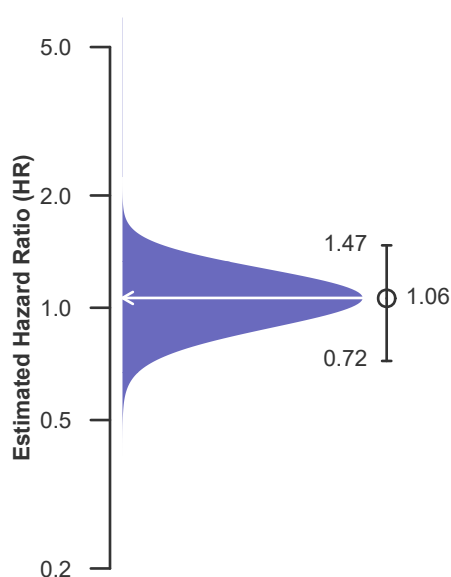
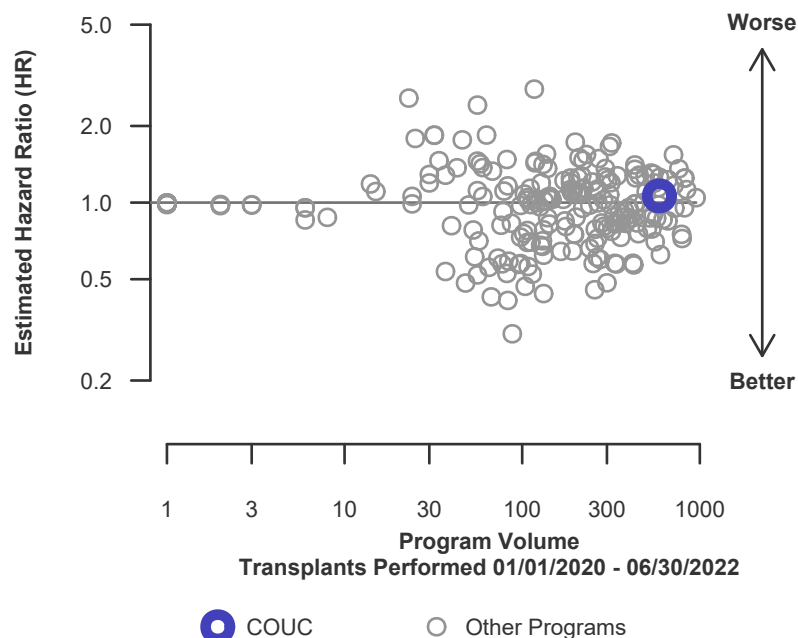


Figure C6. Adult (18+) 1-year graft failure HR program comparison





C. Transplant Information

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

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

Deaths and retransplants are considered graft failures

Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	COUC	U.S.
Number of transplants evaluated	423	37,884
Estimated probability of surviving with a functioning graft at 1 year (unadjusted for patient and donor characteristics)	93.54%	92.82%
Expected probability of surviving with a functioning graft at 1 year (adjusted for patient and donor characteristics)	93.47%	--
Number of observed graft failures (including deaths) during the first year after transplant	24	2,339
Number of expected graft failures (including deaths) during the first year after transplant	22.86	--
Estimated hazard ratio*	1.05	--
95% credible interval for the hazard ratio**	[0.68, 1.48]	--

* The hazard ratio provides an estimate of how University of Colorado Hospital/Health Science 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 COUC's graft failure rate were precisely the expected rate, the estimated hazard ratio would be 1.0.

** The 95% credible interval, [0.68, 1.48], indicates the location of COUC's true hazard ratio with 95% probability. The best estimate is 5% higher risk of graft failure compared to an average program, but COUC's performance could plausibly range from 32% reduced risk up to 48% increased risk.

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

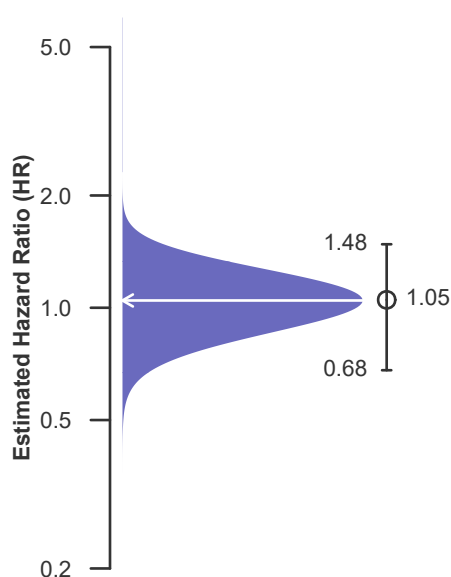
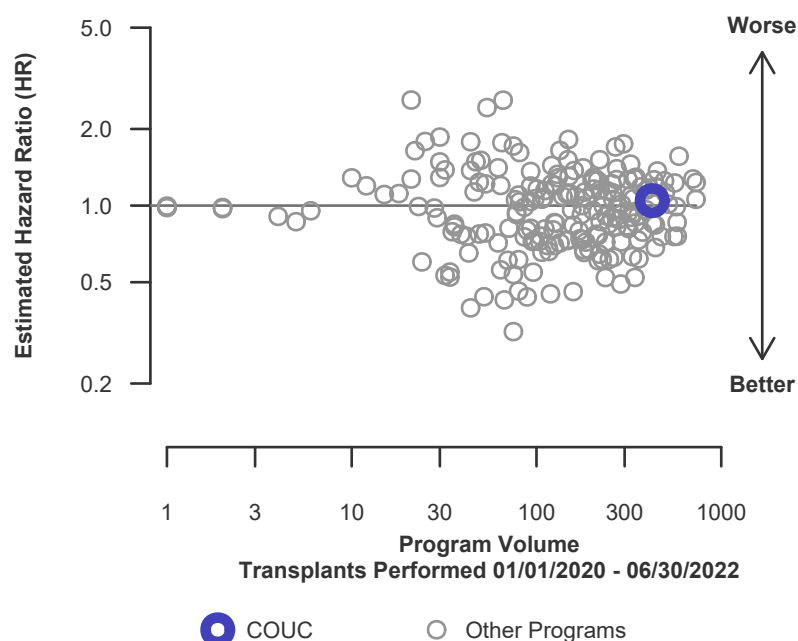


Figure C6D. Adult (18+) 1-year deceased donor graft failure HR program comparison





C. Transplant Information

Table C7L. Adult (18+) 1-year survival with a functioning living donor graft

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

Deaths and retransplants are considered graft failures

Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	COUC	U.S.
Number of transplants evaluated	169	12,817
Estimated probability of surviving with a functioning graft at 1 year (unadjusted for patient and donor characteristics)	97.51%	97.57%
Expected probability of surviving with a functioning graft at 1 year (adjusted for patient and donor characteristics)	97.68%	--
Number of observed graft failures (including deaths) during the first year after transplant	4	270
Number of expected graft failures (including deaths) during the first year after transplant	3.38	--
Estimated hazard ratio*	1.11	--
95% credible interval for the hazard ratio**	[0.41, 2.17]	--

* The hazard ratio provides an estimate of how University of Colorado Hospital/Health Science 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 COUC's graft failure rate were precisely the expected rate, the estimated hazard ratio would be 1.0.

** The 95% credible interval, [0.41, 2.17], indicates the location of COUC's true hazard ratio with 95% probability. The best estimate is 11% higher risk of graft failure compared to an average program, but COUC's performance could plausibly range from 59% reduced risk up to 117% increased risk.

Figure C5L. Adult (18+) 1-year living donor graft failure HR estimate

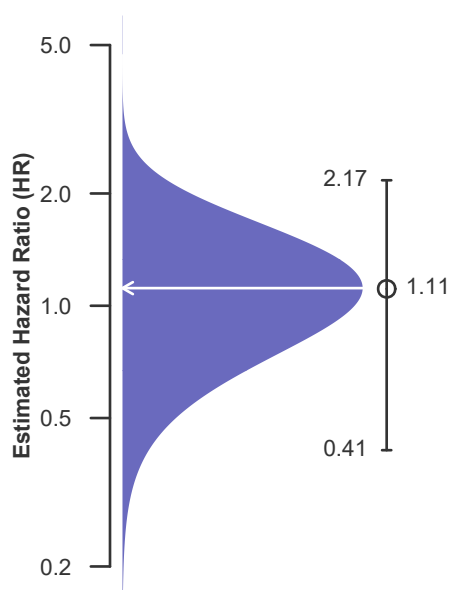
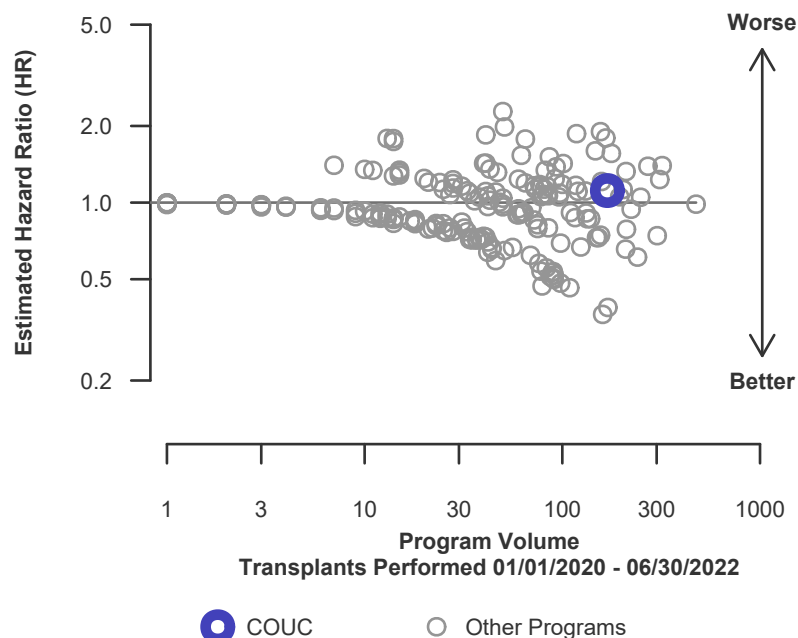


Figure C6L. Adult (18+) 1-year living donor graft failure HR program comparison





C. Transplant Information

Table C8. Adult (18+) 1-year Conditional survival with a functioning graft

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

Deaths and retransplants are considered graft failures

Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	COUC	U.S.
Number of transplants evaluated	518	44,863
Estimated probability of surviving with a functioning graft at 1 year, among patients with a functioning graft at day 90 (unadjusted for patient and donor characteristics)	97.46%	96.71%
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)	97.07%	--
Number of observed graft failures (including deaths) from day 91 through day 365 after transplant	12	1,251
Number of expected graft failures (including deaths) from day 91 through day 365 after transplant	12.40	--
Estimated hazard ratio*	0.97	--
95% credible interval for the hazard ratio**	[0.53, 1.54]	--

* The hazard ratio provides an estimate of how University of Colorado Hospital/Health Science 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 COUC's graft failure rate were precisely the expected rate, the estimated hazard ratio would be 1.0.

** The 95% credible interval, [0.53, 1.54], indicates the location of COUC's true hazard ratio with 95% probability. The best estimate is 3% lower risk of graft failure compared to an average program, but COUC's performance could plausibly range from 47% reduced risk up to 54% increased risk.

Figure C7. Adult (18+) 1-year Conditional graft failure HR estimate

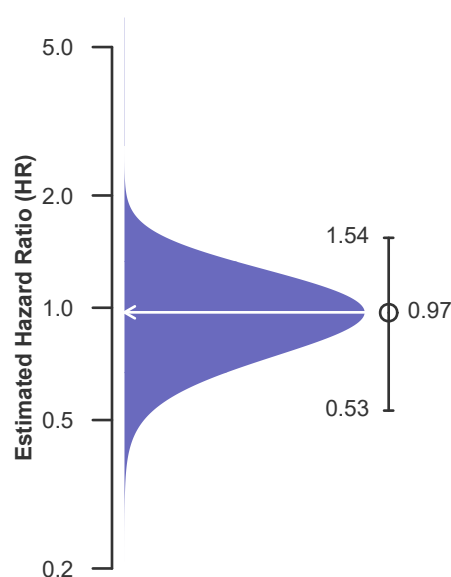
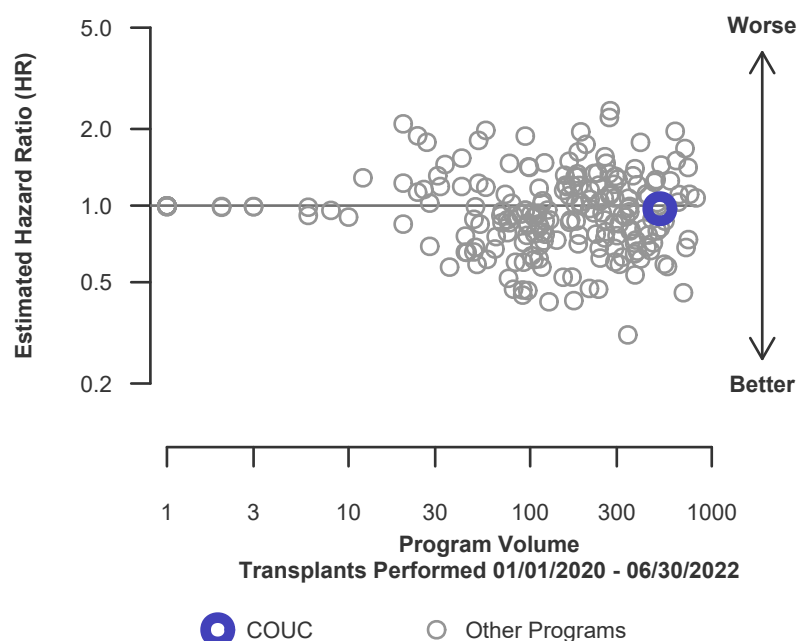


Figure C8. Adult (18+) 1-year Conditional graft failure HR program comparison





C. Transplant Information

Table C8D. Adult (18+) 1-year Conditional survival with a functioning deceased donor graft
Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022
Deaths and retransplants are considered graft failures
Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	COUC	U.S.
Number of transplants evaluated	367	33,454
Estimated probability of surviving with a functioning graft at 1 year, among patients with a functioning graft at day 90 (unadjusted for patient and donor characteristics)	96.95%	96.02%
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)	96.37%	--
Number of observed graft failures (including deaths) from day 91 through day 365 after transplant	10	1,125
Number of expected graft failures (including deaths) from day 91 through day 365 after transplant	10.82	--
Estimated hazard ratio*	0.94	--
95% credible interval for the hazard ratio**	[0.48, 1.54]	--

* The hazard ratio provides an estimate of how University of Colorado Hospital/Health Science 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 COUC's graft failure rate were precisely the expected rate, the estimated hazard ratio would be 1.0.

** The 95% credible interval, [0.48, 1.54], indicates the location of COUC's true hazard ratio with 95% probability. The best estimate is 6% lower risk of graft failure compared to an average program, but COUC's performance could plausibly range from 52% reduced risk up to 54% increased risk.

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

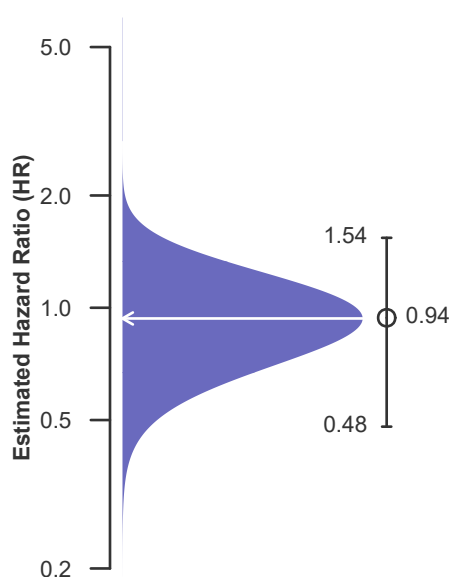
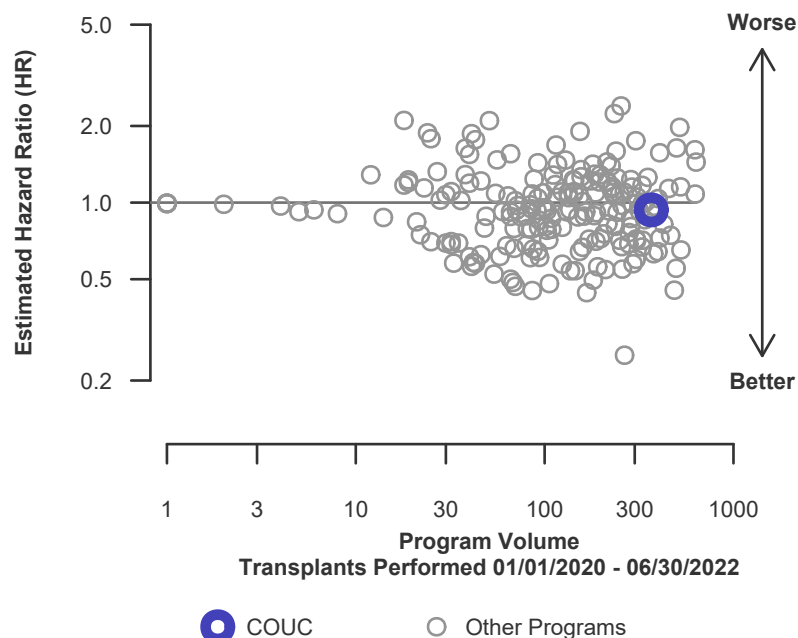


Figure C8D. Adult (18+) 1-year Conditional deceased donor graft failure HR program comparison





C. Transplant Information

Table C8L. Adult (18+) 1-year Conditional survival with a functioning living donor graft

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

Deaths and retransplants are considered graft failures

Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	COUC	U.S.
Number of transplants evaluated	151	11,409
Estimated probability of surviving with a functioning graft at 1 year, among patients with a functioning graft at day 90 (unadjusted for patient and donor characteristics)	98.68%	98.71%
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)	98.77%	--
Number of observed graft failures (including deaths) from day 91 through day 365 after transplant	2	126
Number of expected graft failures (including deaths) from day 91 through day 365 after transplant	1.58	--
Estimated hazard ratio*	1.12	--
95% credible interval for the hazard ratio**	[0.30, 2.45]	--

* The hazard ratio provides an estimate of how University of Colorado Hospital/Health Science 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 COUC's graft failure rate were precisely the expected rate, the estimated hazard ratio would be 1.0.

** The 95% credible interval, [0.30, 2.45], indicates the location of COUC's true hazard ratio with 95% probability. The best estimate is 12% higher risk of graft failure compared to an average program, but COUC's performance could plausibly range from 70% reduced risk up to 145% increased risk.

Figure C7L. Adult (18+) 1-year Conditional living donor graft failure HR estimate

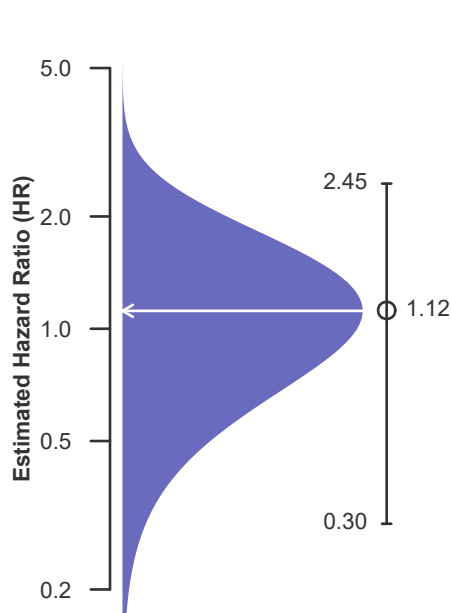
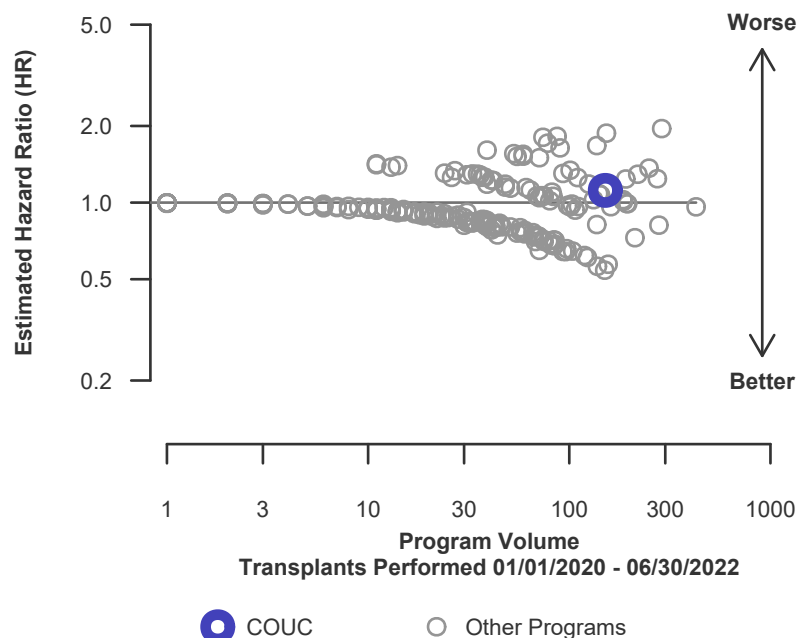


Figure C8L. Adult (18+) 1-year Conditional living donor graft failure HR program comparison





C. Transplant Information

Table C9. Adult (18+) 3-year survival with a functioning graft

Single organ transplants performed between 07/01/2017 and 12/31/2019

Deaths and retransplants are considered graft failures

Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	COUC	U.S.
Number of transplants evaluated	633	50,247
Estimated probability of surviving with a functioning graft at 3 years (unadjusted for patient and donor characteristics)	94.54%	90.92%
Expected probability of surviving with a functioning graft at 3 years (adjusted for patient and donor characteristics)	93.00%	--
Number of observed graft failures (including deaths) during the first 3 years after transplant	24	2,747
Number of expected graft failures (including deaths) during the first 3 years after transplant	26.00	--
Estimated hazard ratio*	0.93	--
95% credible interval for the hazard ratio**	[0.61, 1.32]	--

* The hazard ratio provides an estimate of how University of Colorado Hospital/Health Science 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 COUC's graft failure rate were precisely the expected rate, the estimated hazard ratio would be 1.0.

** The 95% credible interval, [0.61, 1.32], indicates the location of COUC's true hazard ratio with 95% probability. The best estimate is 7% lower risk of graft failure compared to an average program, but COUC's performance could plausibly range from 39% reduced risk up to 32% increased risk.

Figure C9. Adult (18+) 3-year graft failure HR estimate

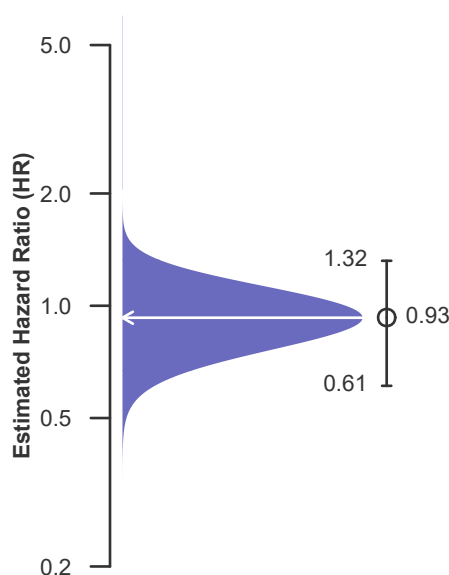
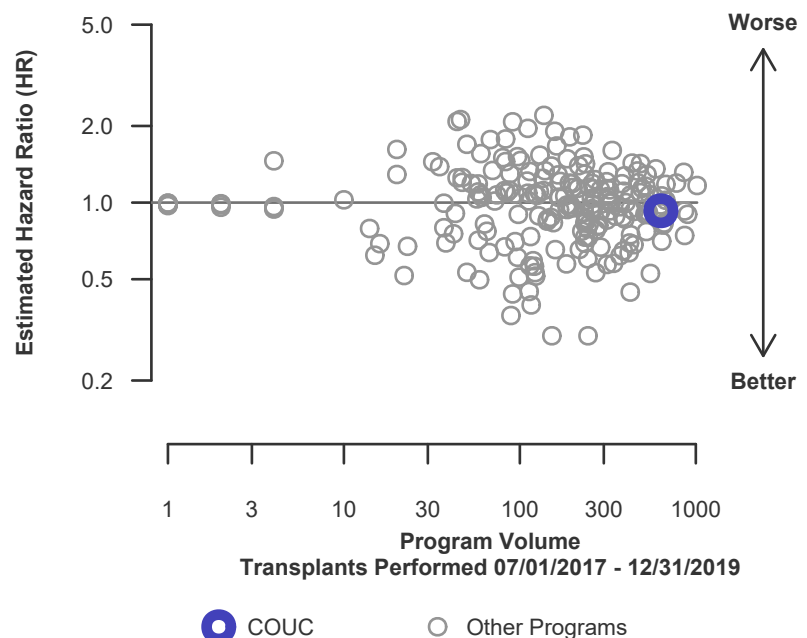


Figure C10. Adult (18+) 3-year graft failure HR program comparison





C. Transplant Information

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

Single organ transplants performed between 07/01/2017 and 12/31/2019

Deaths and retransplants are considered graft failures

Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	COUC	U.S.
Number of transplants evaluated	334	34,628
Estimated probability of surviving with a functioning graft at 3 years (unadjusted for patient and donor characteristics)	92.72%	89.07%
Expected probability of surviving with a functioning graft at 3 years (adjusted for patient and donor characteristics)	91.04%	--
Number of observed graft failures (including deaths) during the first 3 years after transplant	18	2,332
Number of expected graft failures (including deaths) during the first 3 years after transplant	17.99	--
Estimated hazard ratio*	1.00	--
95% credible interval for the hazard ratio**	[0.61, 1.48]	--

* The hazard ratio provides an estimate of how University of Colorado Hospital/Health Science 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 COUC's graft failure rate were precisely the expected rate, the estimated hazard ratio would be 1.0.

** The 95% credible interval, [0.61, 1.48], indicates the location of COUC's true hazard ratio with 95% probability. The best estimate is 0% higher risk of graft failure compared to an average program, but COUC's performance could plausibly range from 39% reduced risk up to 48% increased risk.

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

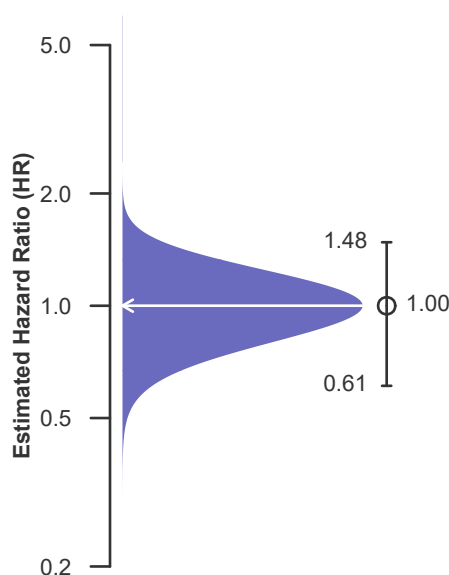
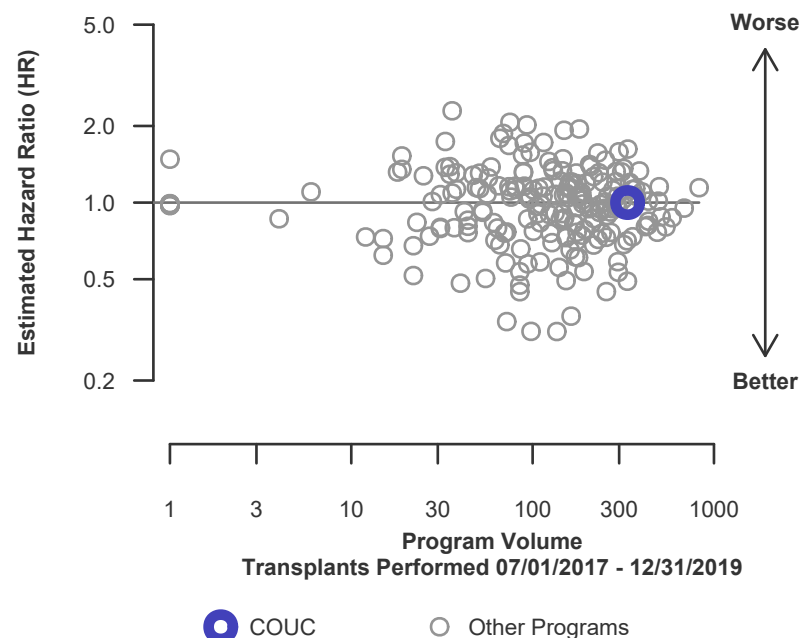


Figure C10D. Adult (18+) 3-year deceased donor graft failure HR program comparison





C. Transplant Information

Table C9L. Adult (18+) 3-year survival with a functioning living donor graft

Single organ transplants performed between 07/01/2017 and 12/31/2019

Deaths and retransplants are considered graft failures

Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	COUC	U.S.
Number of transplants evaluated	299	15,619
Estimated probability of surviving with a functioning graft at 3 years (unadjusted for patient and donor characteristics)	96.61%	95.03%
Expected probability of surviving with a functioning graft at 3 years (adjusted for patient and donor characteristics)	95.20%	--
Number of observed graft failures (including deaths) during the first 3 years after transplant	6	415
Number of expected graft failures (including deaths) during the first 3 years after transplant	8.00	--
Estimated hazard ratio*	0.80	--
95% credible interval for the hazard ratio**	[0.35, 1.44]	--

* The hazard ratio provides an estimate of how University of Colorado Hospital/Health Science 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 COUC's graft failure rate were precisely the expected rate, the estimated hazard ratio would be 1.0.

** The 95% credible interval, [0.35, 1.44], indicates the location of COUC's true hazard ratio with 95% probability. The best estimate is 20% lower risk of graft failure compared to an average program, but COUC's performance could plausibly range from 65% reduced risk up to 44% increased risk.

Figure C9L. Adult (18+) 3-year living donor graft failure HR estimate

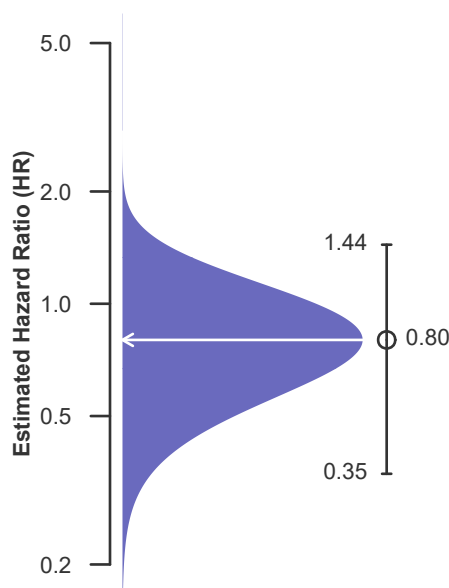
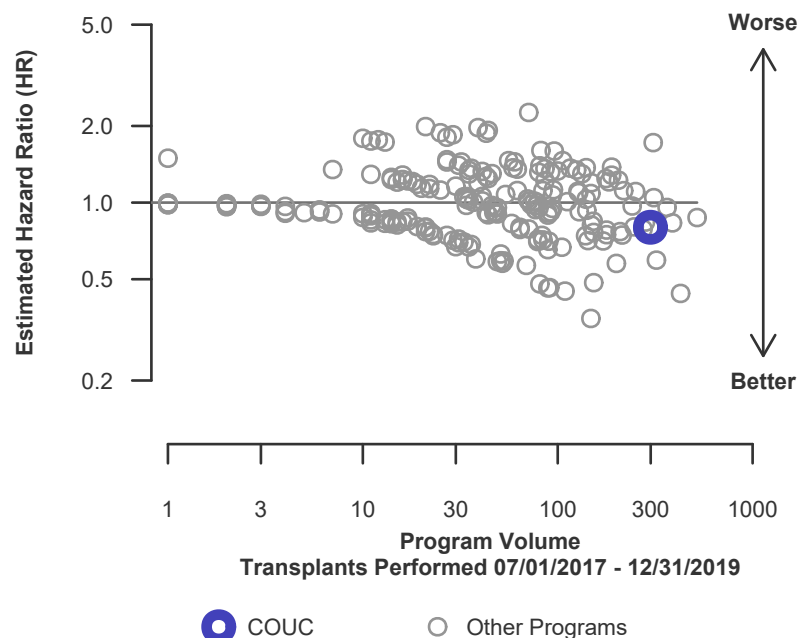


Figure C10L. Adult (18+) 3-year living donor graft failure HR program comparison





C. Transplant Information

Table C10. Pediatric (<18) 1-month survival with a functioning graft

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

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
01/01/2020-06/30/2022

Figure C11. Pediatric (<18) 1-month graft failure HR estimate

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022

Figure C12. Pediatric (<18) 1-month graft failure HR program comparison

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022



C. Transplant Information

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

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

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
01/01/2020-06/30/2022

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

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022

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

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022



C. Transplant Information

Table C10L. Pediatric (<18) 1-month survival with a functioning living donor graft

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

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
01/01/2020-06/30/2022

Figure C11L. Pediatric (<18) 1-month living donor graft failure HR estimate

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022

Figure C12L. Pediatric (<18) 1-month living donor graft failure HR program comparison

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022



C. Transplant Information

Table C11. Pediatric (<18) 90-Day survival with a functioning graft

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

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
01/01/2020-06/30/2022

Figure C13. Pediatric (<18) 90-Day graft failure HR estimate

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022

Figure C14. Pediatric (<18) 90-Day graft failure HR program comparison

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022



C. Transplant Information

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

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

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
01/01/2020-06/30/2022

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

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022

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

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022



C. Transplant Information

Table C11L. Pediatric (<18) 90-Day survival with a functioning living donor graft

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

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
01/01/2020-06/30/2022

Figure C13L. Pediatric (<18) 90-Day living donor graft failure HR estimate

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022

Figure C14L. Pediatric (<18) 90-Day living donor graft failure HR program comparison

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022



C. Transplant Information

Table C12. Pediatric (<18) 1-year survival with a functioning graft

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

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
01/01/2020-06/30/2022

Figure C15. Pediatric (<18) 1-year graft failure HR estimate

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022

Figure C16. Pediatric (<18) 1-year graft failure HR program comparison

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022



C. Transplant Information

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

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

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
01/01/2020-06/30/2022

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

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022

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

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022



C. Transplant Information

Table C12L. Pediatric (<18) 1-year survival with a functioning living donor graft

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

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
01/01/2020-06/30/2022

Figure C15L. Pediatric (<18) 1-year living donor graft failure HR estimate

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022

Figure C16L. Pediatric (<18) 1-year living donor graft failure HR program comparison

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022



C. Transplant Information

Table C13. Pediatric (<18) 1-year Conditional survival with a functioning graft

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

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
01/01/2020-06/30/2022

Figure C17. Pediatric (<18) 1-year Conditional graft failure HR estimate

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022

Figure C18. Pediatric (<18) 1-year Conditional graft failure HR program comparison

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022



C. Transplant Information

Table C13D. Pediatric (<18) 1-year Conditional survival with a functioning deceased donor graft
Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022
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
01/01/2020-06/30/2022

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

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022

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

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022



C. Transplant Information

Table C13L. Pediatric (<18) 1-year Conditional survival with a functioning living donor graft

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

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
01/01/2020-06/30/2022

Figure C17L. Pediatric (<18) 1-year Conditional living donor graft failure HR estimate

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022

Figure C18L. Pediatric (<18) 1-year Conditional living donor graft failure HR program comparison

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022



C. Transplant Information

Table C14. Pediatric (<18) 3-year survival with a functioning graft

Single organ transplants performed between 07/01/2017 and 12/31/2019

Deaths and retransplants are considered graft failures

Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	COUC	U.S.
Number of transplants evaluated	1	2,123
Estimated probability of surviving with a functioning graft at 3 years (unadjusted for patient and donor characteristics)	100.00%	95.54%
Expected probability of surviving with a functioning graft at 3 years (adjusted for patient and donor characteristics)	98.27%	--
Number of observed graft failures (including deaths) during the first 3 years after transplant	0	55
Number of expected graft failures (including deaths) during the first 3 years after transplant	0.01	--
Estimated hazard ratio*	0.99	--
95% credible interval for the hazard ratio**	[0.12, 2.77]	--

* The hazard ratio provides an estimate of how University of Colorado Hospital/Health Science 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 COUC's graft failure rate were precisely the expected rate, the estimated hazard ratio would be 1.0.

** The 95% credible interval, [0.12, 2.77], indicates the location of COUC's true hazard ratio with 95% probability. The best estimate is 1% lower risk of graft failure compared to an average program, but COUC's performance could plausibly range from 88% reduced risk up to 177% increased risk.

Figure C19. Pediatric (<18) 3-year graft failure HR estimate

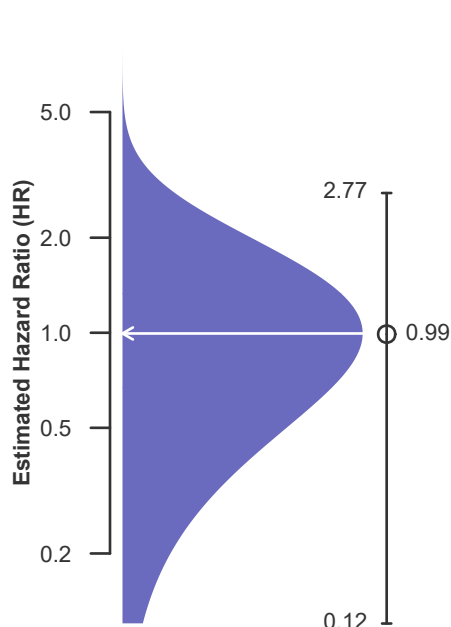
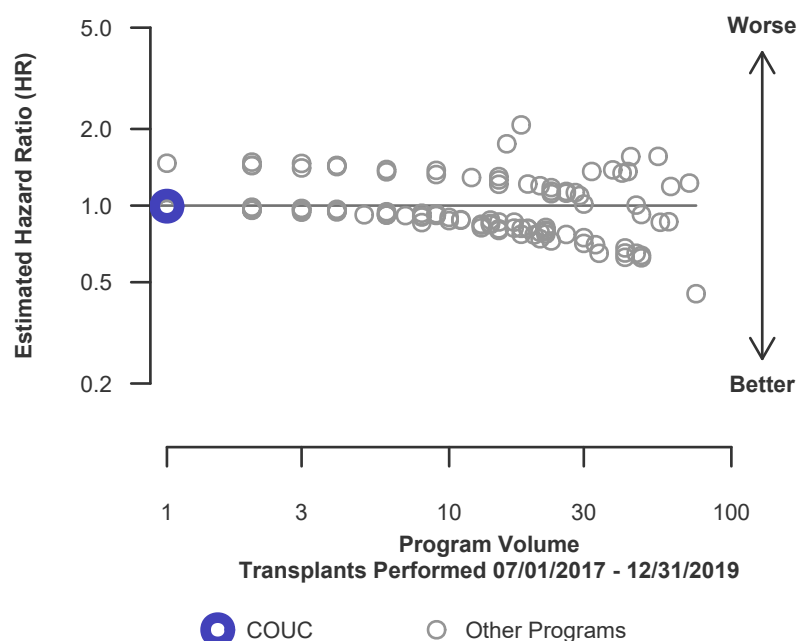


Figure C20. Pediatric (<18) 3-year graft failure HR program comparison





C. Transplant Information

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

Single organ transplants performed between 07/01/2017 and 12/31/2019

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
07/01/2017-12/31/2019

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

This center did not perform any
transplants relevant to
this figure during
07/01/2017-12/31/2019

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

This center did not perform any
transplants relevant to
this figure during
07/01/2017-12/31/2019



C. Transplant Information

Table C14L. Pediatric (<18) 3-year survival with a functioning living donor graft

Single organ transplants performed between 07/01/2017 and 12/31/2019

Deaths and retransplants are considered graft failures

Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	COUC	U.S.
Number of transplants evaluated	1	695
Estimated probability of surviving with a functioning graft at 3 years (unadjusted for patient and donor characteristics)	100.00%	98.27%
Expected probability of surviving with a functioning graft at 3 years (adjusted for patient and donor characteristics)	98.27%	--
Number of observed graft failures (including deaths) during the first 3 years after transplant	0	10
Number of expected graft failures (including deaths) during the first 3 years after transplant	0.01	--
Estimated hazard ratio*	0.99	--
95% credible interval for the hazard ratio**	[0.12, 2.77]	--

* The hazard ratio provides an estimate of how University of Colorado Hospital/Health Science 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 COUC's graft failure rate were precisely the expected rate, the estimated hazard ratio would be 1.0.

** The 95% credible interval, [0.12, 2.77], indicates the location of COUC's true hazard ratio with 95% probability. The best estimate is 1% lower risk of graft failure compared to an average program, but COUC's performance could plausibly range from 88% reduced risk up to 177% increased risk.

Figure C19L. Pediatric (<18) 3-year living donor graft failure HR estimate

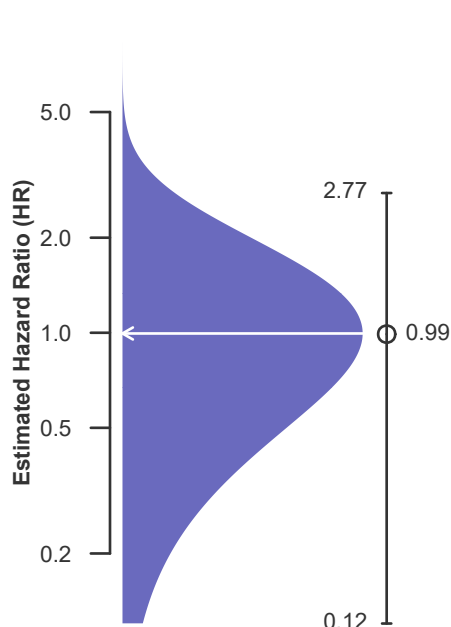
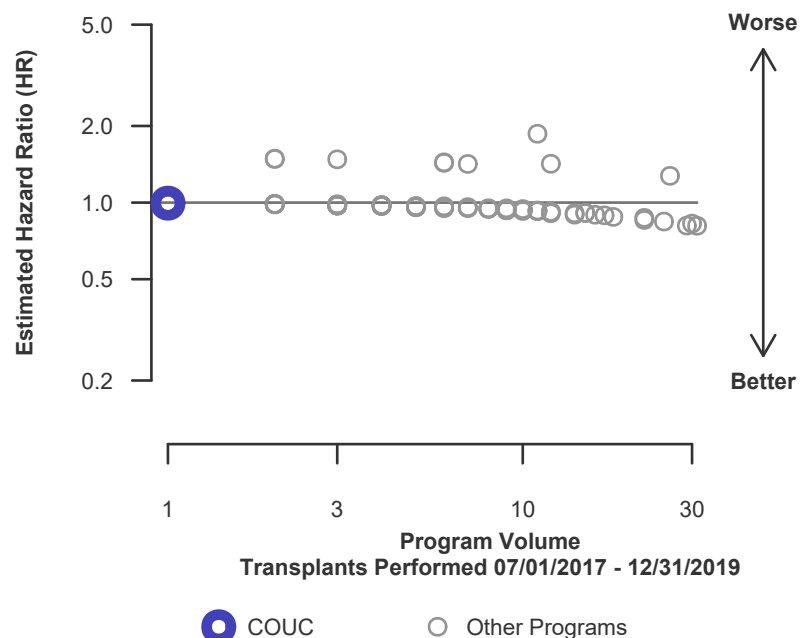


Figure C20L. Pediatric (<18) 3-year living donor graft failure HR program comparison





C. Transplant Information

Table C15. Adult (18+) 1-month patient survival

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

Retransplants excluded

Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	COUC	U.S.
Number of transplants evaluated	539	45,363
Estimated probability of surviving at 1 month (unadjusted for patient and donor characteristics)	99.25%	99.46%
Expected probability of surviving at 1 month (adjusted for patient and donor characteristics)	99.52%	--
Number of observed deaths during the first month after transplant	4	243
Number of expected deaths during the first month after transplant	2.51	--
Estimated hazard ratio*	1.33	--
95% credible interval for the hazard ratio**	[0.49, 2.58]	--

* The hazard ratio provides an estimate of how University of Colorado Hospital/Health Science 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 COUC's patient death rate were precisely the expected rate, the estimated hazard ratio would be 1.0.

** The 95% credible interval, [0.49, 2.58], indicates the location of COUC's true hazard ratio with 95% probability. The best estimate is 33% higher risk of patient death compared to an average program, but COUC's performance could plausibly range from 51% reduced risk up to 158% increased risk.

Figure C21. Adult (18+) 1-month patient death HR estimate

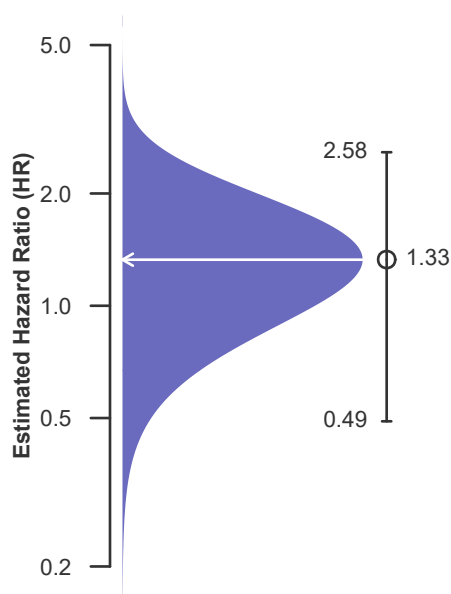
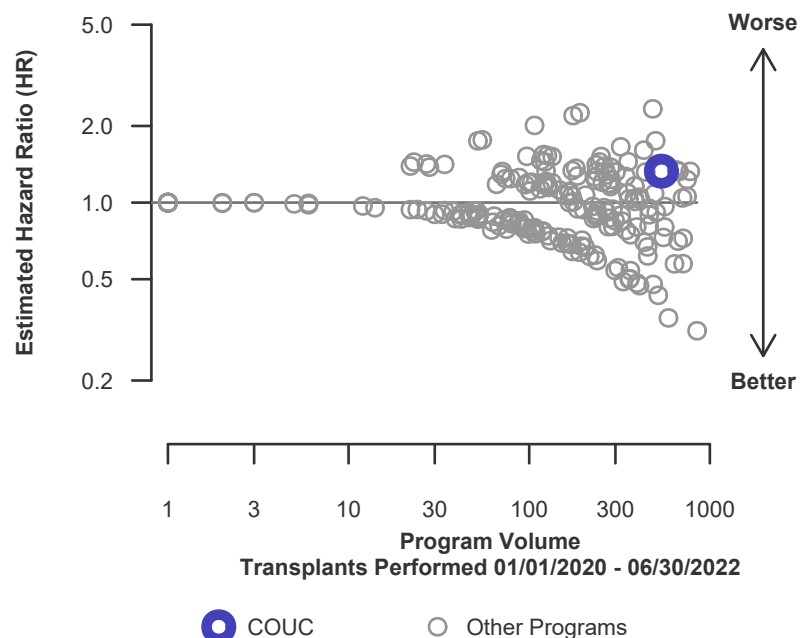


Figure C22. Adult (18+) 1-month patient death HR program comparison





C. Transplant Information

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

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

Retransplants excluded

Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	COUC	U.S.
Number of transplants evaluated	382	33,654
Estimated probability of surviving at 1 month (unadjusted for patient and donor characteristics)	98.95%	99.35%
Expected probability of surviving at 1 month (adjusted for patient and donor characteristics)	99.41%	--
Number of observed deaths during the first month after transplant	4	217
Number of expected deaths during the first month after transplant	2.19	--
Estimated hazard ratio*	1.43	--
95% credible interval for the hazard ratio**	[0.53, 2.78]	--

* The hazard ratio provides an estimate of how University of Colorado Hospital/Health Science 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 COUC's patient death rate were precisely the expected rate, the estimated hazard ratio would be 1.0.

** The 95% credible interval, [0.53, 2.78], indicates the location of COUC's true hazard ratio with 95% probability. The best estimate is 43% higher risk of patient death compared to an average program, but COUC's performance could plausibly range from 47% reduced risk up to 178% increased risk.

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

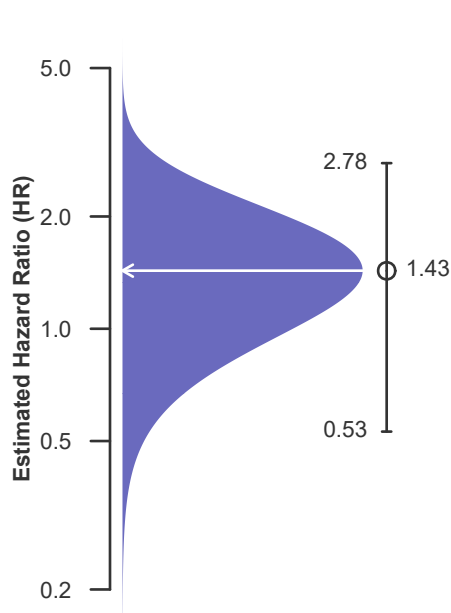
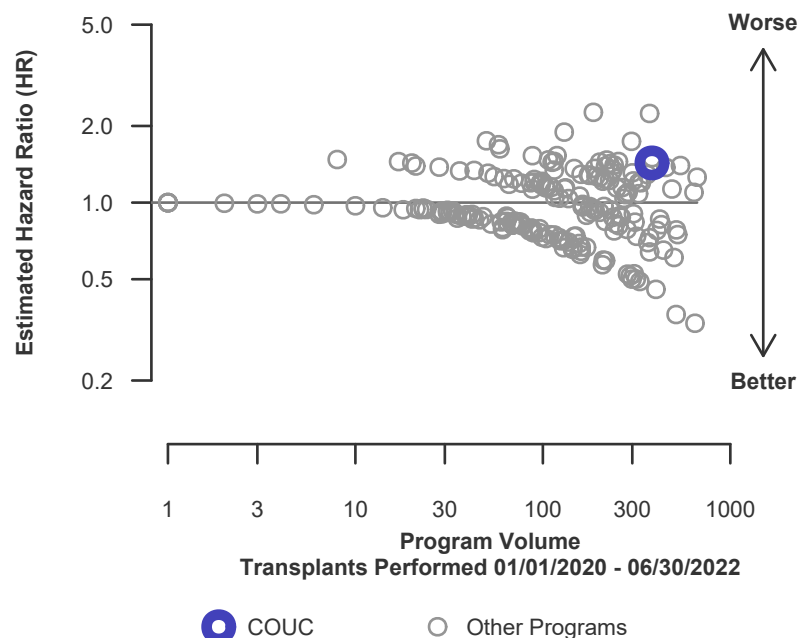


Figure C22D. Adult (18+) 1-month patient death HR program comparison (deceased donor grafts)





C. Transplant Information

Table C15L. Adult (18+) 1-month patient survival (living donor graft recipients)

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

Retransplants excluded

Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	COUC	U.S.
Number of transplants evaluated	157	11,709
Estimated probability of surviving at 1 month (unadjusted for patient and donor characteristics)	100.00%	99.77%
Expected probability of surviving at 1 month (adjusted for patient and donor characteristics)	99.79%	--
Number of observed deaths during the first month after transplant	0	26
Number of expected deaths during the first month after transplant	0.32	--
Estimated hazard ratio*	0.86	--
95% credible interval for the hazard ratio**	[0.10, 2.40]	--

* The hazard ratio provides an estimate of how University of Colorado Hospital/Health Science 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 COUC's patient death rate were precisely the expected rate, the estimated hazard ratio would be 1.0.

** The 95% credible interval, [0.10, 2.40], indicates the location of COUC's true hazard ratio with 95% probability. The best estimate is 14% lower risk of patient death compared to an average program, but COUC's performance could plausibly range from 90% reduced risk up to 140% increased risk.

Figure C21L. Adult (18+) 1-month patient death HR estimate (living donor grafts)

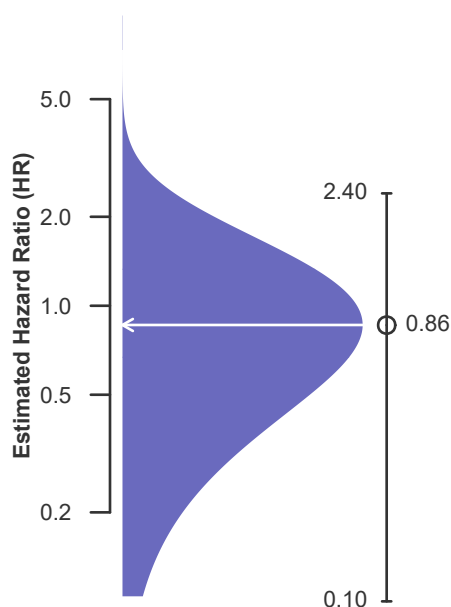
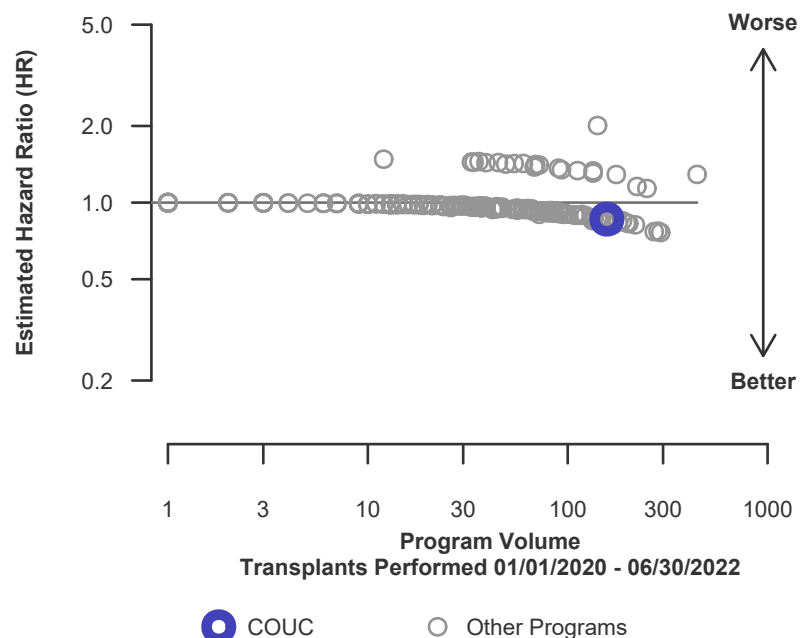


Figure C22L. Adult (18+) 1-month patient death HR program comparison (living donor grafts)





C. Transplant Information

Table C16. Adult (18+) 1-year patient survival

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

Retransplants excluded

Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	COUC	U.S.
Number of transplants evaluated	539	45,363
Estimated probability of surviving at 1 year (unadjusted for patient and donor characteristics)	96.76%	96.12%
Expected probability of surviving at 1 year (adjusted for patient and donor characteristics)	96.57%	--
Number of observed deaths during the first year after transplant	15	1,447
Number of expected deaths during the first year after transplant	14.69	--
Estimated hazard ratio*	1.02	--
95% credible interval for the hazard ratio**	[0.59, 1.56]	--

* The hazard ratio provides an estimate of how University of Colorado Hospital/Health Science 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 COUC's patient death rate were precisely the expected rate, the estimated hazard ratio would be 1.0.

** The 95% credible interval, [0.59, 1.56], indicates the location of COUC's true hazard ratio with 95% probability. The best estimate is 2% higher risk of patient death compared to an average program, but COUC's performance could plausibly range from 41% reduced risk up to 56% increased risk.

Figure C23. Adult (18+) 1-year patient death HR estimate

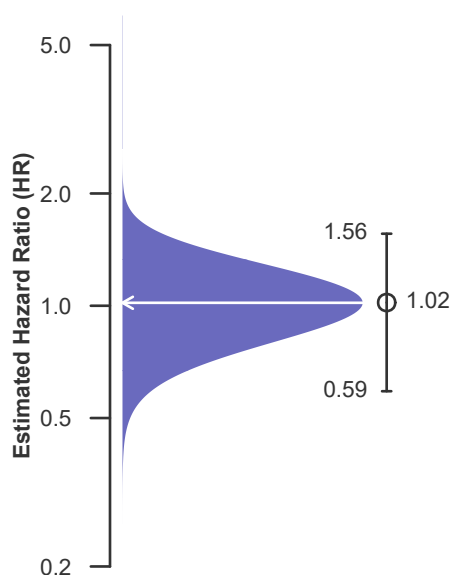
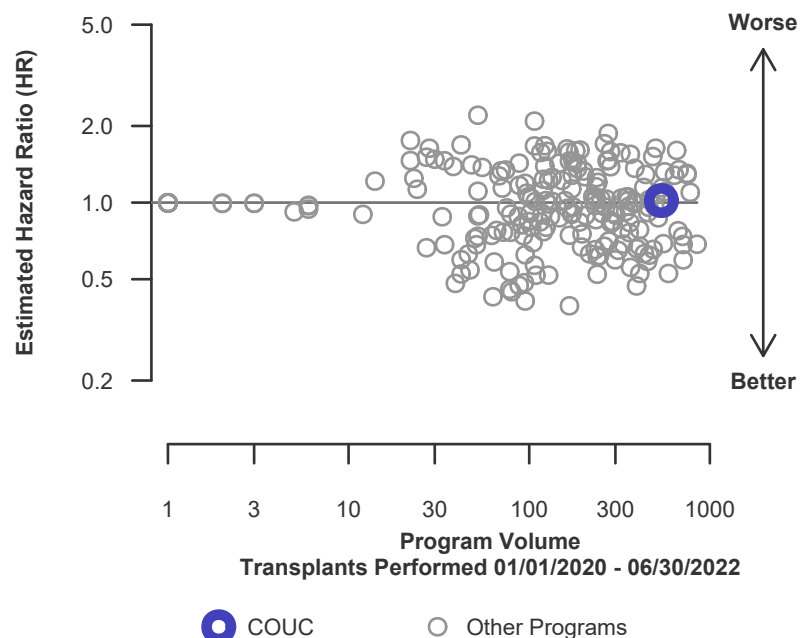


Figure C24. Adult (18+) 1-year patient death HR program comparison





C. Transplant Information

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

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

Retransplants excluded

Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	COUC	U.S.
Number of transplants evaluated	382	33,654
Estimated probability of surviving at 1 year (unadjusted for patient and donor characteristics)	95.69%	95.32%
Expected probability of surviving at 1 year (adjusted for patient and donor characteristics)	95.76%	--
Number of observed deaths during the first year after transplant	14	1,298
Number of expected deaths during the first year after transplant	12.85	--
Estimated hazard ratio*	1.08	--
95% credible interval for the hazard ratio**	[0.62, 1.67]	--

* The hazard ratio provides an estimate of how University of Colorado Hospital/Health Science 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 COUC's patient death rate were precisely the expected rate, the estimated hazard ratio would be 1.0.

** The 95% credible interval, [0.62, 1.67], indicates the location of COUC's true hazard ratio with 95% probability. The best estimate is 8% higher risk of patient death compared to an average program, but COUC's performance could plausibly range from 38% reduced risk up to 67% increased risk.

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

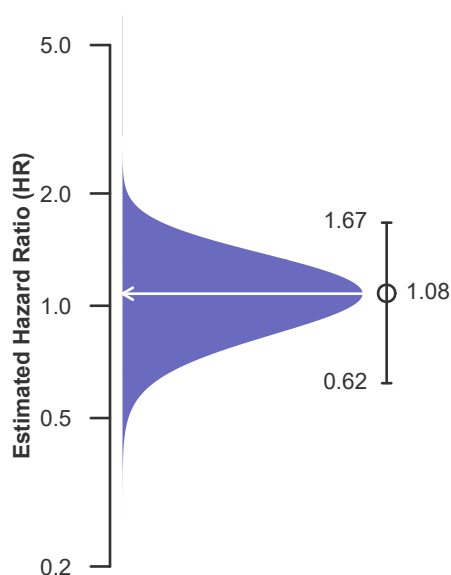
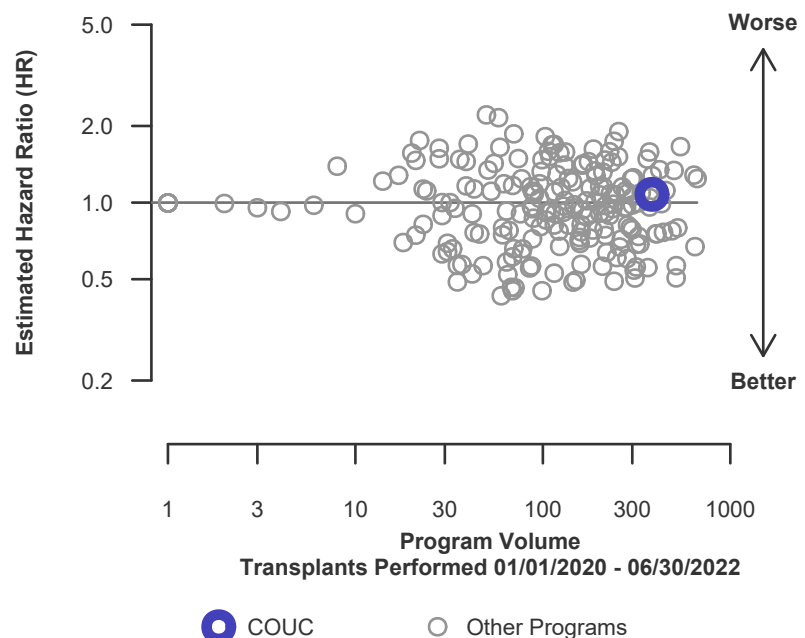


Figure C24D. Adult (18+) 1-year patient death HR program comparison (deceased donor grafts)





C. Transplant Information

Table C16L. Adult (18+) 1-year patient survival (living donor graft recipients)

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

Retransplants excluded

Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	COUC	U.S.
Number of transplants evaluated	157	11,709
Estimated probability of surviving at 1 year (unadjusted for patient and donor characteristics)	99.30%	98.45%
Expected probability of surviving at 1 year (adjusted for patient and donor characteristics)	98.55%	--
Number of observed deaths during the first year after transplant	1	149
Number of expected deaths during the first year after transplant	1.84	--
Estimated hazard ratio*	0.78	--
95% credible interval for the hazard ratio**	[0.16, 1.88]	--

* The hazard ratio provides an estimate of how University of Colorado Hospital/Health Science 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 COUC's patient death rate were precisely the expected rate, the estimated hazard ratio would be 1.0.

** The 95% credible interval, [0.16, 1.88], indicates the location of COUC's true hazard ratio with 95% probability. The best estimate is 22% lower risk of patient death compared to an average program, but COUC's performance could plausibly range from 84% reduced risk up to 88% increased risk.

Figure C23L. Adult (18+) 1-year patient death HR estimate (living donor grafts)

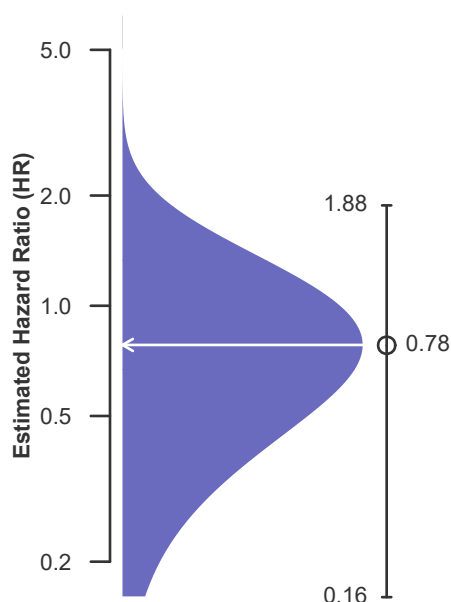
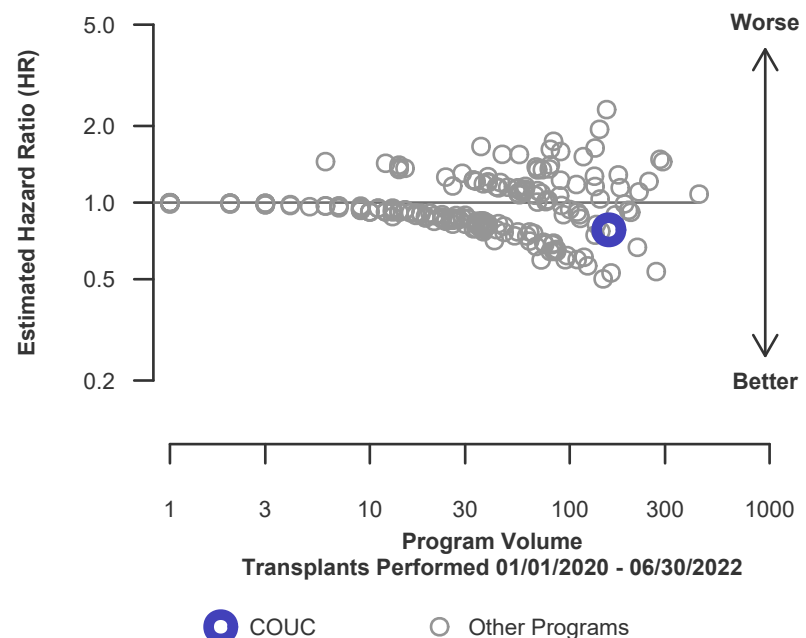


Figure C24L. Adult (18+) 1-year patient death HR program comparison (living donor grafts)





C. Transplant Information

Table C17. Adult (18+) 3-year patient survival

Single organ transplants performed between 07/01/2017 and 12/31/2019

Retransplants excluded

Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	COUC	U.S.
Number of transplants evaluated	559	44,656
Estimated probability of surviving at 3 years (unadjusted for patient and donor characteristics)	98.07%	94.65%
Expected probability of surviving at 3 years (adjusted for patient and donor characteristics)	95.69%	--
Number of observed deaths during the first 3 years after transplant	7	1,373
Number of expected deaths during the first 3 years after transplant	13.80	--
Estimated hazard ratio*	0.57	--
95% credible interval for the hazard ratio**	[0.26, 1.00]	--

* The hazard ratio provides an estimate of how University of Colorado Hospital/Health Science 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 COUC's patient death rate were precisely the expected rate, the estimated hazard ratio would be 1.0.

** The 95% credible interval, [0.26, 1.00], indicates the location of COUC's true hazard ratio with 95% probability. The best estimate is 43% lower risk of patient death compared to an average program, but COUC's performance could plausibly range from 74% reduced risk up to 0% reduced risk.

Figure C25. Adult (18+) 3-year patient death HR estimate

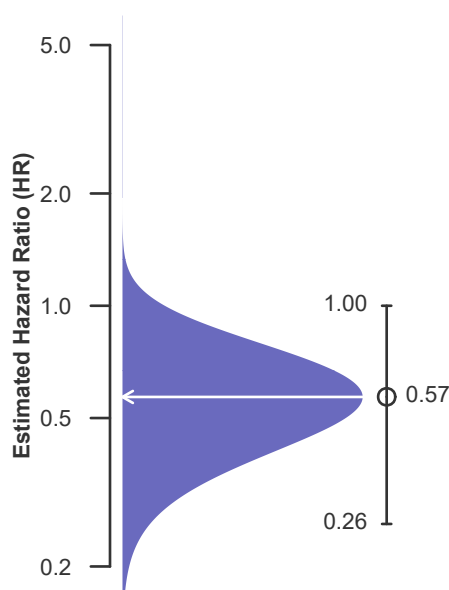
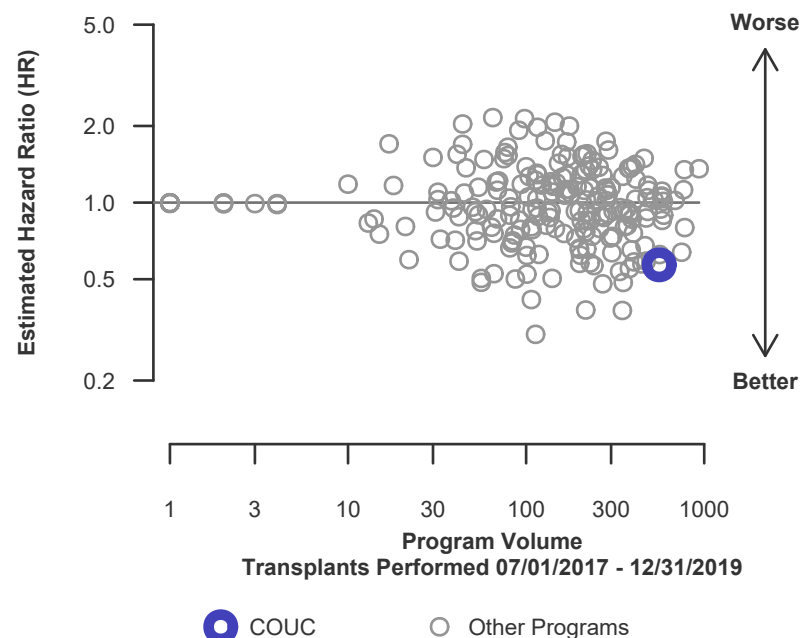


Figure C26. Adult (18+) 3-year patient death HR program comparison





C. Transplant Information

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

Single organ transplants performed between 07/01/2017 and 12/31/2019

Retransplants excluded

Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	COUC	U.S.
Number of transplants evaluated	291	30,518
Estimated probability of surviving at 3 years (unadjusted for patient and donor characteristics)	96.94%	93.41%
Expected probability of surviving at 3 years (adjusted for patient and donor characteristics)	94.02%	--
Number of observed deaths during the first 3 years after transplant	6	1,185
Number of expected deaths during the first 3 years after transplant	10.44	--
Estimated hazard ratio*	0.64	--
95% credible interval for the hazard ratio**	[0.28, 1.16]	--

* The hazard ratio provides an estimate of how University of Colorado Hospital/Health Science 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 COUC's patient death rate were precisely the expected rate, the estimated hazard ratio would be 1.0.

** The 95% credible interval, [0.28, 1.16], indicates the location of COUC's true hazard ratio with 95% probability. The best estimate is 36% lower risk of patient death compared to an average program, but COUC's performance could plausibly range from 72% reduced risk up to 16% increased risk.

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

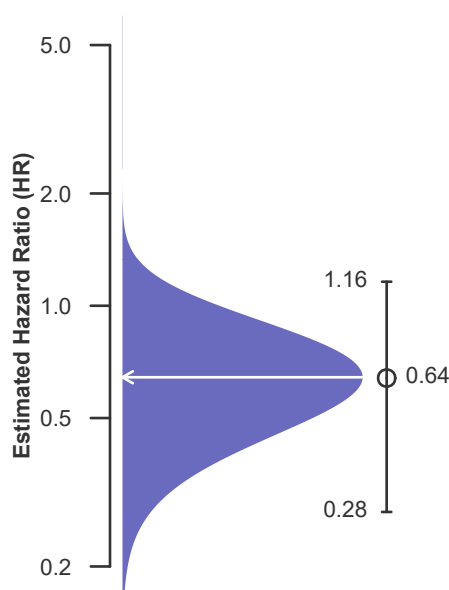
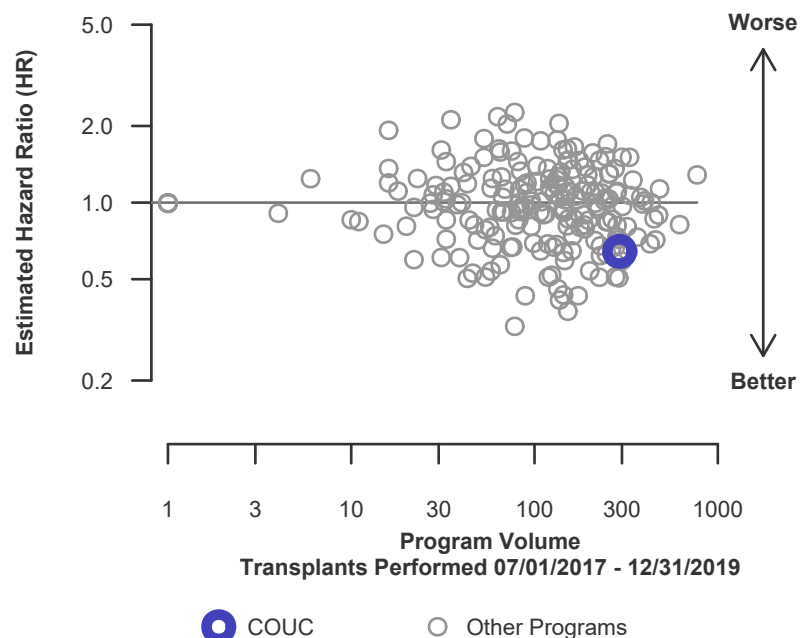


Figure C26D. Adult (18+) 3-year patient death HR program comparison (deceased donor grafts)





C. Transplant Information

Table C17L. Adult (18+) 3-year patient survival (living donor graft recipients)

Single organ transplants performed between 07/01/2017 and 12/31/2019

Retransplants excluded

Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	COUC	U.S.
Number of transplants evaluated	268	14,138
Estimated probability of surviving at 3 years (unadjusted for patient and donor characteristics)	99.24%	97.32%
Expected probability of surviving at 3 years (adjusted for patient and donor characteristics)	97.50%	--
Number of observed deaths during the first 3 years after transplant	1	188
Number of expected deaths during the first 3 years after transplant	3.36	--
Estimated hazard ratio*	0.56	--
95% credible interval for the hazard ratio**	[0.12, 1.35]	--

* The hazard ratio provides an estimate of how University of Colorado Hospital/Health Science 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 COUC's patient death rate were precisely the expected rate, the estimated hazard ratio would be 1.0.

** The 95% credible interval, [0.12, 1.35], indicates the location of COUC's true hazard ratio with 95% probability. The best estimate is 44% lower risk of patient death compared to an average program, but COUC's performance could plausibly range from 88% reduced risk up to 35% increased risk.

Figure C25L. Adult (18+) 3-year patient death HR estimate (living donor grafts)

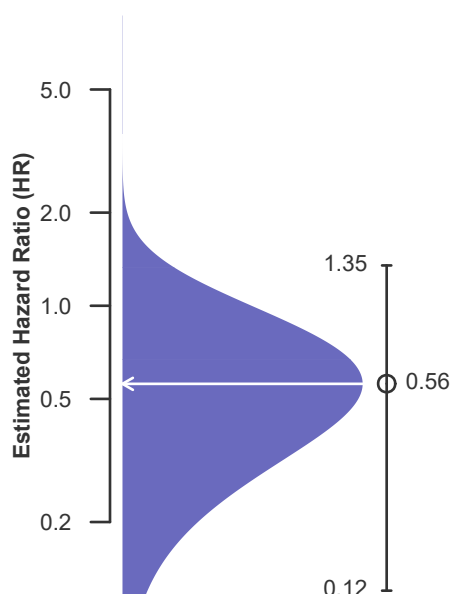
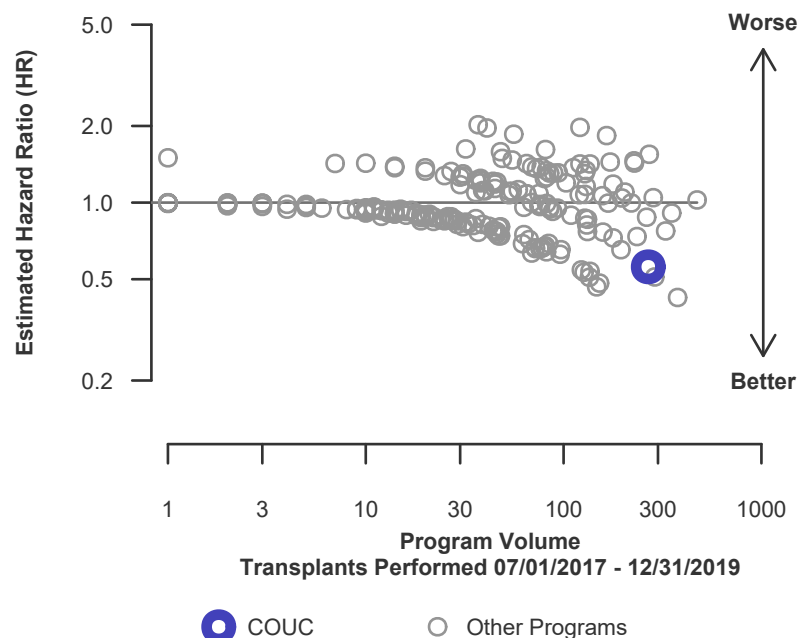


Figure C26L. Adult (18+) 3-year patient death HR program comparison (living donor grafts)





C. Transplant Information

Table C18. Pediatric (<18) 1-month patient survival

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

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
01/01/2020-06/30/2022

Figure C27. Pediatric (<18) 1-month patient death HR estimate

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022

Figure C28. Pediatric (<18) 1-month patient death HR program comparison

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022



C. Transplant Information

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

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

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
01/01/2020-06/30/2022

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

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022

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

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022



C. Transplant Information

Table C18L. Pediatric (<18) 1-month patient survival (living donor graft recipients)

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

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
01/01/2020-06/30/2022

Figure C27L. Pediatric (<18) 1-month patient death HR estimate (living donor grafts)

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022

Figure C28L. Pediatric (<18) 1-month patient death HR program comparison (living donor grafts)

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022



C. Transplant Information

Table C19. Pediatric (<18) 1-year patient survival

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

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
01/01/2020-06/30/2022

Figure C29. Pediatric (<18) 1-year patient death HR estimate

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022

Figure C30. Pediatric (<18) 1-year patient death HR program comparison

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022



C. Transplant Information

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

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

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
01/01/2020-06/30/2022

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

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022

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

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022



C. Transplant Information

Table C19L. Pediatric (<18) 1-year patient survival (living donor graft recipients)

Single organ transplants performed between 01/01/2020 and 03/12/2020, and 06/13/2020 and 06/30/2022

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
01/01/2020-06/30/2022

Figure C29L. Pediatric (<18) 1-year patient death HR estimate (living donor grafts)

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022

Figure C30L. Pediatric (<18) 1-year patient death HR program comparison (living donor grafts)

This center did not perform any
transplants relevant to
this figure during
01/01/2020-06/30/2022



C. Transplant Information

Table C20. Pediatric (<18) 3-year patient survival

Single organ transplants performed between 07/01/2017 and 12/31/2019

Retransplants excluded

Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	COUC	U.S.
Number of transplants evaluated	1	1,938
Estimated probability of surviving at 3 years (unadjusted for patient and donor characteristics)	100.00%	99.17%
Expected probability of surviving at 3 years (adjusted for patient and donor characteristics)	99.46%	--
Number of observed deaths during the first 3 years after transplant	0	10
Number of expected deaths during the first 3 years after transplant	0.00	--
Estimated hazard ratio*	1.00	--
95% credible interval for the hazard ratio**	[0.12, 2.78]	--

* The hazard ratio provides an estimate of how University of Colorado Hospital/Health Science 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 COUC's patient death rate were precisely the expected rate, the estimated hazard ratio would be 1.0.

** The 95% credible interval, [0.12, 2.78], indicates the location of COUC's true hazard ratio with 95% probability. The best estimate is 0% lower risk of patient death compared to an average program, but COUC's performance could plausibly range from 88% reduced risk up to 178% increased risk.

Figure C31. Pediatric (<18) 3-year patient death HR estimate

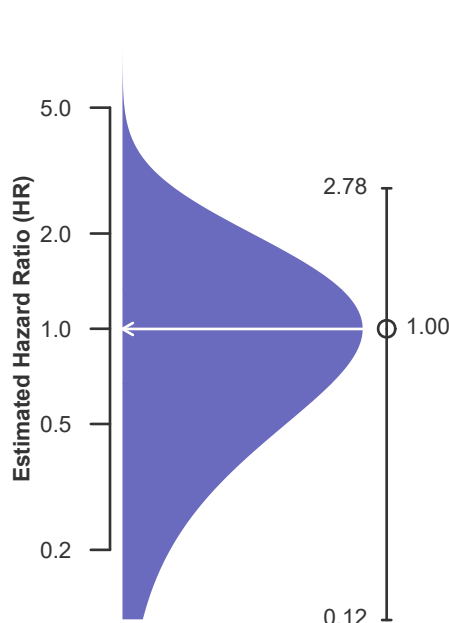
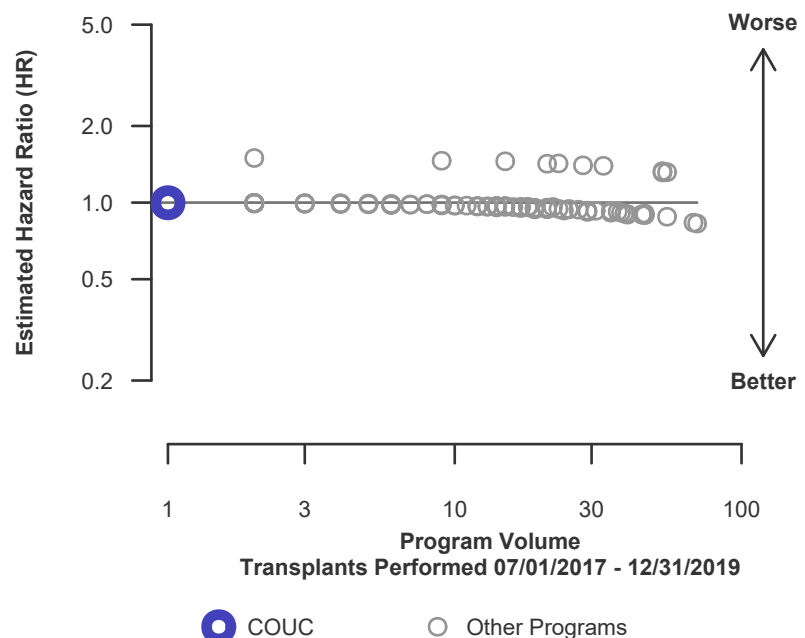


Figure C32. Pediatric (<18) 3-year patient death HR program comparison





C. Transplant Information

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

Single organ transplants performed between 07/01/2017 and 12/31/2019

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
07/01/2017-12/31/2019

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

This center did not perform any
transplants relevant to
this figure during
07/01/2017-12/31/2019

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

This center did not perform any
transplants relevant to
this figure during
07/01/2017-12/31/2019



C. Transplant Information

Table C20L. Pediatric (<18) 3-year patient survival (living donor graft recipients)

Single organ transplants performed between 07/01/2017 and 12/31/2019

Retransplants excluded

Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	COUC	U.S.
Number of transplants evaluated	1	648
Estimated probability of surviving at 3 years (unadjusted for patient and donor characteristics)	100.00%	99.46%
Expected probability of surviving at 3 years (adjusted for patient and donor characteristics)	99.46%	--
Number of observed deaths during the first 3 years after transplant	0	3
Number of expected deaths during the first 3 years after transplant	0.00	--
Estimated hazard ratio*	1.00	--
95% credible interval for the hazard ratio**	[0.12, 2.78]	--

* The hazard ratio provides an estimate of how University of Colorado Hospital/Health Science 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 COUC's patient death rate were precisely the expected rate, the estimated hazard ratio would be 1.0.

** The 95% credible interval, [0.12, 2.78], indicates the location of COUC's true hazard ratio with 95% probability. The best estimate is 0% lower risk of patient death compared to an average program, but COUC's performance could plausibly range from 88% reduced risk up to 178% increased risk.

Figure C31L. Pediatric (<18) 3-year patient death HR estimate (living donor grafts)

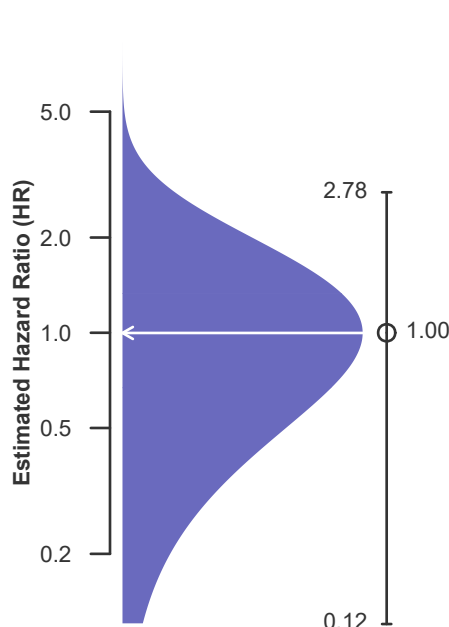
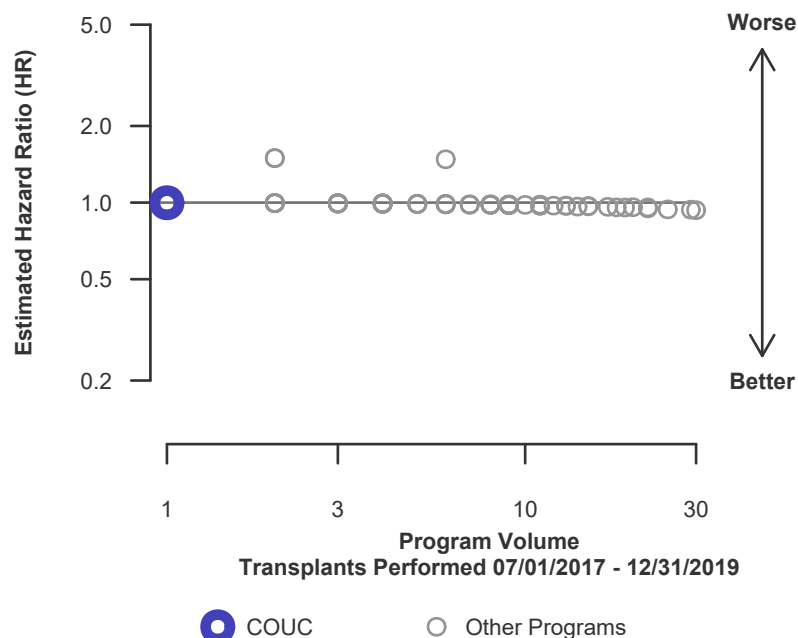


Figure C32L. Pediatric (<18) 3-year patient death HR program comparison (living donor grafts)





C. Transplant Information

Table C21. Multi-organ transplant graft survival: 01/01/2020 - 06/30/2022

Adult (18+) Transplants

Transplant Type	First-Year Outcomes					
	Transplants Performed		Kidney Graft Failures		Estimated Kidney Graft Survival	
	COUC-TX1	USA	COUC-TX1	USA	COUC-TX1	USA
Kidney-Heart	3	820	0	119	100.0%	85.5%
Kidney-Liver (Two Living Donors)	1	1	0	0	100.0%	100.0%
Kidney-Liver	15	1,905	3	232	80.0%	87.8%
Kidney-Pancreas	12	2,007	0	92	100.0%	95.4%

Pediatric (<18) Transplants

No pediatric (<18) multi-organ transplants were performed

Table C22. Multi-organ transplant patient survival: 01/01/2020 - 06/30/2022

Adult (18+) Transplants

Transplant Type	First-Year Outcomes					
	Transplants Performed		Patient Deaths		Estimated Patient Survival	
	COUC-TX1	USA	COUC-TX1	USA	COUC-TX1	USA
Kidney-Heart	3	820	0	88	100.0%	89.3%
Kidney-Liver (Two Living Donors)	1	1	0	0	100.0%	100.0%
Kidney-Liver	15	1,905	2	188	86.7%	90.1%
Kidney-Pancreas	12	2,007	0	68	100.0%	96.6%

Pediatric (<18) Transplants

No pediatric (<18) multi-organ transplants were performed



D. Living Donor Information

Table D1. Living donor summary: 01/01/2020 - 12/31/2022

Living Donor Follow-Up	This Center			United States		
	01/2020- 12/2020	01/2021- 12/2021	01/2022- 06/2022	01/2020- 12/2020	01/2021- 12/2021	01/2022- 06/2022
Number of Living Donors	85	91	45	5,234	5,971	2,870
6-Month Follow-Up						
Donors due for follow-up	23	91	41	1,417	5,969	2,332
Timely clinical data	21 91.3%	82 90.1%	34 82.9%	1,254 88.5%	5,220 87.5%	1,947 83.5%
Timely lab data	21 91.3%	76 83.5%	34 82.9%	1,200 84.7%	4,912 82.3%	1,866 80.0%
12-Month Follow-Up						
Donors due for follow-up	63	75		3,856	5,498	
Timely clinical data	48 76.2%	55 73.3%		3,215 83.4%	4,509 82.0%	
Timely lab data	50 79.4%	53 70.7%		2,988 77.5%	4,162 75.7%	
24-Month Follow-Up						
Donors due for follow-up	76			4,754		
Timely clinical data	55 72.4%			3,611 76.0%		
Timely lab data	53 69.7%			3,267 68.7%		

Follow-up forms due during the COVID-19 amnesty period from 3/13/2020-3/31/2021 are not included in timely clinical and lab data calculations