SCIENTIFIC REGISTRY OF TRANSPLANT RECIPIENTS

SRTR 101

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Chronic Disease Research Group
Hennepin Healthcare Research Institute
Minneapolis, MN

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I have no financial relationships to disclose within the past 12 months relevant to my presentation. The ACCME defines 'relevant' financial relationships as financial relationships in any amount occurring within the past 12 months that create a conflict of interest.

My presentation does/does not include discussion of off-label or investigational use, and I do/do not intend to reference unlabeled/unapproved uses of drugs or products in my presentation.

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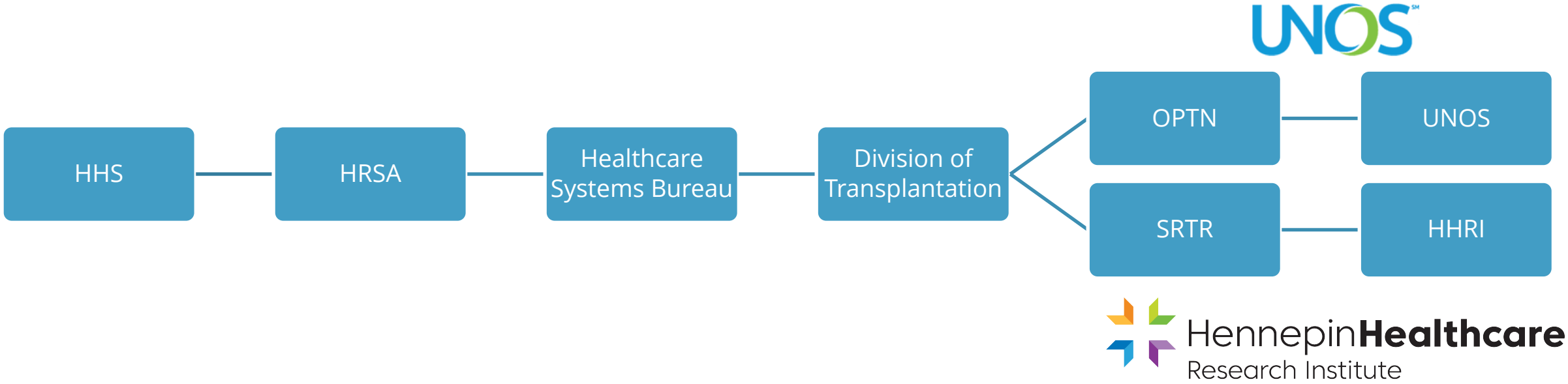
SRTR's Place Within the Nation's Transplant System



HennepinHealthcare
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CDRG
Chronic Disease Research Group

CDRG
Transplantation

SRTR

SRTR's Major Deliverables

Public Reporting

Website

PSRs

OSRs

ADR

Analytic Support

HRSA

OPTN

Quality Tools

Secure Site

CUSUMs

Workbooks

Decision Aids

Research Support

Data Access

Data Queries

SCIENTIFIC REGISTRY OF TRANSPLANT RECIPIENTS

FIND & COMPARE TRANSPLANT PROGRAMS

Select Organ | Search by Postal Code or Program Name (optional) | SEARCH

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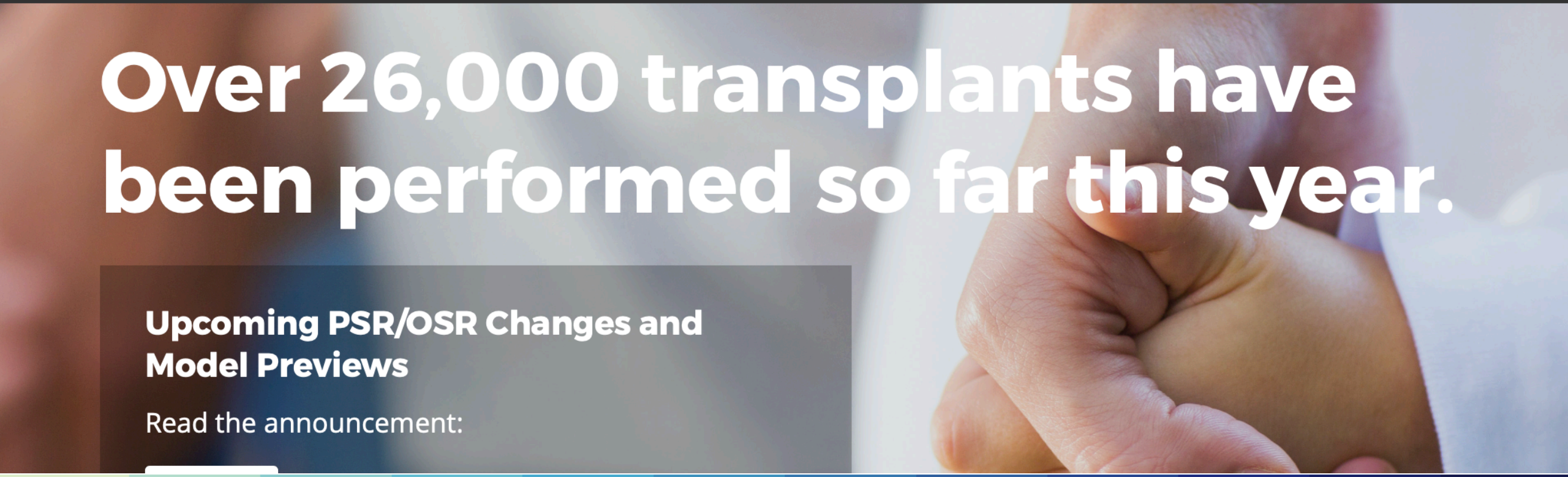

SCIENTIFIC REGISTRY OF TRANSPLANT RECIPIENTS

FIND & COMPARE TRANSPLANT PROGRAMS

- ✓ Select Organ
- Liver
- Kidney
- Pancreas
- Kidney-Pancreas
- Heart
- Lung
- Heart-Lung
- Intestine

Search by Postal Code or Program Name (optional)

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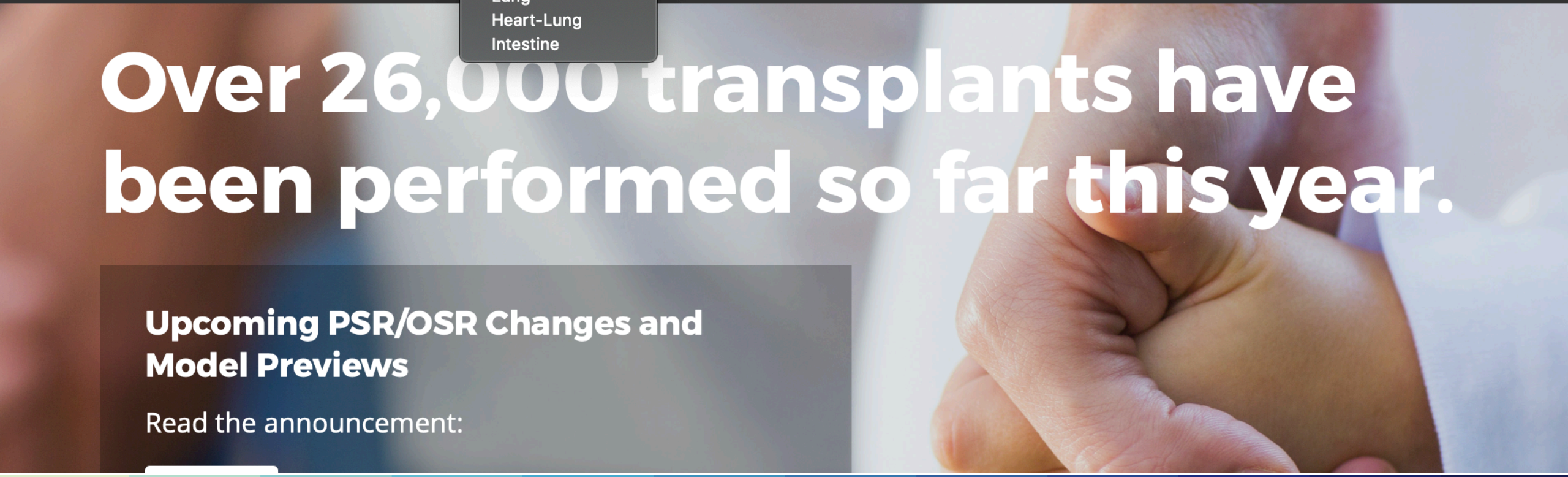

	DISTANCE	DECEASED DONOR TRANSPLANTS IN A YEAR	SURVIVAL ON THE WAITLIST	GETTING A TRANSPLANT FASTER	1-YEAR HEART SURVIVAL

For heart transplant candidates, this measure has the **largest impact on survival after listing** among these three measures. 1 year heart survival includes only candidates who received a transplant.

Temple University Hospital

Philadelphia, PA

View Summary Data
View Complete Report (PDF)

DISTANCE	DECEASED DONOR TRANSPLANTS IN A YEAR	SURVIVAL ON THE WAITLIST	GETTING A TRANSPLANT FASTER	1-YEAR HEART SURVIVAL
N/A	17 ADULTS			

St Luke's Hospital of Kansas City

Kansas City, MO

View Summary Data
View Complete Report (PDF)

DISTANCE	DECEASED DONOR TRANSPLANTS IN A YEAR	SURVIVAL ON THE WAITLIST	GETTING A TRANSPLANT FASTER	1-YEAR HEART SURVIVAL
N/A	39 ADULTS			

SCIENTIFIC REGISTRY OF TRANSPLANT RECIPIENTS

FIND & COMPARE TRANSPLANT PROGRAMS

Select Organ | Search by Postal Code or Program Name (optional) | SEARCH

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- The SRTR Database
- Guide to Using the SRTR Website
  - 5-tier Outcome Assessment
  - Searches for Transplant Programs
  - Metrics Marked as Most Important
- Guide to Key OPO Metrics
- Analytic Methods: PSRs and OSRs
- Technical Assistance

Search ... ant Programs

Information ... lts

Background

The SRTR website allows users to search for transplant programs through the search functionality found at the top of all website pages. This guide provides a brief explanation of the information presented in searches for transplant programs.

PSR Reporting Schedule

January Release

- October: Data Review
- December: Report Preview

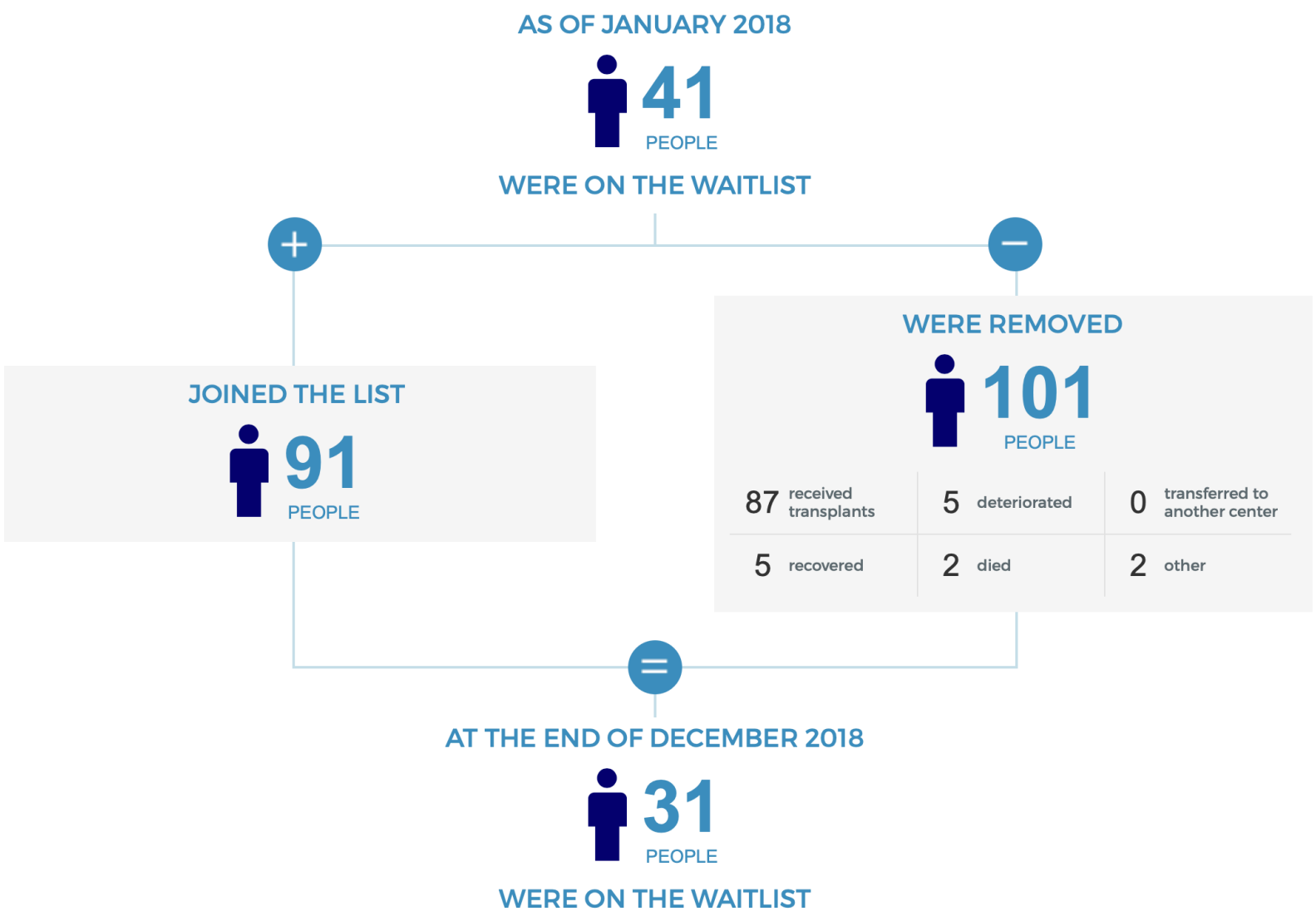
July Release

- April: Data Review
- June: Report Preview

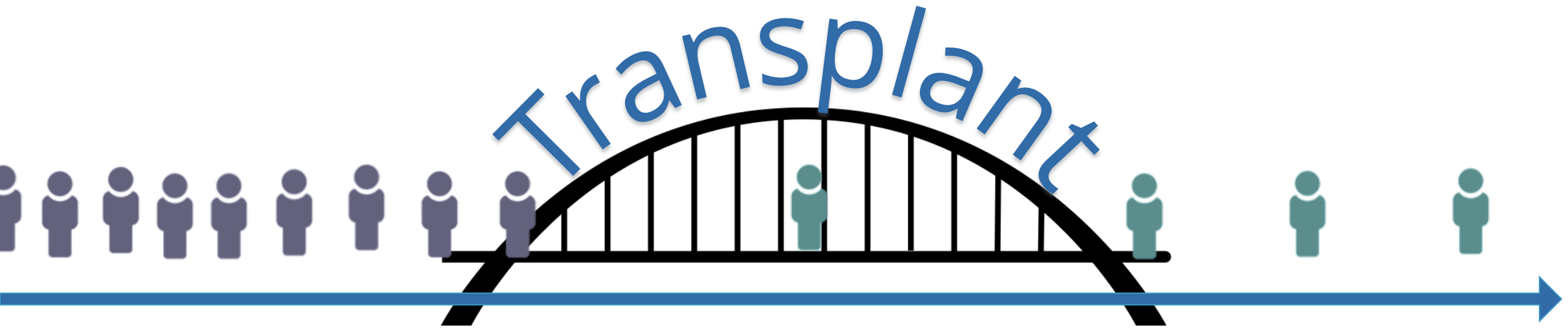
SRTR contractual reporting obligations:

- Waitlist activity
- Waitlist outcomes
- Posttransplant outcomes
- Acceptance and utilization of organs
- Cost and resource utilization by transplant programs
- Living donor outcomes

Waitlist


AS OF JANUARY 2018
41
PEOPLE
WERE ON THE WAITLIST
JOINED THE LIST
91
PEOPLE
WERE REMOVED
101
PEOPLE
87 received transplants
5 deteriorated
0 transferred to another center
5 recovered
2 died
2 other
AT THE END OF DECEMBER 2018
31
PEOPLE
WERE ON THE WAITLIST

Transplant Rate



How quickly do patients move from the waitlist to transplant?

SCIENTIFIC REGISTRY OF TRANSPLANT RECIPIENTS

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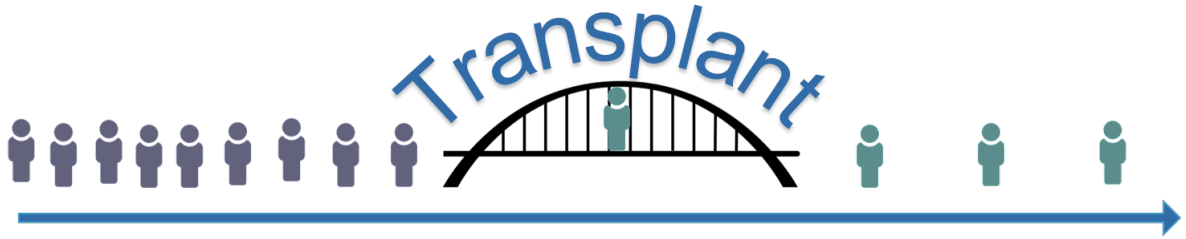
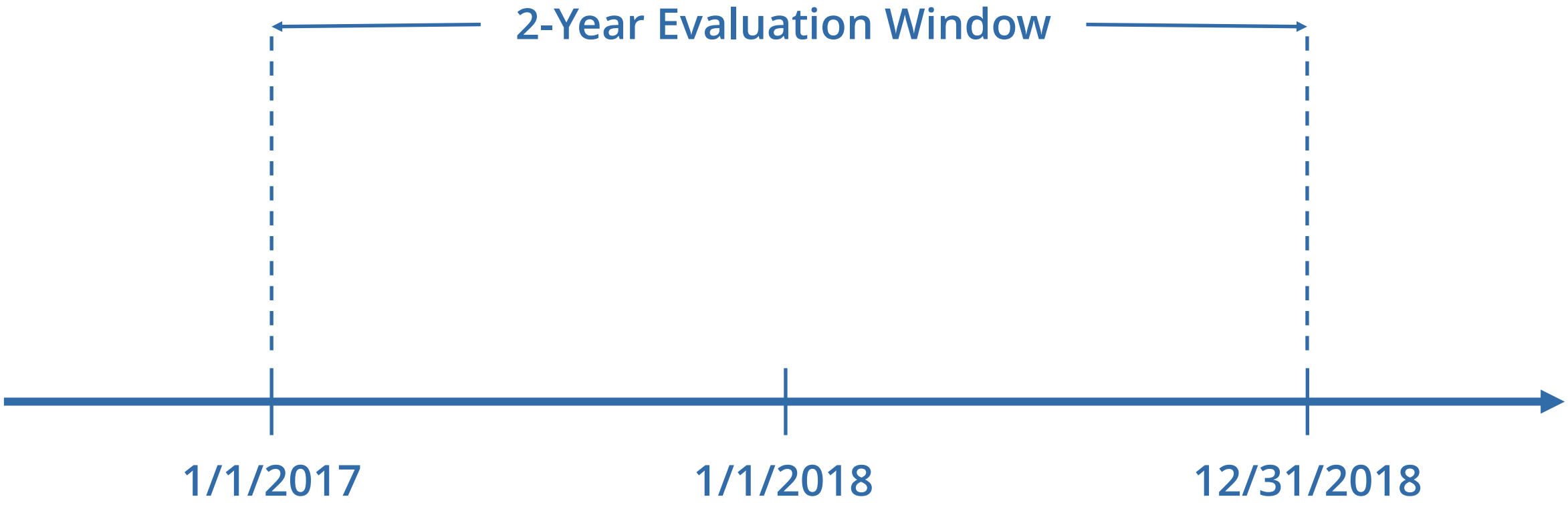
Continuing Education & Beyond

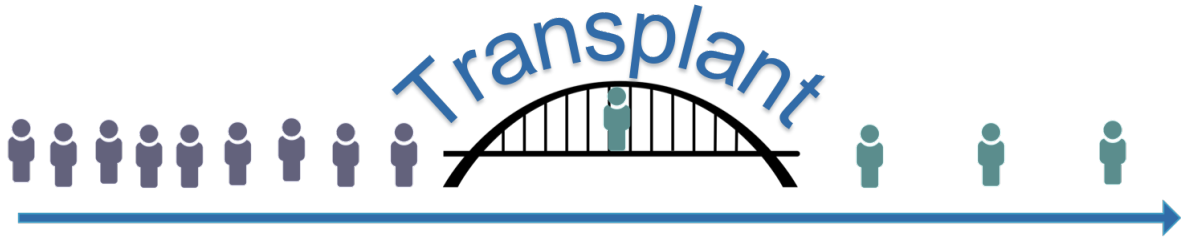
September 12, 2019

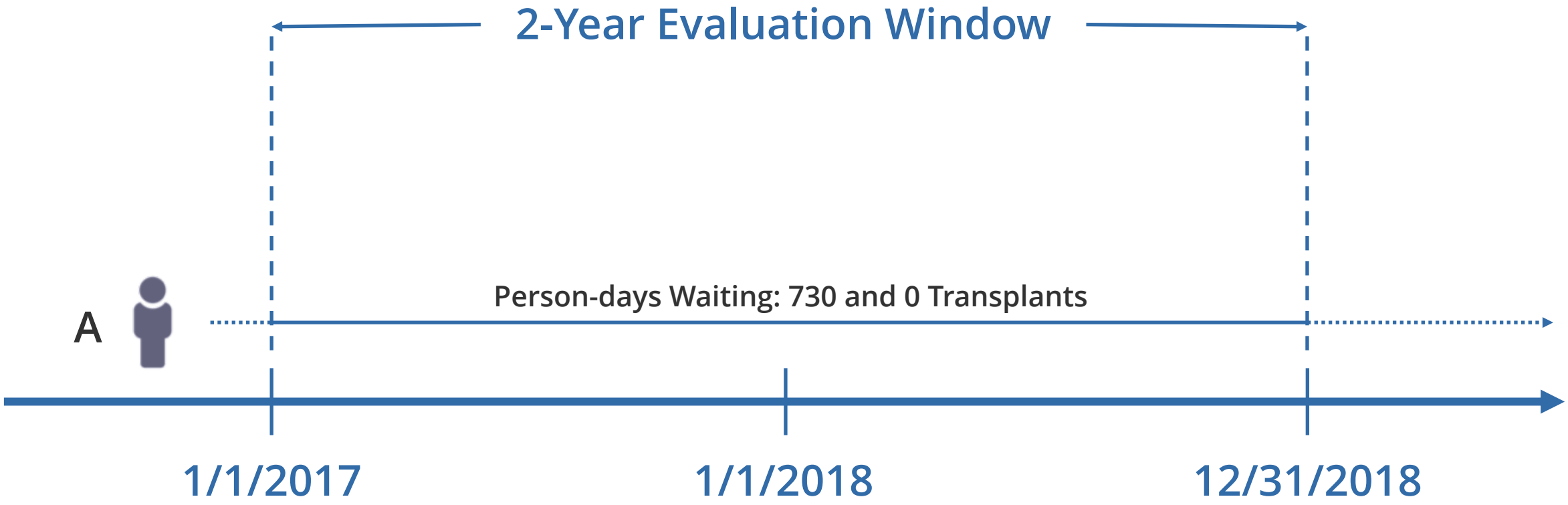
Transplant Rate: Evaluation Period



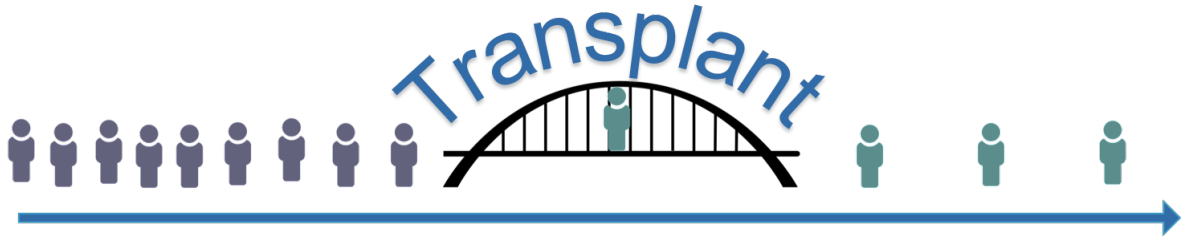


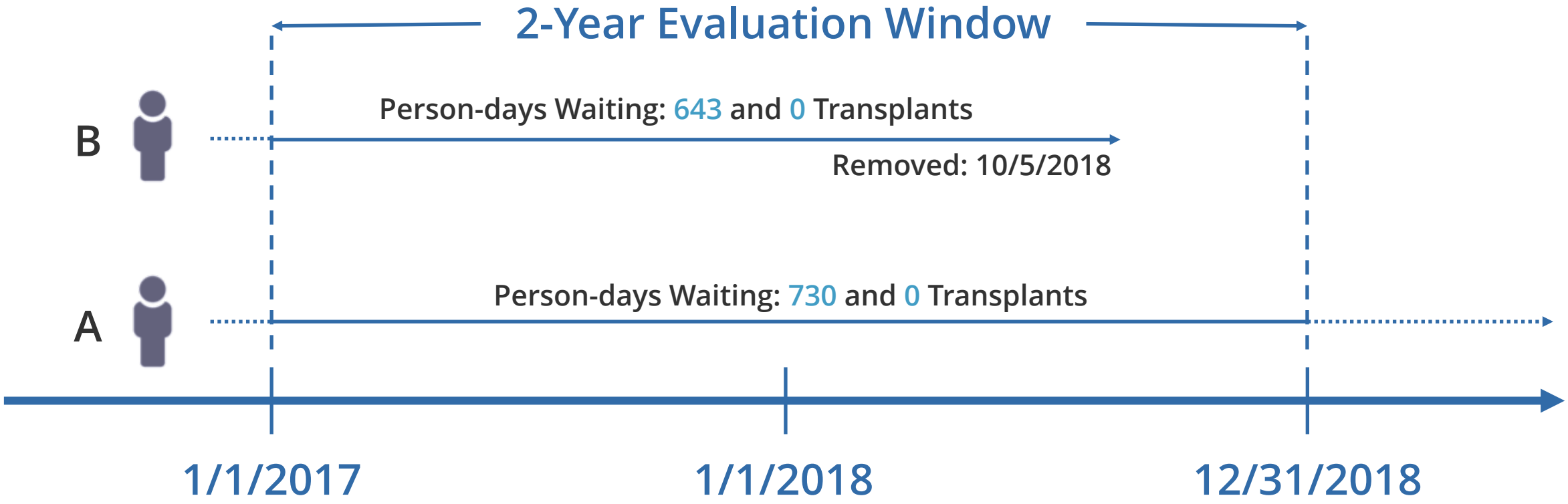
Transplant Rate: Evaluation Period



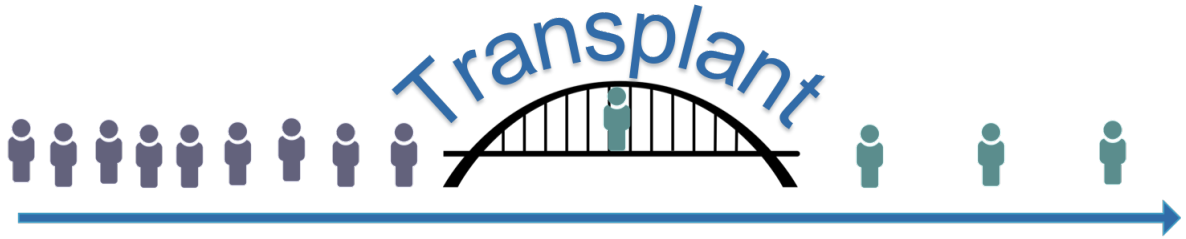


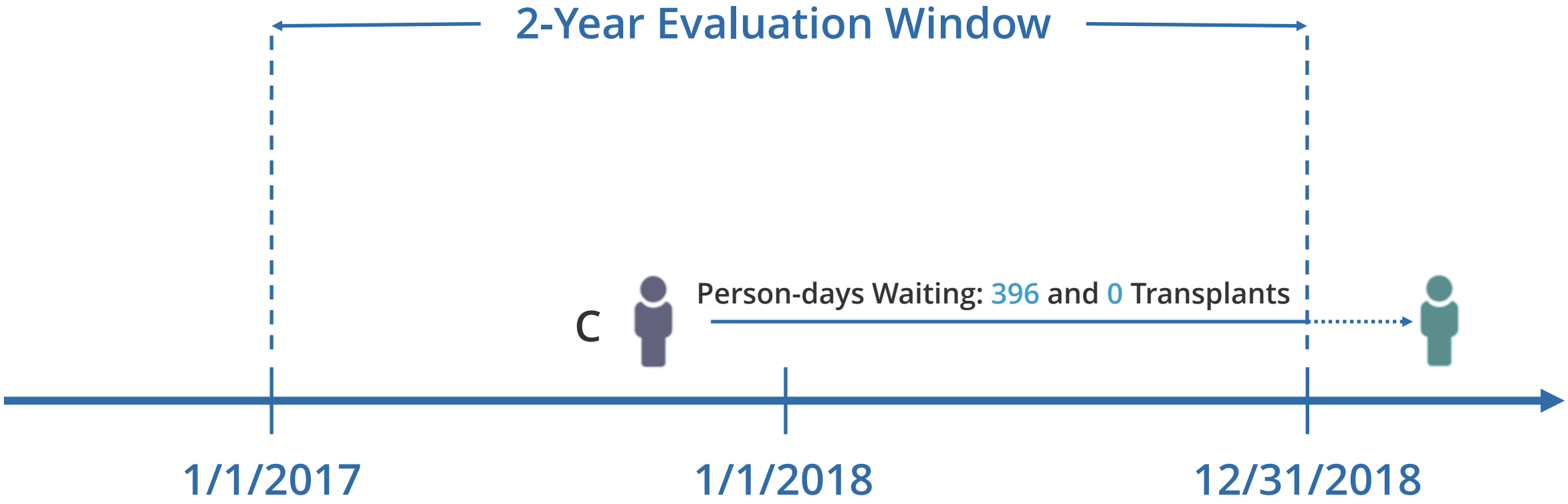
Transplant Rate: Evaluation Period



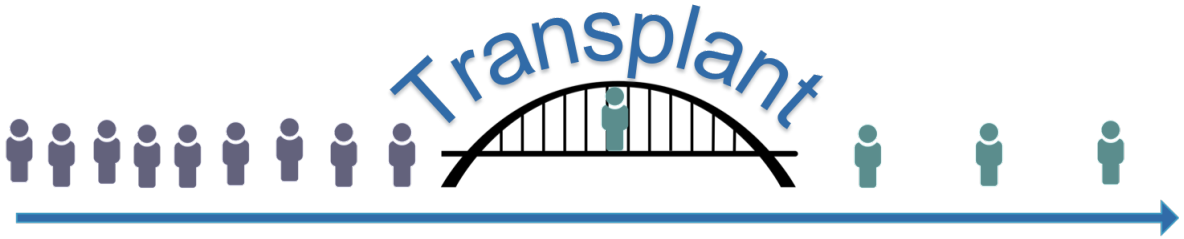


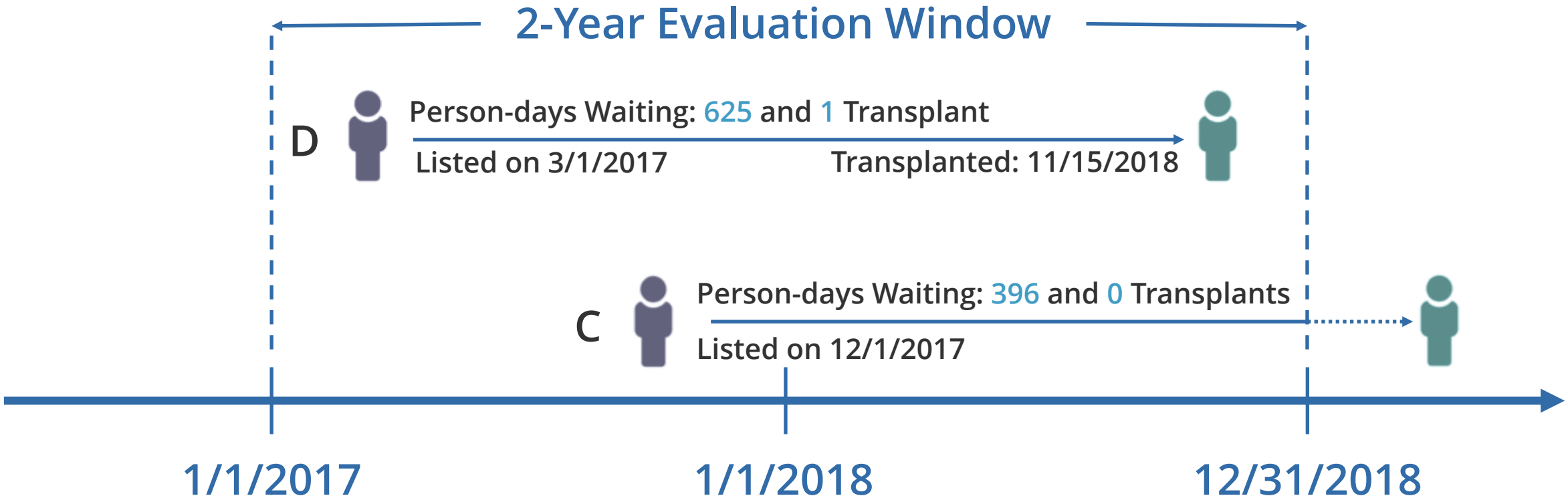
Transplant Rate: Evaluation Period



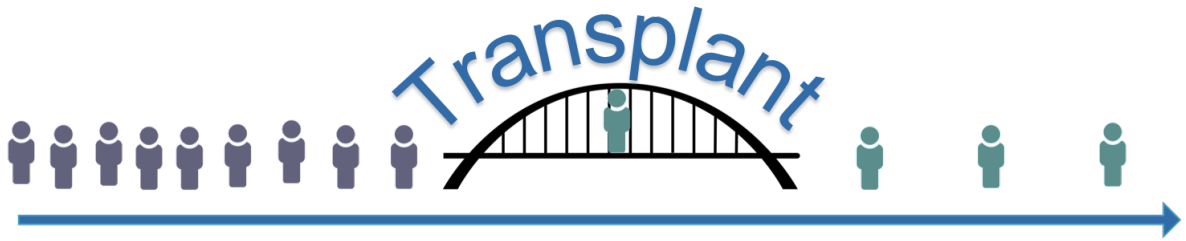


Transplant Rate: Evaluation Period





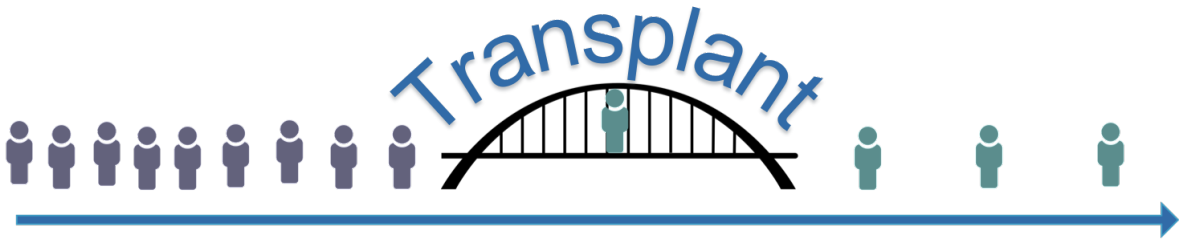
Transplant Rate: Calculation



Patient	Person-Days Waiting	Transplants
A	730	0
B	643	0
C	396	0
D	625	1
Total	**2,394**	**1**

$$\frac{1 \text{ Transplant}}{2394 \text{ Person-Days}} = 0.000418$$

Transplant Rate: Calculation



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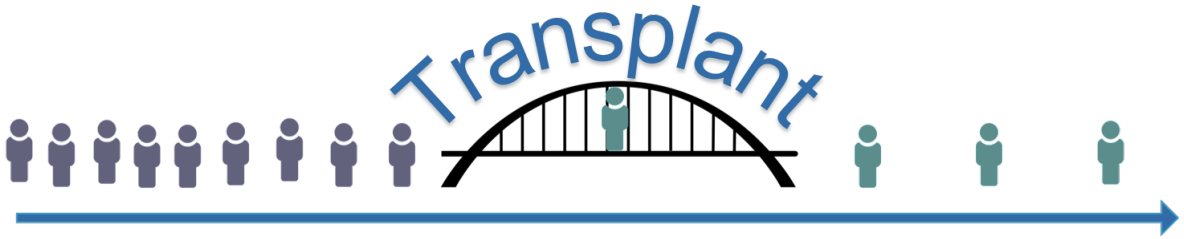
0.000418 Transplants Per Person-Day of Waiting

Transplant Rate: Calculation



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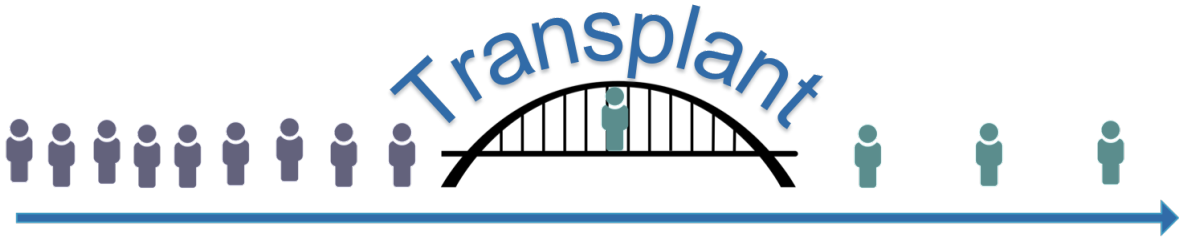
Convert to a rate per 100 Person-Years by Multiplying by 365.25*100

0.000418*365.25*100 = 15.3

Transplant Rate: Calculation



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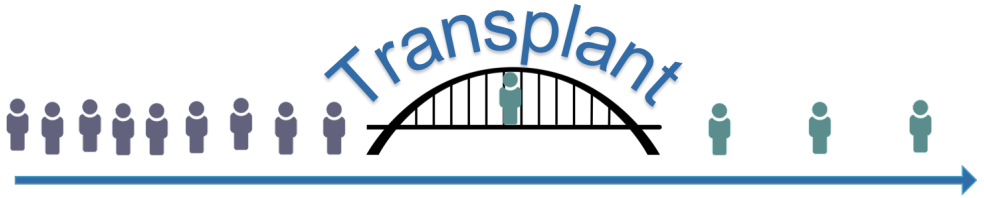
Convert to a rate per 100 Person-Years by Multiplying by 365.25*100

0.000418*365.25*100 = 15.3

15.3 Transplants Per 100 person-years of waiting

Transplant Rate: FAQs



Inactive Time:	• Active/Inactive time are both considered in the denominator.
Discrepancy Between Transplant/Death and Waitlist Removal	• If a patient is determined to have been transplanted or died prior to removal from the waitlist, the waitlist time is truncated to the transplant/death date.
Multiple Listings	• If a patient is listed at multiple programs, only the transplanting program is credited with the transplant and the patient's follow-up time is censored at the other program(s) on the date of transplant.
Multi-organ Listings	• If a candidate is simultaneously listed for more than 1 organ, the candidate is included in the transplant rate calculation for each of the organs.

Table B4. Transplant rates: 01/01/2017 - 12/31/2018

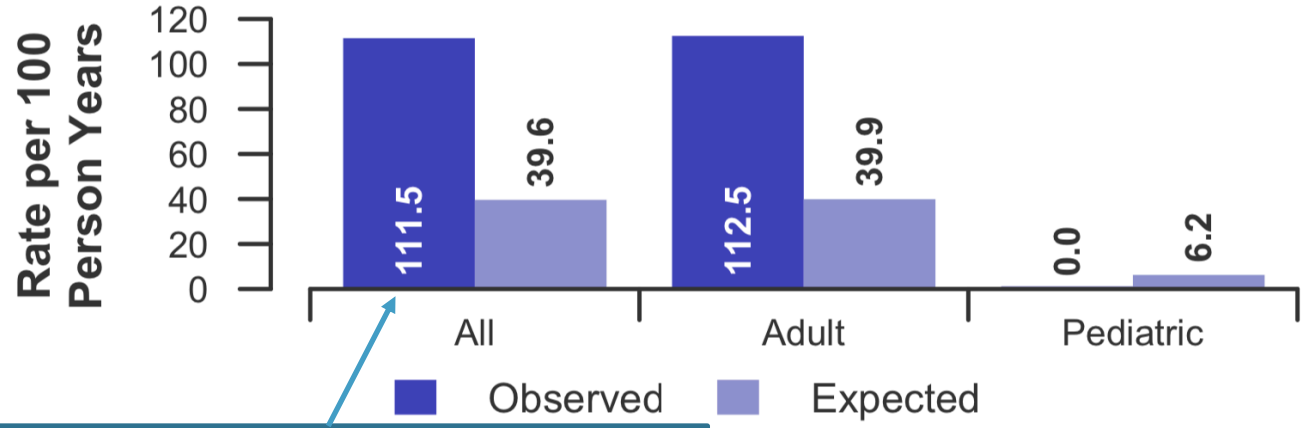
Waiting List Registrations	This Center	OPO/DSA	Region	U.S.
All Candidates				
Count on waiting list at start*	126	243	3,158	14,684
Person Years**	222.5			6.6
Removals for Transplant	248			32
Adult (18+) Candidates				
Count on waiting list at start*	125	238	3,044	14,113
Person Years**	220.5	397.2	5,642.7	27,396.5
Removals for transpant	248	522	2,304	15,145
Pediatric (<18) Candidates				
Count on waiting list at start*	1	5	114	571
Person Years**	2.0	11.8	242.8	1,090.1
Removals for transplant	0	15	224	1,187

248*100/222.5 = 111.5

* 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: 01/01/2017 - 12/31/2018



248*100/222.5 = 111.5

Figure B2. Transplant rate ratio estimate

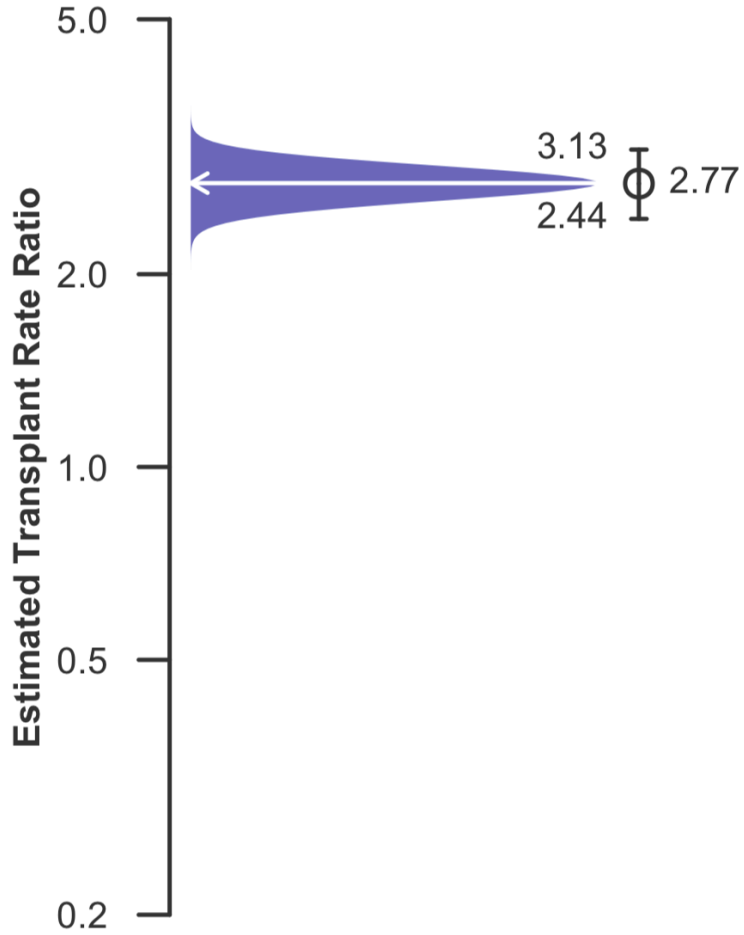
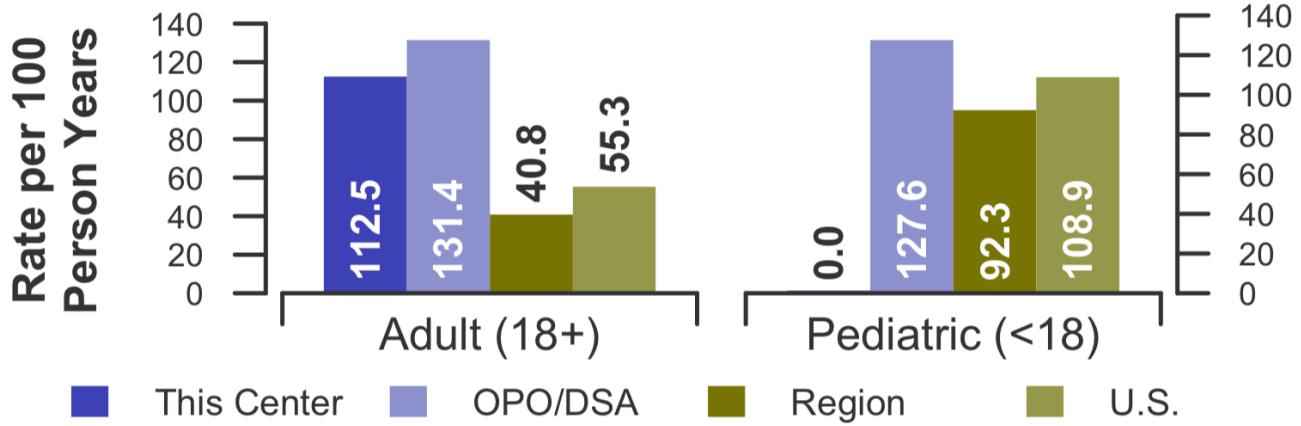


Figure B3. Observed adult (18+) and pediatric (<18) transplant rates: 01/01/2017 - 12/31/2018



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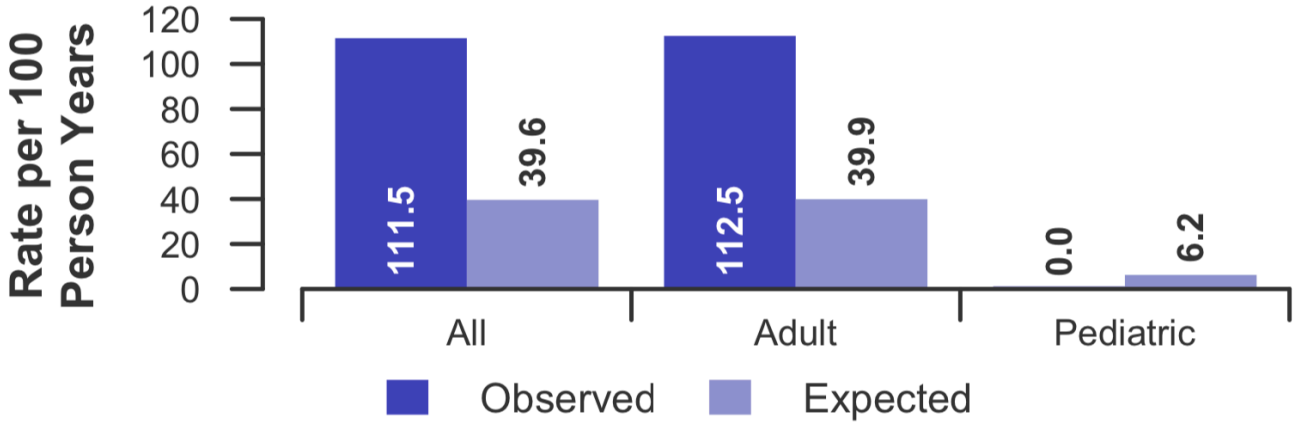

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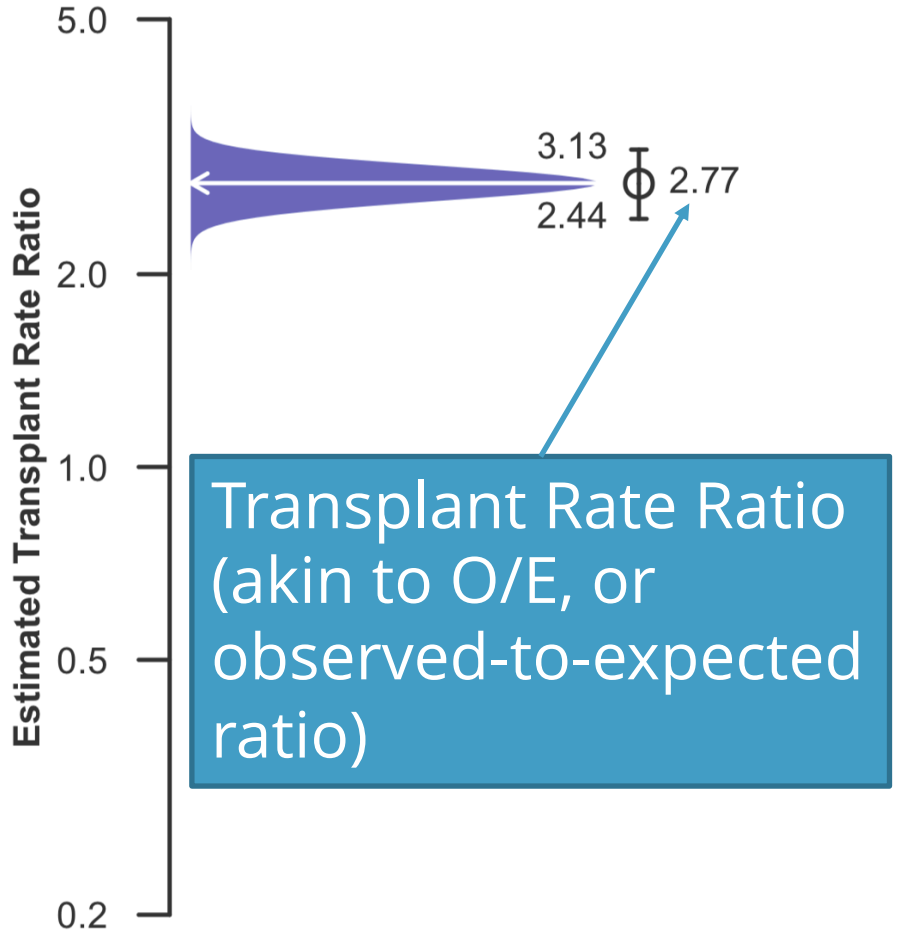

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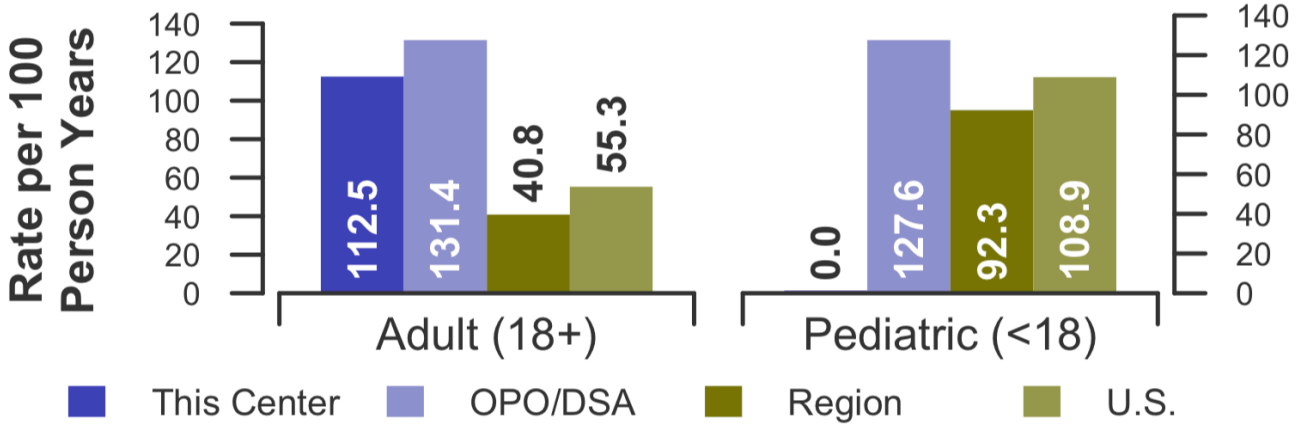


Two Variations of Transplant Rates Are Presented

[All-Donor] Transplant Rate:

- Considers both a living donor transplant and a deceased donor transplant as a success.
- Pro: Reflects the experience of all patients at the program whether they have a living donor available or not.
- Con: Differences in timing of listing candidates with a known living donor can lead to higher or lower rates.

Deceased-Donor Transplant Rate:

- Stops a candidate's follow-up at the time of a living donor transplant and does not count the living donor transplant as a success.
- Pro: Truer to a candidate's experience if they do not have a living donor available.
- Con: May not reflect the total experience of patients at the program since living donor transplants are not counted as a success.

	DISTANCE	DECEASED DONOR TRANSPLANTS IN A YEAR	LIVING DONOR TRANSPLANTS IN A YEAR	SURVIVAL ON THE WAITLIST	GETTING A DECEASED DONOR TRANSPLANT FASTER	1-YEAR LIVER SURVIVAL
Mayo Clinic Hospital Phoenix, AZ View Summary Data View Complete Report (PDF)	N/A	128 ADULTS	1 ADULTS			
Northwestern Memorial Hospital Chicago, IL View Summary Data View Complete Report (PDF)	N/A	98 ADULTS	8 ADULTS			
Tulane Medical Center New Orleans, LA View Summary Data	N/A	22 ADULTS	0 ADULTS			

For liver transplant candidates, this measure has the **largest impact on survival after listing** among these three measures. 1 year liver survival includes only candidates who received a transplant.

The adult or pediatric deceased donor transplant rate serves as the basis for this evaluation on the SRTR Search Results Page.

Waitlist Mortality

Question of interest

- At what rate do waitlist candidates die following listing and prior to transplant?

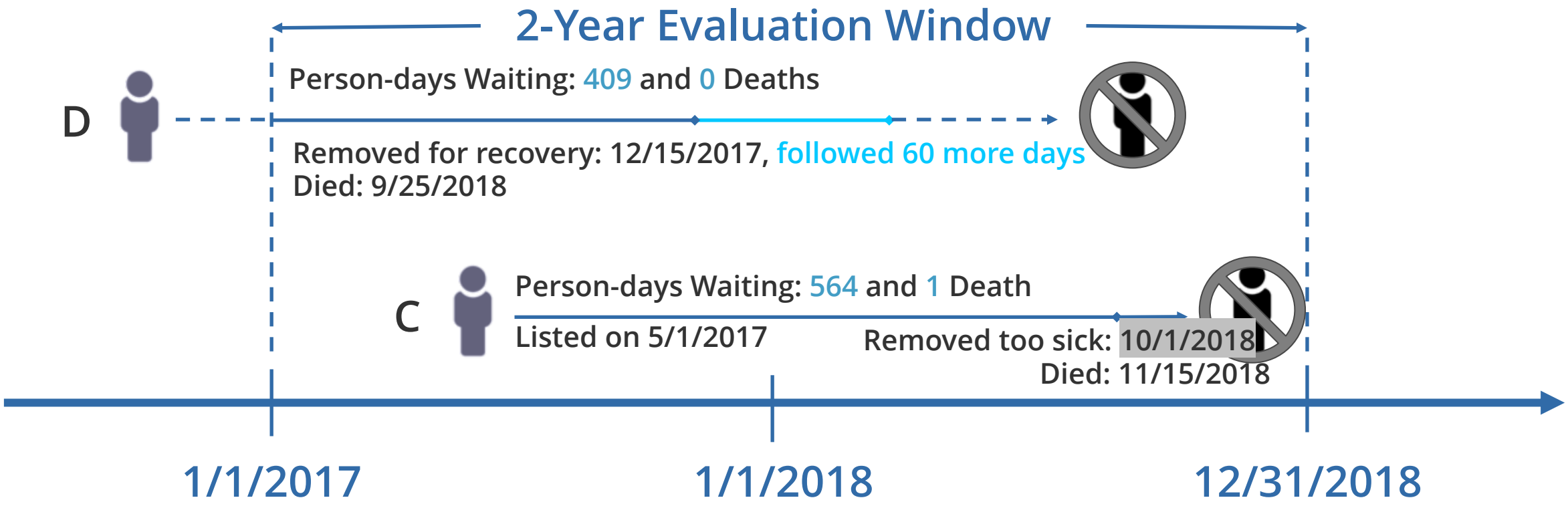
Waitlist Mortality: Evaluation Period

Patients are followed from the date of listing or start of the evaluation window, whichever is later, until:

- Transplant
- Death
- Transfer to another program
- 60 days past removal for recovery (transplant is no longer needed)
- End of the evaluation window

Patients are followed beyond removal for being too sick to transplant with death ascertainment supplemented by additional searches by OPTN, NTIS, and CMS.

Waitlist Mortality Rate: Evaluation Period



B. Waiting List Information

Figure B7. Offer acceptance: Overall

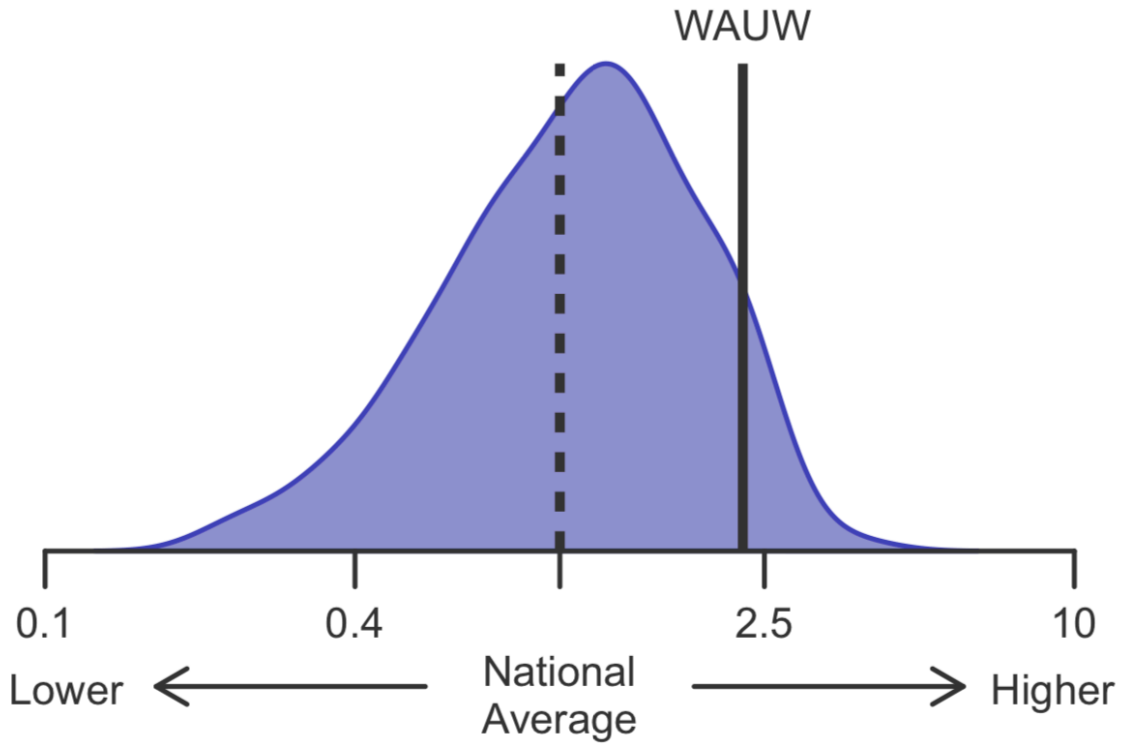


Figure B8. Offer acceptance: PHS increased infectious risk

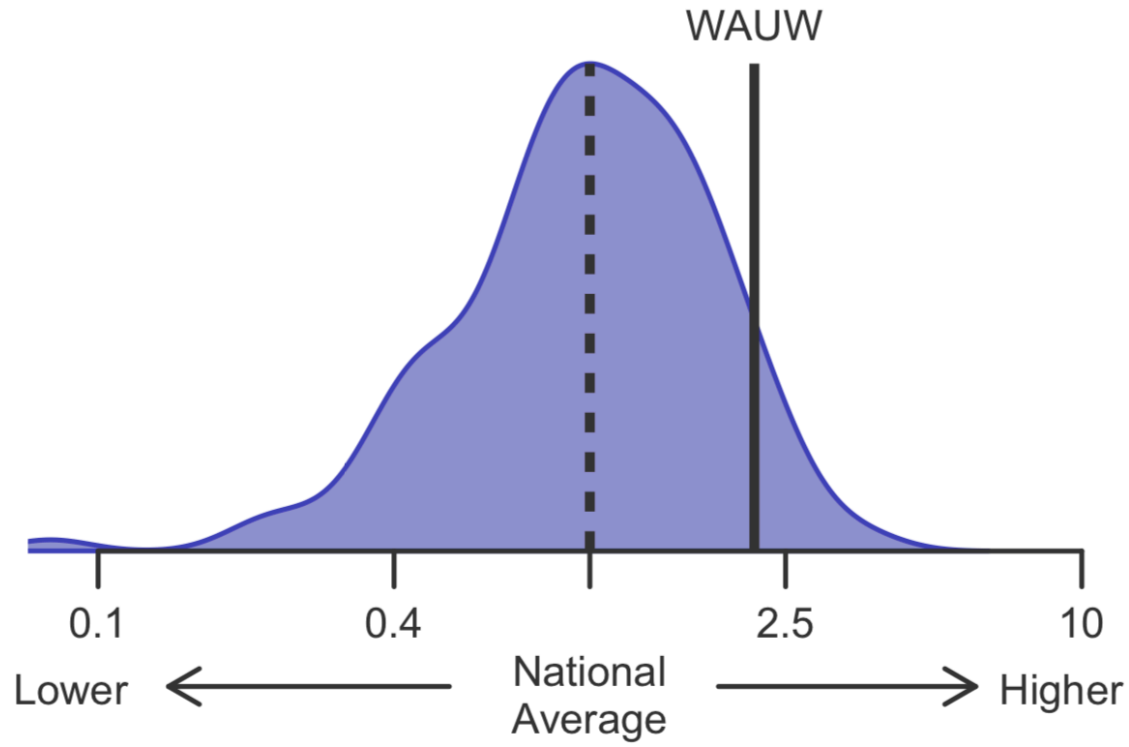


Table C6D. Adult (18+) 1-year survival with a functioning deceased donor graft
Single organ transplants performed between 01/01/2016 and 06/30/2018
Deaths and retransplants are considered graft failures

	WAUW	U.S.
Number of transplants evaluated	153	6,481
Estimated probability of surviving with a functioning graft at 1 year (unadjusted for patient and donor characteristics)	90.85%	91.17%
Expected probability of surviving with a functioning graft at 1 year (adjusted for patient and donor characteristics)	90.11%	--
Number of observed graft failures (including deaths) during the first year after transplant	14	548
Number of expected graft failures (including deaths) during the first year after transplant	13.78	--
Estimated hazard ratio*	1.01	--
95% credible interval for the hazard ratio**	[0.58, 1.57]	--

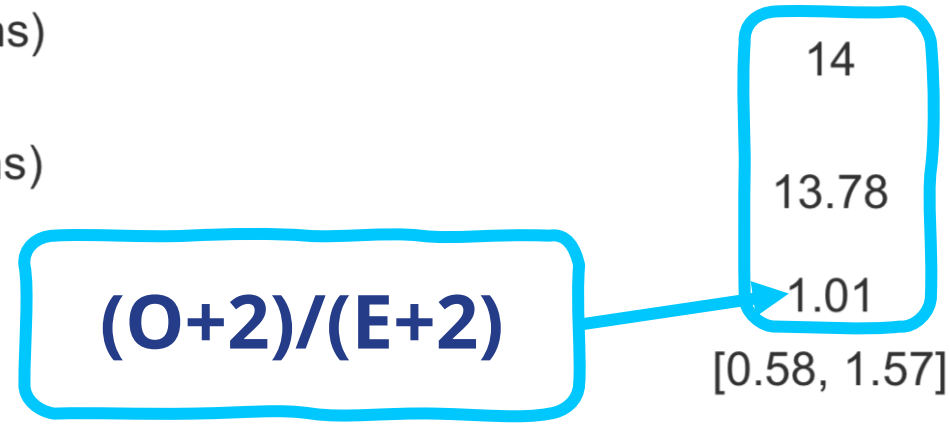


Figure C3D. Adult (18+) 1-year deceased donor graft failure HR estimate

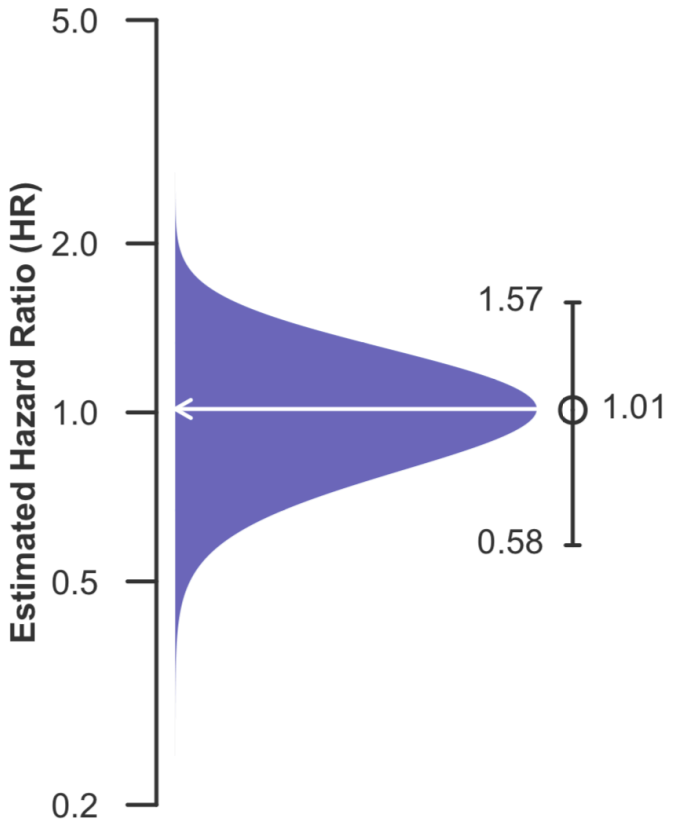
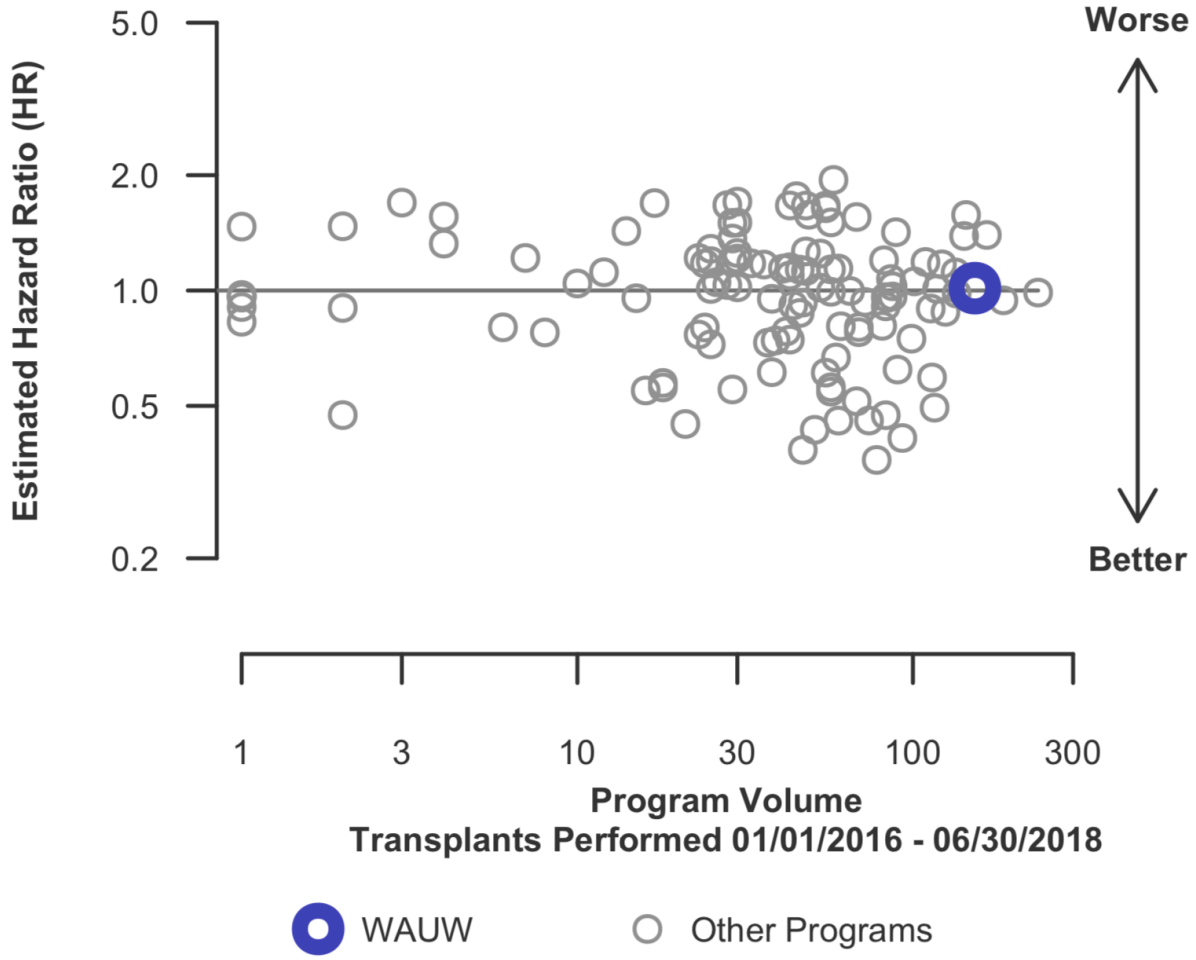


Figure C4D. Adult (18+) 1-year deceased donor graft failure HR program comparison



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- About SRTR Reports
- SRTR/OPTN Annual Data Report
- Program-Specific Reports
- Organ Procurement Organization Reports
- Risk Adjustment Models
  - Posttransplant Outcomes
  - Waiting List
  - Offer Acceptance
  - OPOs
- PSR Reporting Timeline
- OSR Reporting Timeline
- Kidney Transplant Decision Tool
- Liver Waiting List Calculator

Over 26,
been pe

Upcoming PSR/OS
Model Previews

Read the announcement

lants have
far this year.

SRTR Waiting List Risk Adjustment Models

Choose a PSR Release Date:

July 2019

Organ

- Kidney
- Liver
- Heart
- Lung
- Pancreas
- Intestine
- Simultaneous Heart-Lung

Outcome

- Transplant Rate
- Deceased Donor Transplant Rate
- Waitlist Mortality

Choose an age group:

- Pediatric (<18)
- Adult (18+)

Choose the Transplant Rate, Deceased-Donor Only Transplant Rate, or Waitlist Mortality Rate.

Model Elements | Model Coefficients | Model Element Plots | Baseline Hazard | Additional Info

Model Elements Table

This table lists the elements included in the risk adjustment model and each element's data source. For additional information on the data sources, click the Additional Info tab.

Show 25 **entries** **Search:**

Element	Source
Candidate age at listing	TCR
Candidate blood type	TCR
Candidate has spontaneous bacterial peritonitis	TCR
Candidate BMI	Calculated
Candidate diabetes status/type at onset	TCR
Candidate education	TCR
Candidate ethnicity	TCR
Candidate sex	TCR

SRTR Waiting List Risk Adjustment Models

Model Elements: Which items are accounted for in the risk adjustment?

Choose a PSR Release Date:

July 2019

Organ

- Kidney
- Liver
- Heart
- Lung
- Pancreas
- Intestine
- Simultaneous Heart-Lung

Outcome

- Transplant Rate
- Deceased Donor Transplant Rate
- Waitlist Mortality

Choose an age group:

- Pediatric (<18)
- Adult (18+)

Model Elements | Model Coefficients | Model Element Plots | Baseline Hazard | Additional Info

Model Elements Table

This table lists the elements included in the risk adjustment model and each element's data source. For additional information on the data sources, click the Additional Info tab.

Show 25 **entries** **Search:**

Element	Source
Candidate age at listing	TCR
Candidate blood type	TCR
Candidate has spontaneous bacterial peritonitis	TCR
Candidate BMI	Calculated
Candidate diabetes status/type at onset	TCR
Candidate education	TCR
Candidate ethnicity	TCR
Candidate sex	TCR

SRTR Waiting List Risk Adjustment Models

Model Coefficients: Provides the actual statistical model used and the ability to download the file.

Choose a PSR Release Date:

July 2019

Organ

- Kidney
- Liver
- Heart
- Lung
- Pancreas
- Intestine
- Simultaneous Heart-Lung

Outcome

- Transplant Rate
- Deceased Donor Transplant Rate
- Waitlist Mortality

Choose an age group:

- Pediatric (<18)
- Adult (18+)

Model Elements | Model Coefficients | Model Element Plots | Baseline Hazard | Additional Info

Model Coefficients Table

This table shows the coefficients, from a Poisson survival model, for each level of the risk adjusters included in the model. To better understand the relationship between each element and modeled risk, click on the Model Element Plots tab. Additionally, the estimated effects are accessible by clicking on Download .CSV File.

Download .CSV File

Show 25 entries

Search:

Element	Level	Coefficient
Candidate age at listing	Apply to > 45 (Right LS)	0.004130
Candidate age at listing	Apply to > 60 (Right LS)	0.000000
Candidate age at listing	Apply to < 30 (Left LS)	0.000000
Candidate age at listing	Apply to < 60 (Left LS)	-0.007345
Candidate blood type	A	0.010567

SRTR Waiting List Risk Adjustment Models

Model Element Plots: Shows a graphical representation of how the risk adjustment works.

Choose a PSR Release Date:

July 2019

Organ

- Kidney
- Liver
- Heart
- Lung
- Pancreas
- Intestine
- Simultaneous Heart-Lung

Outcome

- Transplant Rate
- Deceased Donor Transplant Rate
- Waitlist Mortality

Choose an age group:

- Pediatric (<18)
- Adult (18+)

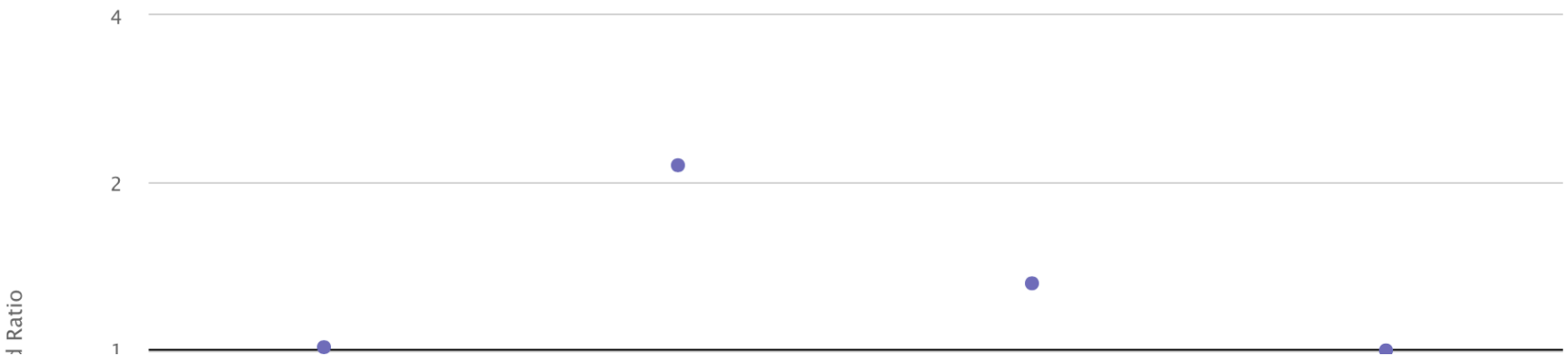
Model Elements | Model Coefficients | Model Element Plots | Baseline Hazard | Additional Info

Model Element Plots

Select a covariate from the model to see the relationship between the covariate and the deceased donor transplant rate.

Select a Covariate to Plot

Candidate blood type



- (●) Liver
- ( ) Heart
- ( ) Lung
- ( ) Pancreas
- ( ) Intestine
- ( ) Simultaneous Heart-Lung

Outcome

- ( ) Transplant Rate
- (●) Deceased Donor Transplant Rate
- ( ) Waitlist Mortality

Choose an age group:

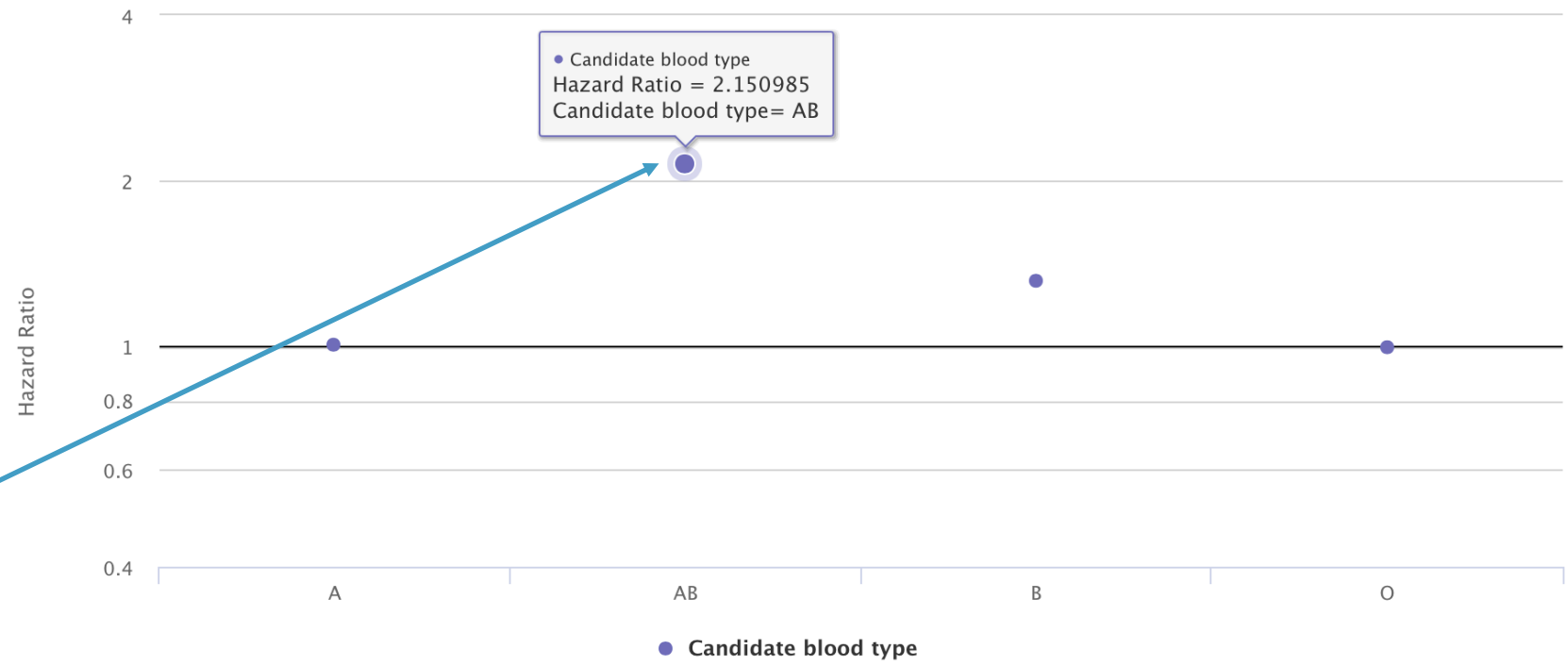
- ( ) Pediatric (<18)
- (●) Adult (18+)

Model Element Plots

Select a covariate from the model to see the relationship between the covariate and the deceased donor transplant rate.

Select a Covariate to Plot

Candidate blood type



For candidate blood type, we see the model expects the transplant rate to be 2.15x higher for AB candidates compared to A or O candidates.

SRTR Waiting List Risk Adjustment Models

Baseline Hazard: Needed if a statistician would like to use the model.

Choose a PSR Release Date:

July 2019

Organ

- Kidney
- Liver
- Heart
- Lung
- Pancreas
- Intestine
- Simultaneous Heart-Lung

Outcome

- Transplant Rate
- Deceased Donor Transplant Rate
- Waitlist Mortality

Choose an age group:

- Pediatric (<18)
- Adult (18+)

Model Elements | Model Coefficients | Model Element Plots | Baseline Hazard | Additional Info

The waiting list models use a constant baseline hazard.

Model Baseline Hazard = 0.002260

SRTR Waiting List Risk Adjustment Models

Additional Info: Additional notes about the model.

Choose a PSR Release Date:

July 2019

Organ

- Kidney
- Liver
- Heart
- Lung
- Pancreas
- Intestine
- Simultaneous Heart-Lung

Outcome

- Transplant Rate
- Deceased Donor Transplant Rate
- Waitlist Mortality

Choose an age group:

- Pediatric (<18)
- Adult (18+)

Model Elements | Model Coefficients | Model Element Plots | Baseline Hazard | Additional Info

Additional Model Information

Multi-organ Candidates

The status of waiting for a non-liver transplant is determined by being listed on a non-liver waiting list within 30 days of listing on the liver waiting list. Similarly, the status of having undergone non-liver transplant is determined up to 30 days after placement on the liver waiting list.

Waiting for a heart includes heart and heart-lung listings. Waiting for a kidney-pancreas includes kidney-pancreas and pancreas listings.

The variable for having undergone heart transplant includes heart and heart-lung transplants. The variable for having undergone kidney-pancreas transplant includes kidney-pancreas and pancreas transplants.

MELD (Model for end-stage liver disease)

For candidates listed before implementation of MELD (February 27, 2002), the earliest non-missing MELD value is used. For candidates listed after implementation of MELD, MELD at listing is used.

Data Sources

The Source column in the Model Elements table identifies, if it exists, the location of the variable in the OPTN database. "TCR" corresponds to the Transplant Candidate Registration form. "Status History" variables are typically used in allocation and values may change over time. These are selected in a process similar to the selection of MELD scores, as described above. "Calculated" variables are derived from variables in the TCR or Status History.

Natural-Log Scale

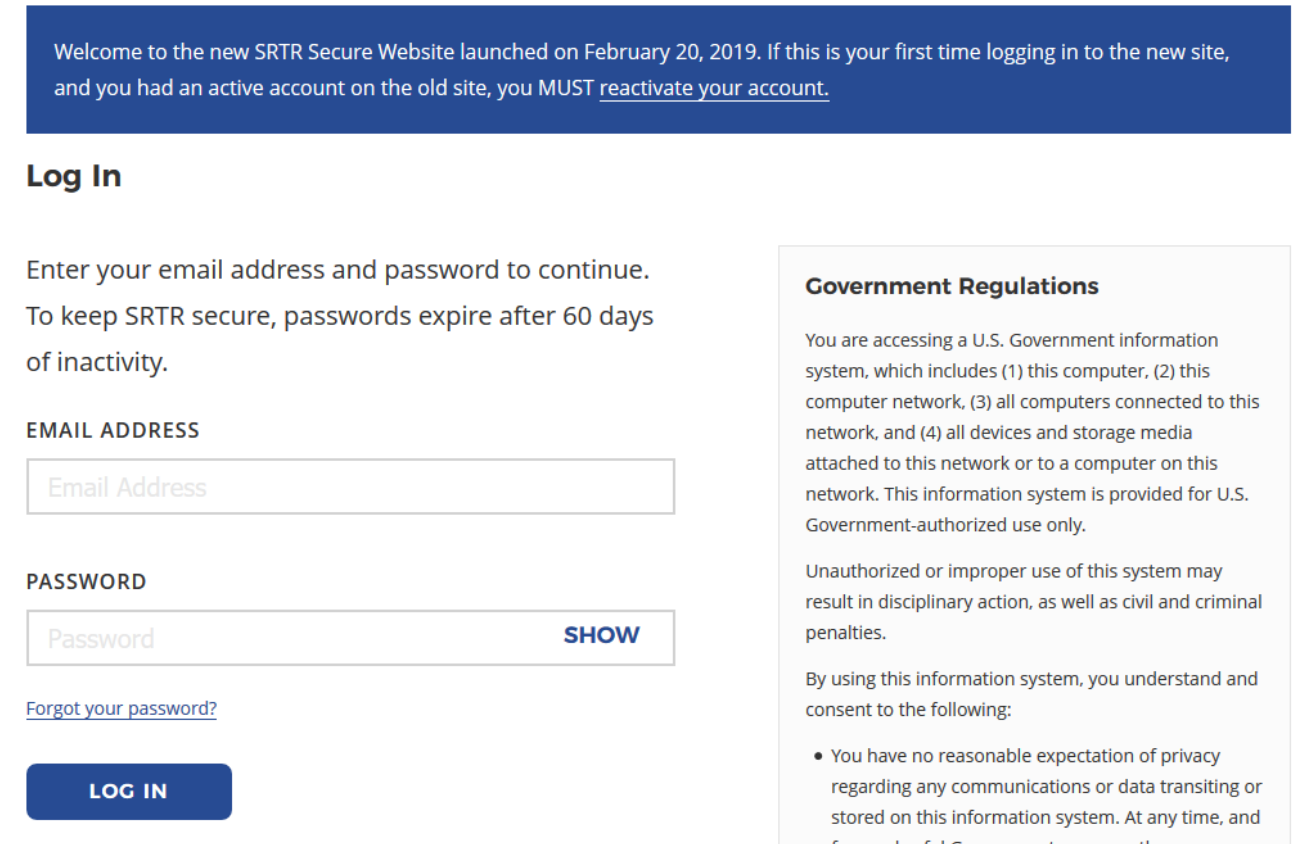
SCIENTIFIC REGISTRY OF TRANSPLANT RECIPIENTS

Tools for Programs

Nicholas Salkowski, PhD

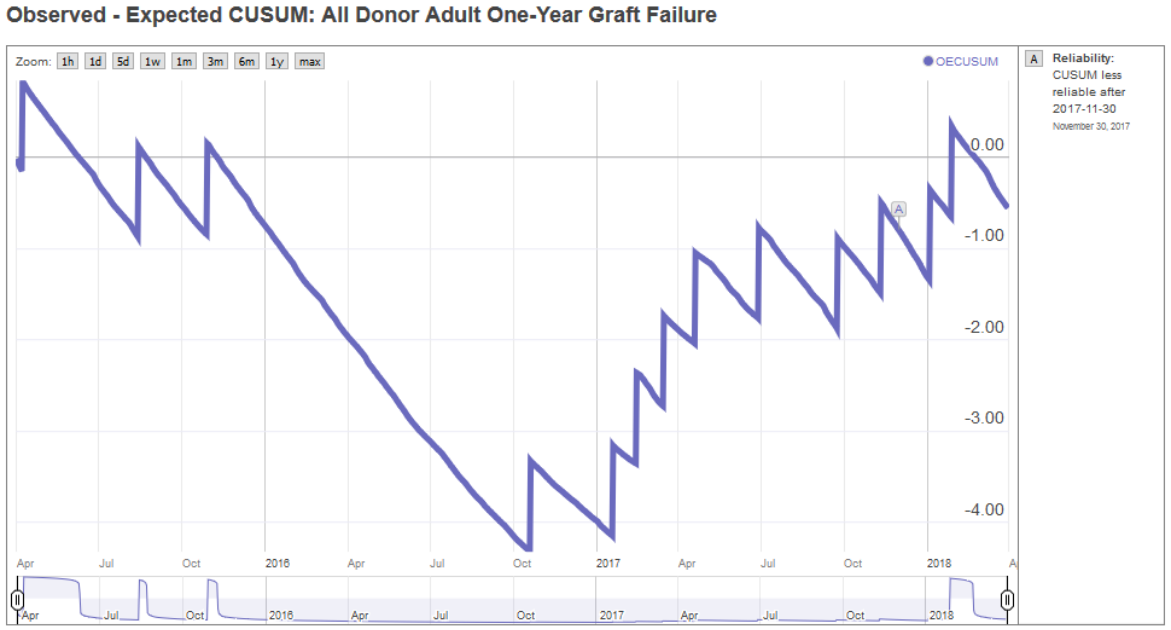
SRTR Secure Site:

SecureSRTR.transplant.hrsa.gov



CUSUMs (cumulative sum) are currently provided for the following metrics:

Posttransplant Graft/Patient Survival



Offer Acceptance

Observed - Expected CUSUM: All Donor Adult One-Year Graft Failure

Y-Axis:

Observed – Expected (O-E)

-1 = 1 fewer failure than expected

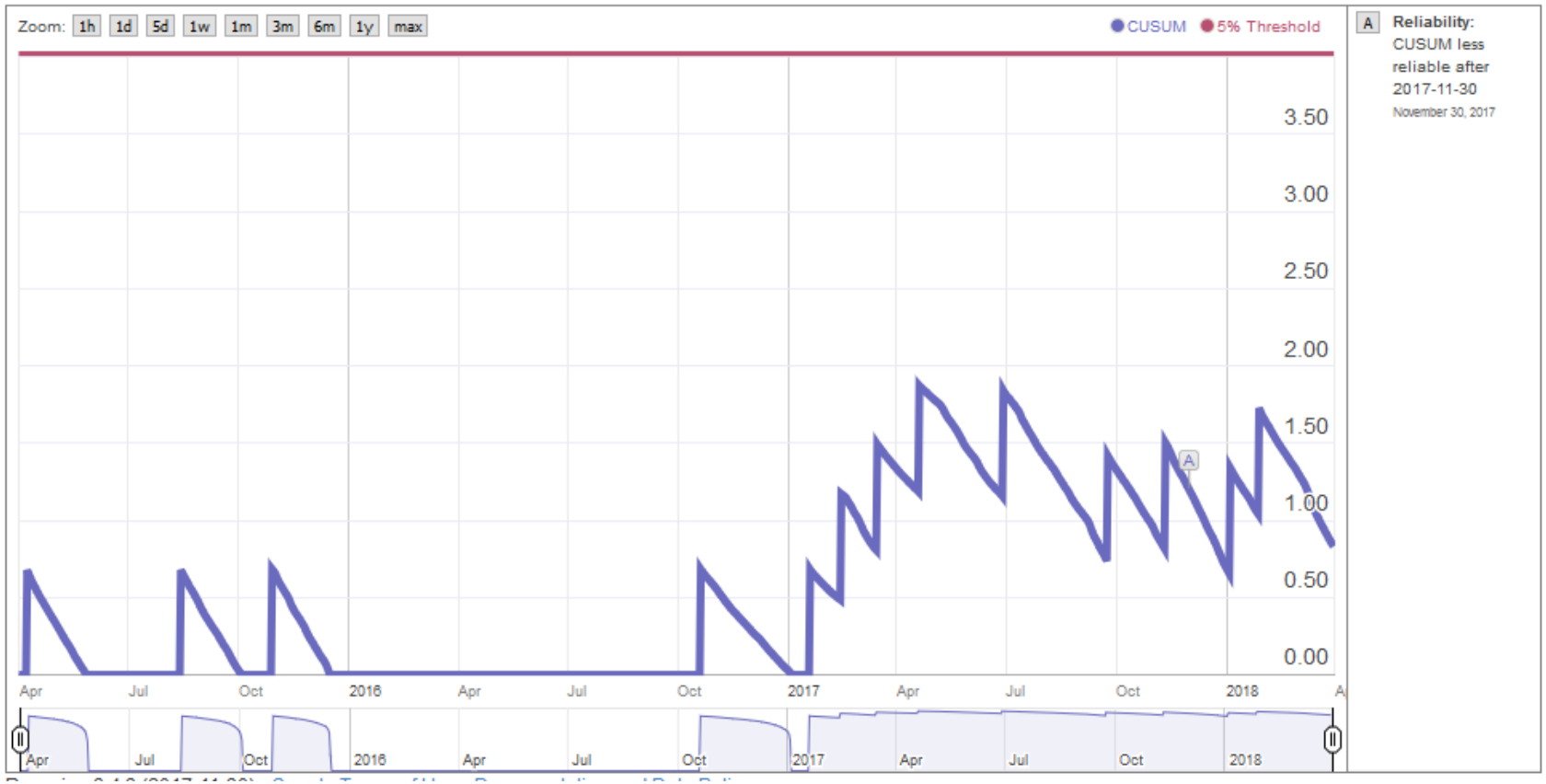
1 = 1 more graft failure than expected

Observed - Expected CUSUM: All Donor Adult One-Year Graft Failure

Trending down:
Better than expected rates of failure

Observed - Expected CUSUM: All Donor Adult One-Year Graft Failure

Accompanying One-Sided CUSUM



Attempts to discern whether the observed trends are "statistically significant" or perhaps just random noise.

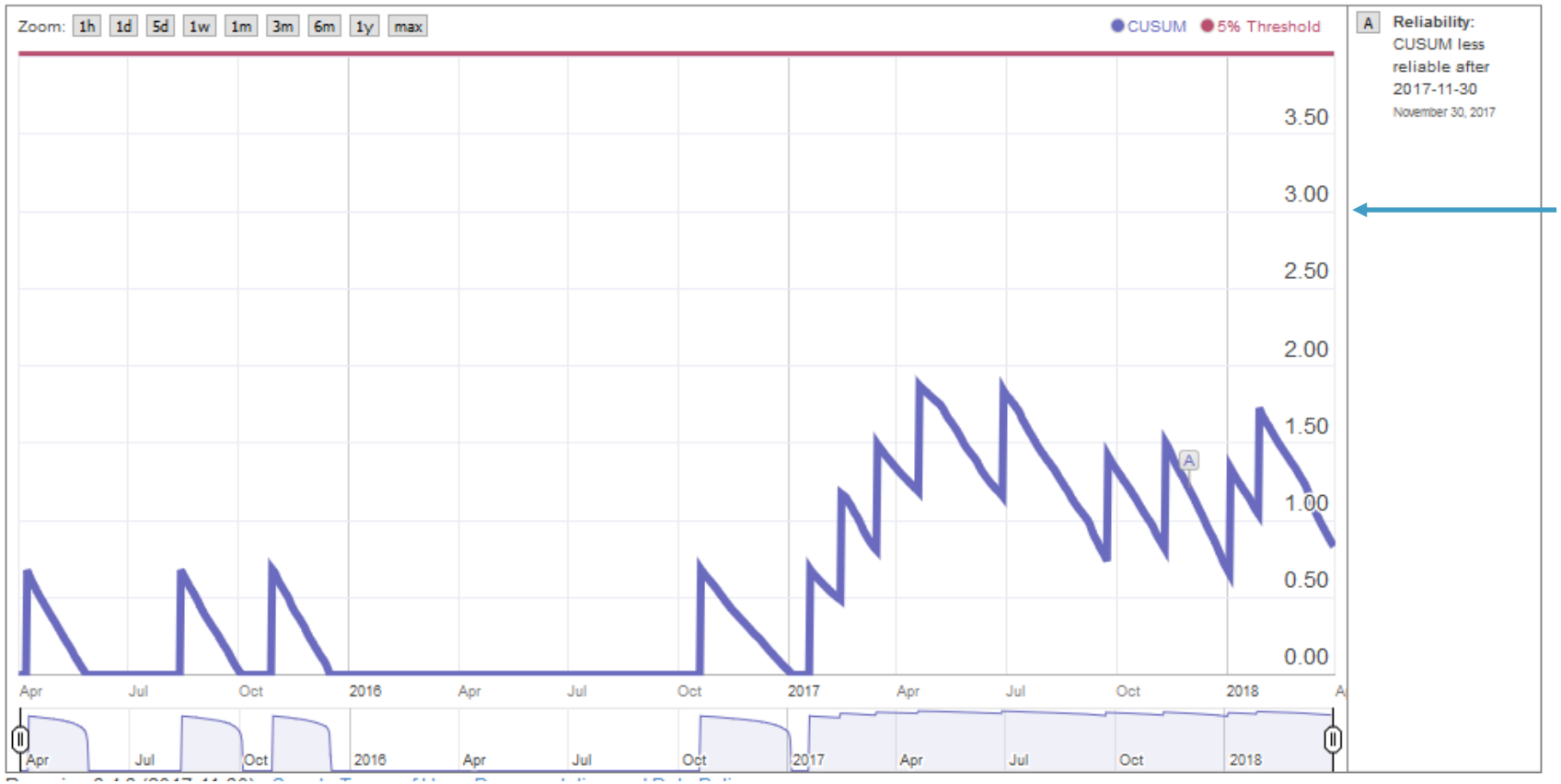
Accompanying One-Sided CUSUM

Has a red "5% Threshold line at the top of the chart. If the line hits the threshold, we conclude there is sufficient evidence of a real trend.

Accompanying One-Sided CUSUM

It is called the "5% threshold" because there is about a 5% chance of a false positive if the chart hits this line.

Accompanying One-Sided CUSUM



Y-axis is more difficult to interpret (i.e., don't worry about the value). It is the value of the CUSUM test statistic. Importantly, it is not O-E.

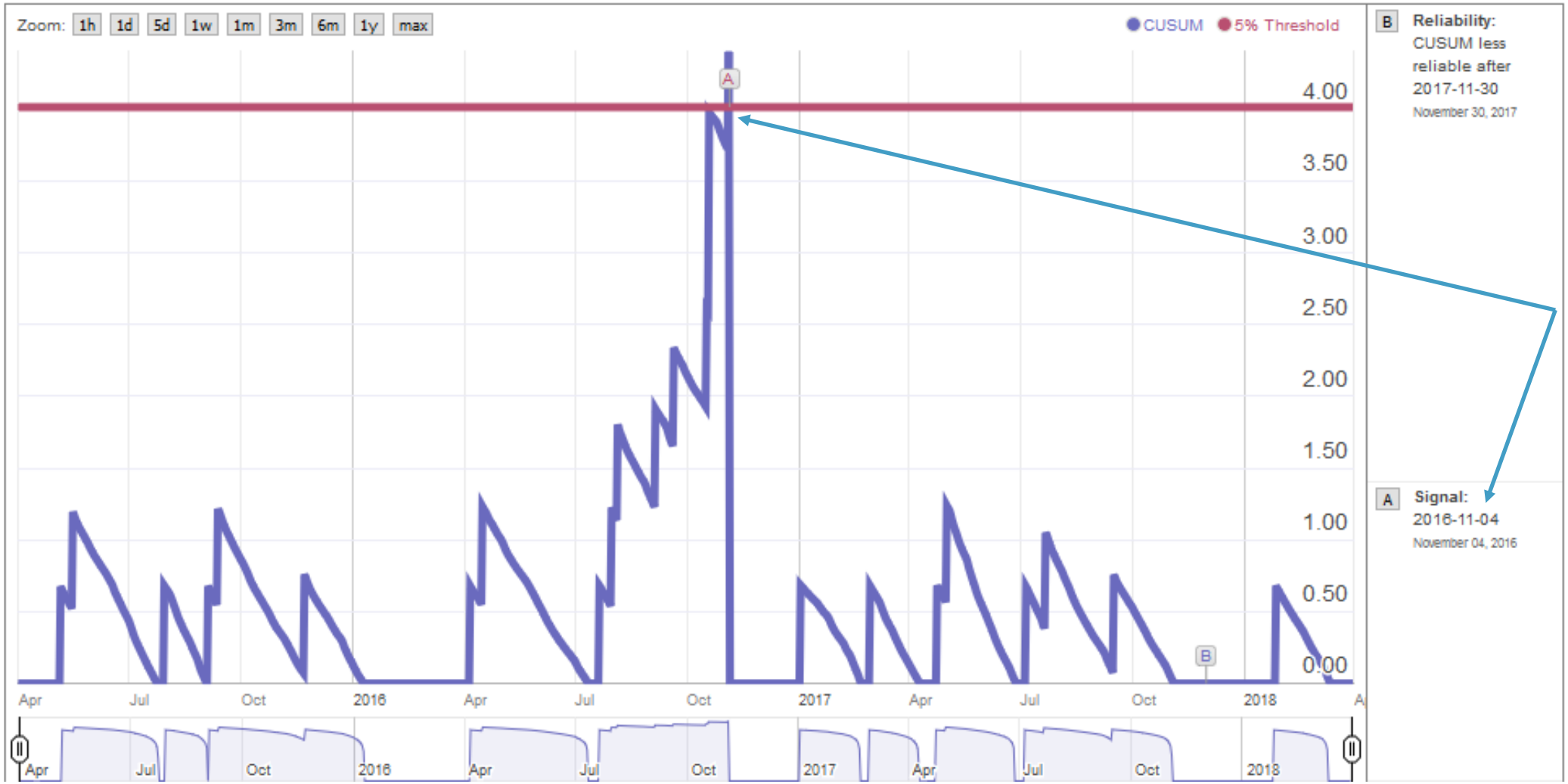
2018-05-01

Observed - Expected CUSUM: All Donor Adult One-Year Graft Failure

O-E = 6.75

The liver program experienced almost 7 more failures than expected over the three-year period. Is this trend statistically significant?

One-Sided CUSUM: All Donor Adult One-Year Graft Failure



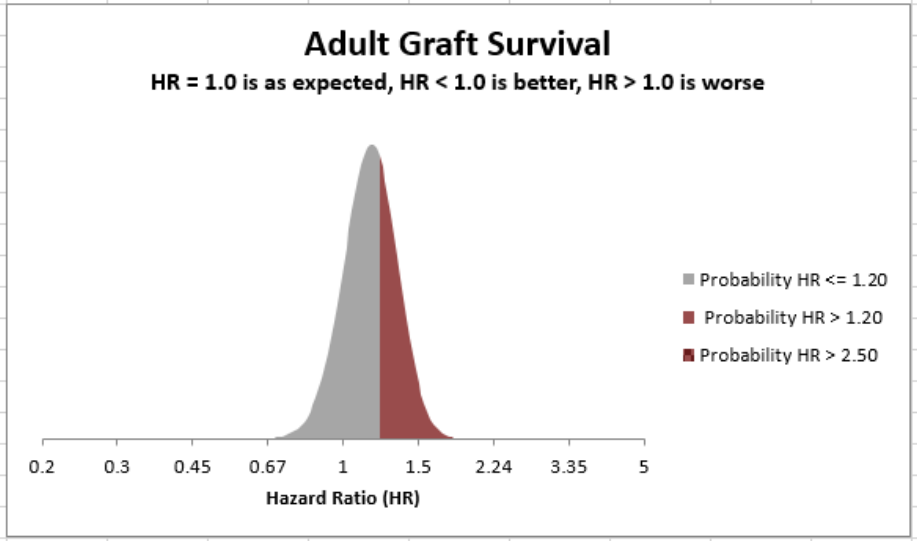
This chart signaled on 11/4/2016. This is when the chart had accumulated enough evidence that the observed trend was more than statistical noise (with a 5% chance this is a false positive).

SCIENTIFIC REGISTRY OF TRANSPLANT RECIPIENTS

Expected Survival Worksheets

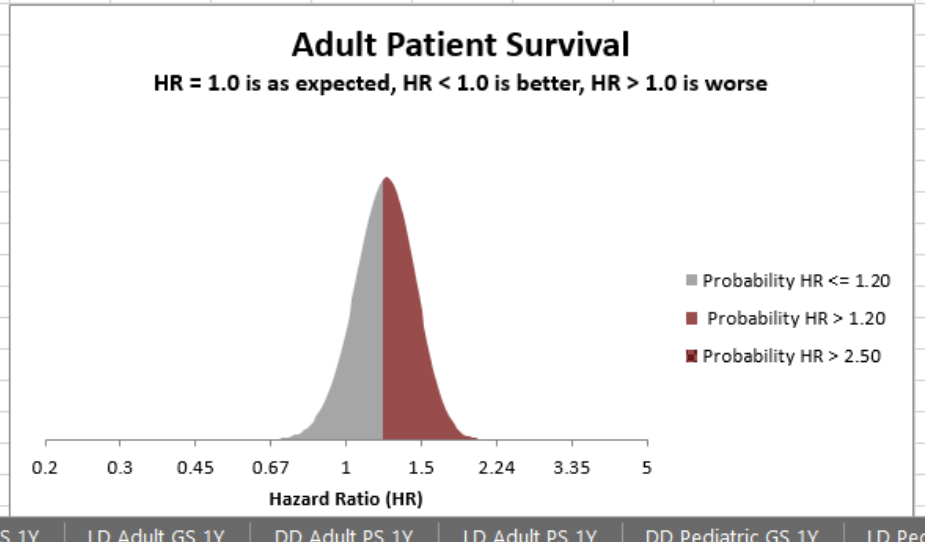
Adult Graft Survival

Number of Transplants	454
Observed (O)	47
Expected (E)	40.06
Current MPSC Flag Criteria	
Mean Hazard Ratio (HR)	1.17
Probability HR > 1.20	39.9%
Probability HR > 2.50	0.0%
Flagged by Standard Criteria	FALSE
Small Volume Flag	FALSE
Flagged By Current Criteria	FALSE
CMS Criteria	
O - E	6.94
O / E	1.17
One-Sided P Value	0.154
Large Volume Flag	FALSE



Adult Patient Survival

Number of Transplants	439
Observed (O)	37
Expected (E)	29.37
Current MPSC Flag Criteria	
Mean Hazard Ratio (HR)	1.24
Probability HR > 1.20	56.6%
Probability HR > 2.50	0.0%
Flagged by Standard Criteria	FALSE
Small Volume Flag	FALSE
Flagged By Current Criteria	FALSE
CMS Criteria	
O - E	7.63
O / E	1.26
One-Sided P Value	0.097



Guide | Flag Criteria | DD Adult GS 1Y | LD Adult GS 1Y | DD Adult PS 1Y | LD Adult PS 1Y | DD Pediatric GS 1Y | LD Ped

Liver													
Deceased Donor Adult 1-Year Graft Survival													
2015-01-01 to 2017-06-30													
Number of Transplants:	452												
Observed:	47												
Expected:	39.84												
Include This Patient?	Patient ID	Transplant Date	Graft Failure?	Graft Failure Date	End Follow Up	Follow Up Days	Expected	Observed & Included	Expected & Included		Candidate	Candidate	Candidate
1		2015-01-02	0		2016-01-02	365	0.071305	0	0.071305009		0	0	0
1		2015-01-03	0		2016-01-03	365	0.110962	0	0.110962273		0	0	1
1		2015-01-03	0		2016-01-03	365	0.13501	0	0.135009634		0	0	0
1		2015-01-08	0		2016-01-08	365	0.09341	0	0.093409637		1	0	0
1		2015-01-09	0		2016-01-09	365	0.074971	0	0.07497065		0	0	0
1		2015-01-10	0		2016-01-10	365	0.164489	0	0.164489411		0	0	0
1		2015-01-10	0		2016-01-10	365	0.101648	0	0.101648251		1	0	0
1		2015-01-11	0		2016-01-11	365	0.079115	0	0.079114739		1	0	0
1		2015-01-12	0		2016-01-12	365	0.084535	0	0.084534656		0	0	1
1		2015-01-17	0		2016-01-17	365	0.059417	0	0.059416746		0	0	1
1		2015-01-19	0		2016-01-19	365	0.087197	0	0.087197434		0	0	1
1		2015-01-21	1	2016-01-15	2016-01-21	359	0.073983	1	0.073983253		1	0	0
1		2015-01-21	0		2016-01-21	365	0.111053	0	0.11105283		1	0	0
1		2015-01-23	0		2016-01-23	365	0.107148	0	0.107147508		0	0	0
1		2015-01-24	0		2016-01-24	365	0.132924	0	0.13292369		0	0	0
1		2015-01-26	0		2016-01-26	365	0.104203	0	0.104202904		1	0	0
1		2015-01-30	0		2016-01-30	365	0.092388	0	0.092387638		1	0	0
1		2015-02-02	0		2016-02-02	365	0.086283	0	0.086282679		1	0	0
1		2015-02-04	0		2016-02-04	365	0.071031	0	0.071031001		1	0	0
1		2015-02-05	0		2016-02-05	365	0.069641	0	0.069640995		1	0	0
1		2015-02-06	0		2016-02-06	365	0.115234	0	0.115234192		0	0	0
1		2015-02-08	0		2016-02-08	365	0.114907	0	0.114907057		1	0	0
1		2015-02-08	0		2016-02-08	365	0.058356	0	0.058356495		0	0	0
1		2015-02-15	0		2016-02-15	365	0.068472	0	0.068471905		1	0	0

Subgroup Analyses

Liver	
Deceased Donor Adult 1-Year Graft Survival	
2015-01-01 to 2017-06-30	
Number of Transplants:	452
Observed:	47
Expected:	39.84

Include This Patient?	Patient ID	Transplant Date	Graft Failure?	Graft Failure Date	End Follow Up	Follow Up Days	Expected	Observed & Included	Expected & Included		Candidate	Candidate	Candidate
1		2015-01-02	0		2016-01-02	365	0.071305	0	0.071305009		0	0	0
1		2015-01-03	0		2016-01-03	365	0.110962	0	0.110962273		0	0	1
1		2015-01-03	0		2016-01-03	365	0.13501	0	0.135009634		0	0	0
1		2015-01-08	0		2016-01-08	365	0.09341	0	0.093409637		1	0	0
1		2015-01-09	0		2016-01-09	365	0.074971	0	0.07497065		0	0	0
1		2015-01-10	0		2016-01-10	365	0.164489	0	0.164489411		0	0	0
1		2015-01-10	0		2016-01-10	365	0.101648	0	0.101648251		1	0	0
1		2015-01-11	0		2016-01-11	365	0.079115	0	0.079114739		1	0	0
1		2015-01-12	0		2016-01-12	365	0.084535	0	0.084534656		0	0	1
1					16-01-17	365	0.059417	0	0.059416746		0	0	1
1					16-01-19	365	0.087197	0	0.087197434		0	0	1
1					16-01-21	359	0.073983	1	0.073983253		1	0	0
1					16-01-21	365	0.111053	0	0.11105283		1	0	0
1					16-01-23	365	0.107148	0	0.107147508		0	0	0
1					16-01-24	365	0.132924	0	0.13292369		0	0	0
1					16-01-26	365	0.104203	0	0.104202904		1	0	0
1					16-01-30	365	0.092388	0	0.092387638		1	0	0
1					16-02-02	365	0.086283	0	0.086282679		1	0	0
1		2015-02-04	0		2016-02-04	365	0.071031	0	0.071031001		1	0	0
1		2015-02-05	0		2016-02-05	365	0.069641	0	0.069640995		1	0	0
1		2015-02-06	0		2016-02-06	365	0.115234	0	0.115234192		0	0	0
1		2015-02-08	0		2016-02-08	365	0.114907	0	0.114907057		1	0	0
1		2015-02-08	0		2016-02-08	365	0.058356	0	0.058356495		0	0	0
1		2015-02-15	0		2016-02-15	365	0.068472	0	0.068471905		1	0	0

Set these to: 0, blank, or FALSE to exclude the patient from the analysis.

Subgroup Analyses

Liver	
Deceased Donor Adult 1-Year Graft Survival	
2015-01-01 to 2017-06-30	
Number of Transplants:	452
Observed:	47
Expected:	39.84

Include This Patient?	Patient ID	Transplant Date	Graft Failure?	Graft Failure Date	End Follow Up	Follow Up Days	Expected	Observed & Included	Expected & Included		Candidate	Candidate	Candidate
1		2015-01-02	0		2016-01-02	365	0.071305	0	0.071305009		0	0	0
1		2015-01-03	0		2016-01-03	365	0.110962	0	0.110962273		0	0	1
1		2015-01-03	0		2016-01-03	365	0.13501	0	0.135009634		0	0	0
1		2015-01-08	0		20			0	0.093409637		1	0	0
1		2015-01-09	0		20			0	0.07497065		0	0	0
1		2015-01-10	0		20			0	0.164489411		0	0	0
1		2015-01-10	0		20			0	0.101648251		1	0	0
1		2015-01-11	0		20			0	0.079114739		1	0	0
1		2015-01-12	0		20			0	0.084534656		0	0	1
1		2015-01-17	0		2016-01-17	365	0.059417	0	0.059416746		0	0	1
1		2015-01-19	0		2016-01-19	365	0.087197	0	0.087197434		0	0	1
1		2015-01-21	1	2016-01-15	2016-01-21	359	0.073983	1	0.073983253		1	0	0
1		2015-01-21	0		2016-01-21	365	0.111053	0	0.11105283		1	0	0
1		2015-01-23	0		2016-01-23	365	0.107148	0	0.107147508		0	0	0
1		2015-01-24	0		2016-01-24	365	0.132924	0	0.13292369		0	0	0
1		2015-01-26	0		2016-01-26	365	0.104203	0	0.104202904		1	0	0
1		2015-01-30	0		2016-01-30	365	0.092388	0	0.092387638		1	0	0
1		2015-02-02	0		2016-02-02	365	0.086283	0	0.086282679		1	0	0
1		2015-02-04	0		2016-02-04	365	0.071031	0	0.071031001		1	0	0
1		2015-02-05	0		2016-02-05	365	0.069641	0	0.069640995		1	0	0
1		2015-02-06	0		2016-02-06	365	0.115234	0	0.115234192		0	0	0
1		2015-02-08	0		2016-02-08	365	0.114907	0	0.114907057		1	0	0
1		2015-02-08	0		2016-02-08	365	0.058356	0	0.058356495		0	0	0
1		2015-02-15	0		2016-02-15	365	0.068472	0	0.068471905		1	0	0

Turn graft failures on/off or edit the dates here.

Subgroup Analyses

Liver	
Deceased Donor Adult 1-Year Graft Survival	
2015-01-01 to 2017-06-30	
Number of Transplants:	452
Observed:	47
Expected:	39.84

Include This Patient?	Patient ID	Transplant Date	Graft Failure?	Graft Failure Date	End Follow Up	Follow Up Days	Expected	Observed & Included	Expected & Included		Candidate	Candidate	Candidate
1		2015-01-02	0		2016-01-02	365	0.071305	0	0.071305009		0	0	0
1		2015-01-03	0		2016-01-03	365	0.110962	0	0.110962273		0	0	1
1		2015-01-03	0		2016-01-03				0.135009634		0	0	0
1		2015-01-08	0		2016-01-08				0.093409637		1	0	0
1		2015-01-09	0		2016-01-09				0.07497065		0	0	0
1		2015-01-10	0		2016-01-10				0.164489411		0	0	0
1		2015-01-10	0		2016-01-10				0.101648251		1	0	0
1		2015-01-11	0		2016-01-11				0.079114739		1	0	0
1		2015-01-12	0		2016-01-12				0.084534656		0	0	1
1		2015-01-17	0		2016-01-17				0.059416746		0	0	1
1		2015-01-19	0		2016-01-19				0.087197434		0	0	1
1		2015-01-21	1	2016-01-15	2016-01-21				0.073983253		1	0	0
1		2015-01-21	0		2016-01-21				0.11105283		1	0	0
1		2015-01-23	0		2016-01-23				0.107147508		0	0	0
1		2015-01-24	0		2016-01-24				0.13292369		0	0	0
1		2015-01-26	0		2016-01-26				0.104202904		1	0	0
1		2015-01-30	0		2016-01-30				0.092387638		1	0	0
1		2015-02-02	0		2016-02-02				0.086282679		1	0	0
1		2015-02-04	0		2016-02-04				0.071031001		1	0	0
1		2015-02-05	0		2016-02-05				0.069640995		1	0	0
1		2015-02-06	0		2016-02-06	365	0.115234	0	0.115234192		0	0	0
1		2015-02-08	0		2016-02-08	365	0.114907	0	0.114907057		1	0	0
1		2015-02-08	0		2016-02-08	365	0.058356	0	0.058356495		0	0	0
1		2015-02-15	0		2016-02-15	365	0.068472	0	0.068471905		1	0	0

You can add columns to help with subgroup analyses here. Do not add columns in the middle of the data array to the right of this column.

Data tables available monthly with the CUSUM charts!

Kidney | Liver | Heart | Lung

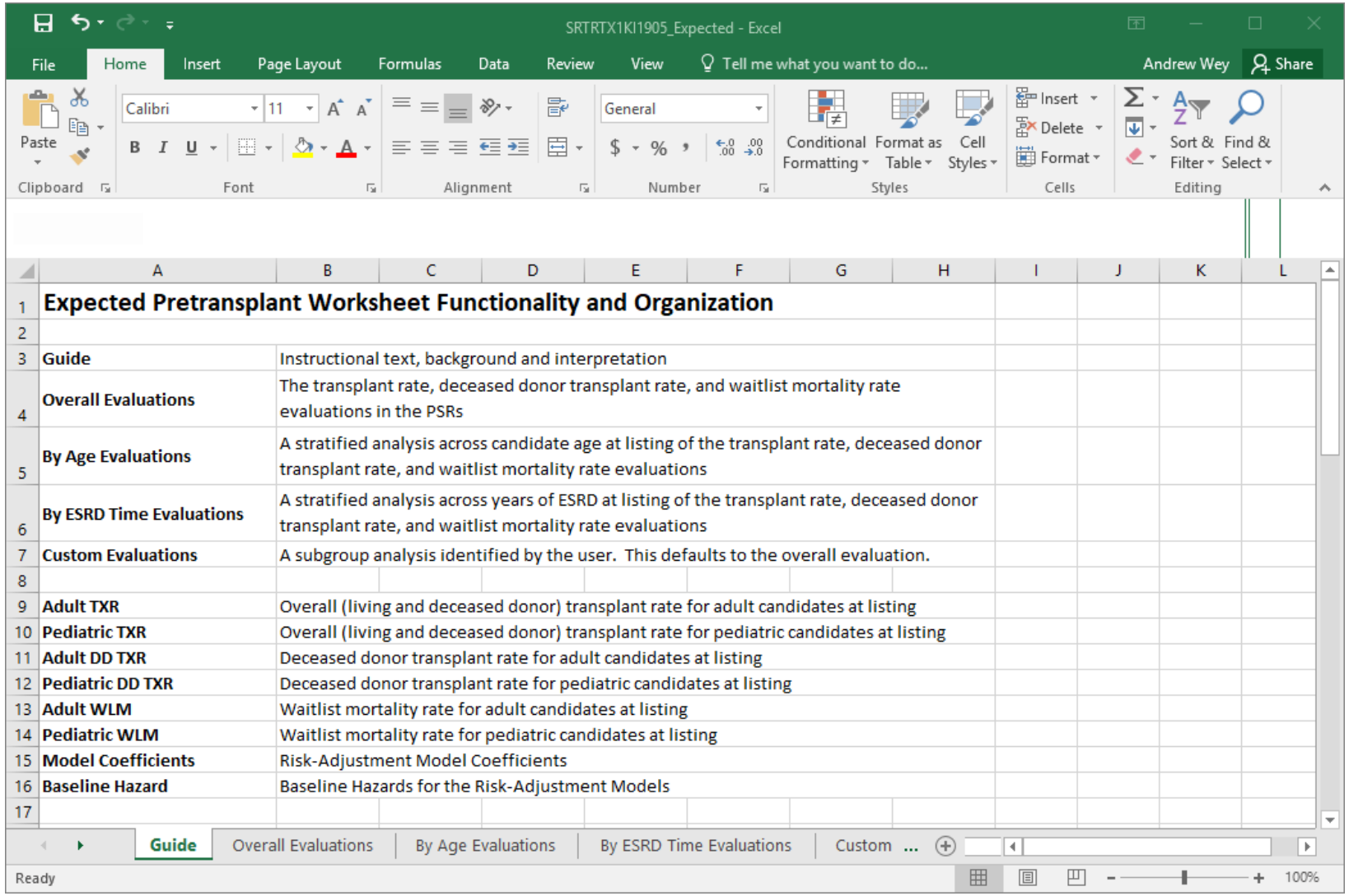
Kidney

October 2018

Cohort Age	Type	Interactive CUSUM Charts (Google Vis)	Printable Static CUSUM Charts (PNG)	Data Tables (HTML)
Adult	Graft Survival	Go	Go	Go
	Patient Survival	Go	Go	Go
Pediatric	Graft Survival	Go	Go	Go
	Patient Survival	**No Report**	**No Report**	**No Report**
Adult and Pediatric	Offer Acceptance	Go	**No Report**	**No Report**

How to use pretransplant expected workbooks?

Will be covered in detail on Friday by Andrew Wey.



	A	B
1	**Expected Pretransplant Worksheet Functionality and Organization**	
2		
3	**Guide**	Instructional text, background and interpretation
4	**Overall Evaluations**	The transplant rate, deceased donor transplant rate, and waitlist mortality rate evaluations in the PSRs
5	**By Age Evaluations**	A stratified analysis across candidate age at listing of the transplant rate, deceased donor transplant rate, and waitlist mortality rate evaluations
6	**By ESRD Time Evaluations**	A stratified analysis across years of ESRD at listing of the transplant rate, deceased donor transplant rate, and waitlist mortality rate evaluations
7	**Custom Evaluations**	A subgroup analysis identified by the user. This defaults to the overall evaluation.
8		
9	**Adult TXR**	Overall (living and deceased donor) transplant rate for adult candidates at listing
10	**Pediatric TXR**	Overall (living and deceased donor) transplant rate for pediatric candidates at listing
11	**Adult DD TXR**	Deceased donor transplant rate for adult candidates at listing
12	**Pediatric DD TXR**	Deceased donor transplant rate for pediatric candidates at listing
13	**Adult WLM**	Waitlist mortality rate for adult candidates at listing
14	**Pediatric WLM**	Waitlist mortality rate for pediatric candidates at listing
15	**Model Coefficients**	Risk-Adjustment Model Coefficients
16	**Baseline Hazard**	Baseline Hazards for the Risk-Adjustment Models
17		

CDRG

Transplantation

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