Using SRTR Data: Monitoring Program Performance

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Scientific Registry of Transplant Recipients

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Disclosures

The views expressed are my own and do not necessarily reflect the official policies of the U.S. Department of Health and Human Services, nor does mention of trade names, commercial practices, or organizations imply endorsement by the U.S. Government.

SR TR SCIENTIFIC REGISTRY OF TRANSPLANT RECIPIENTS

Welcome to Minnesota!

Minnesota has a **shipping port** to the Atlantic Ocean through the St. Lawrence Seaway!

SCIENTIFIC REGISTRY OF TRANSPLANT RECIPIENTS

Data For Monitoring Program Performance

- Pretransplant Metrics
- Posttransplant Metrics
- MPSC Criteria
- Risk Adjustment
- Expected Survival Workbooks
- CUSUMs

SRTR contractual reporting obligations:

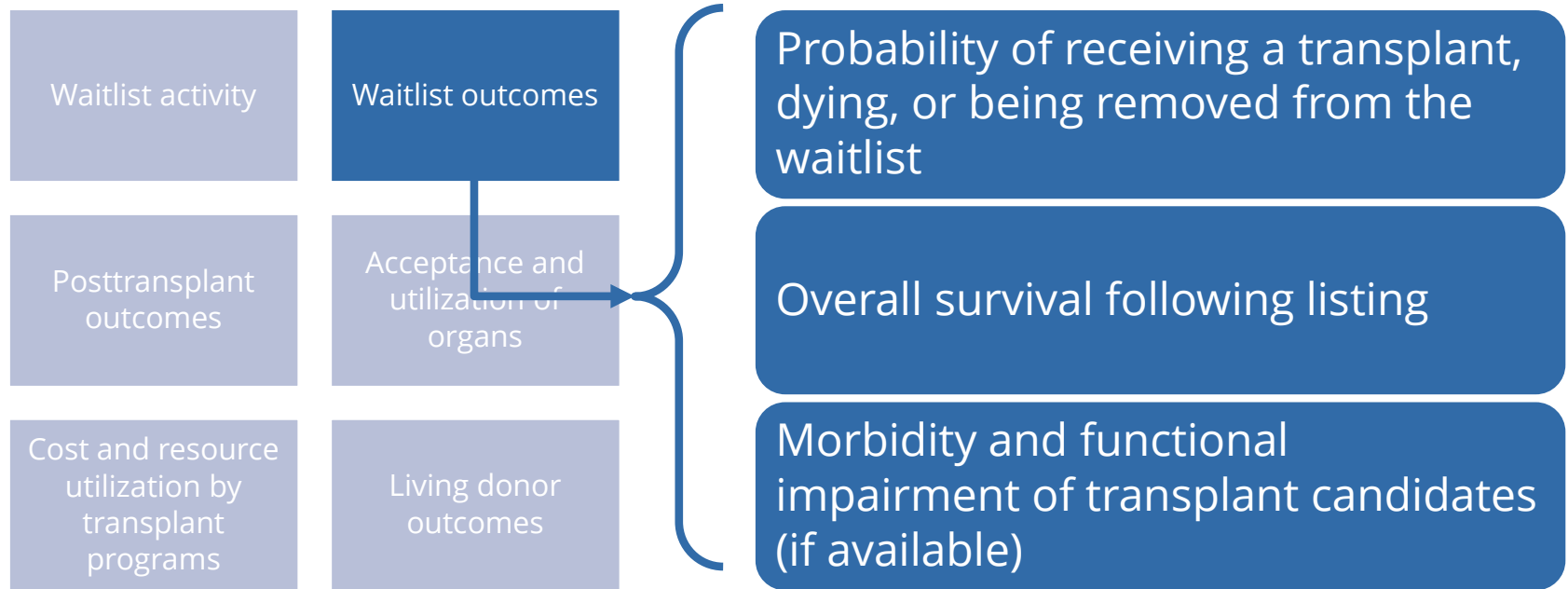|		
Waitlist activity	Waitlist outcomes	Posttransplant outcomes
Acceptance and utilization of organs	Cost and resource utilization by transplant programs	Living donor outcomes

SCIENTIFIC REGISTRY OF TRANSPLANT RECIPIENTS

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

Probability of receiving a transplant, dying, or being removed from the waitlist

Overall survival following listing

Morbidity and functional impairment of transplant candidates (if available)

SCIENTIFIC REGISTRY OF TRANSPLANT RECIPIENTS

Transplant Rates
BETWEEN JULY 2015 AND JUNE 2017

165.6 OUT OF 100

people per year receive a transplant at this hospital

51.7 OUT OF 100

people per year receive a transplant nationally

Waitlist Mortality Rates
BETWEEN JULY 2015 AND JUNE 2017

15.3 OUT OF 100

people per year die waiting for a transplant at this hospital

14.5 OUT OF 100

people per year die waiting for a transplant nationally

SR TR SCIENTIFIC REGISTRY OF TRANSPLANT RECIPIENTS

Figure B1D. Observed and expected deceased donor transplant rates: 07/01/2015 - 06/30/2017

Rate per 100 Person Years

Category	Observed	Expected
All	164.8	71.2
Adult	162.6	70.5
Pediatric	386.1	139.6
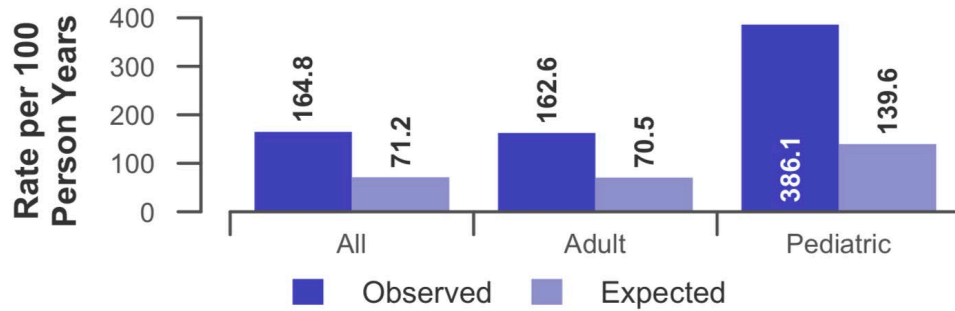
Figure B3D. Observed adult (18+) and pediatric (<18) deceased donor transplant rates: 07/01/2015 - 06/30/2017

Rate per 100 Person Years

	This Center	OPO/DSA	Region	U.S.
Adult (18+)	162.6	127.8	108.5	47.5
Pediatric (<18)	386.1	386.1	192.0	99.3
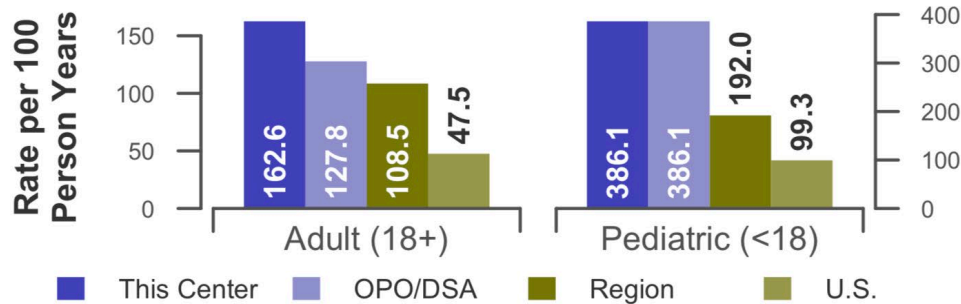
Figure B2D. Deceased donor transplant rate ratio estimate

Estimated Transplant Rate Ratio

2.52
2.09
2.30

SCIENTIFIC REGISTRY OF TRANSPLANT RECIPIENTS
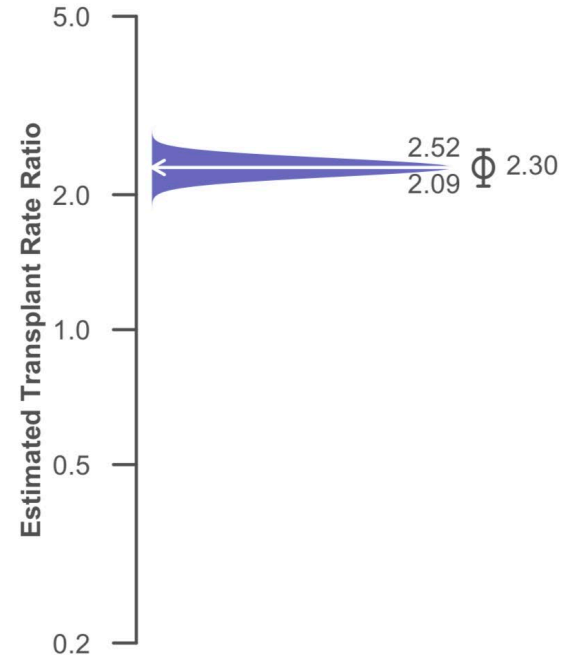
Figure B4. Observed and expected waiting list mortality rates: 07/01/2015 - 06/30/2017

Rate per 100 Person Years

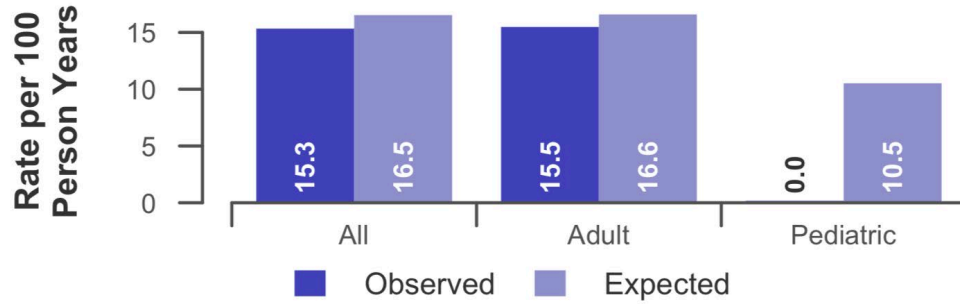|	Observed	Expected
All	15.3	16.5
Adult	15.5	16.6
Pediatric	0.0	10.5

Figure B6. Observed adult (18+) and pediatric (<18) waiting list mortality rates: 07/01/2015 - 06/30/2017

Rate per 100 Person Years

	This Center	OPO/DSA	Region	U.S.
Adult (18+)	15.5	14.4	14.9	14.7
Pediatric (<18)	0.0	0.0	13.7	8.5
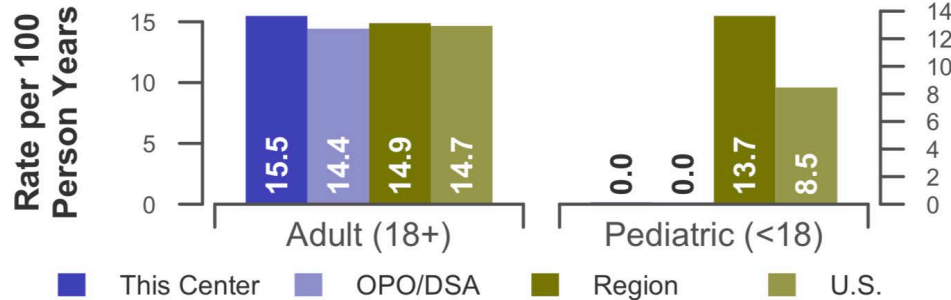
Figure B5. Waiting list mortality rate ratio estimate

Estimated Mortality Rate Ratio

1.22
0.93
0.68

SCIENTIFIC REGISTRY OF TRANSPLANT RECIPIENTS

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

Stratified by donor characteristics, e.g., older donors, DCD, etc.
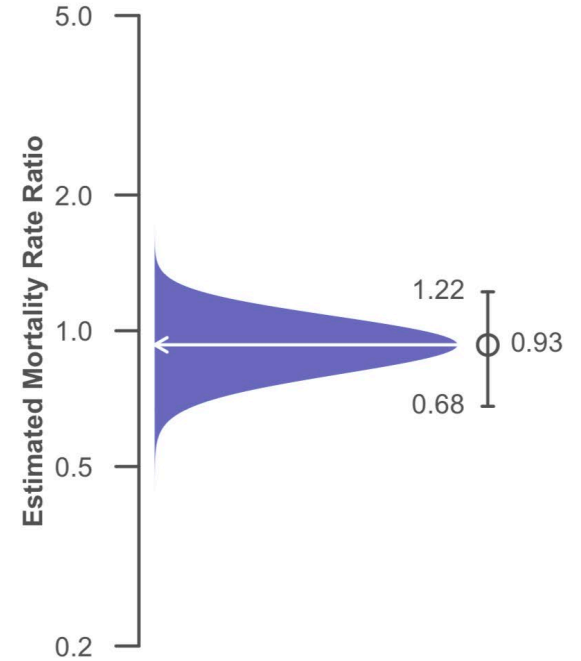
SCIENTIFIC REGISTRY OF
TRANSPLANT RECIPIENTS
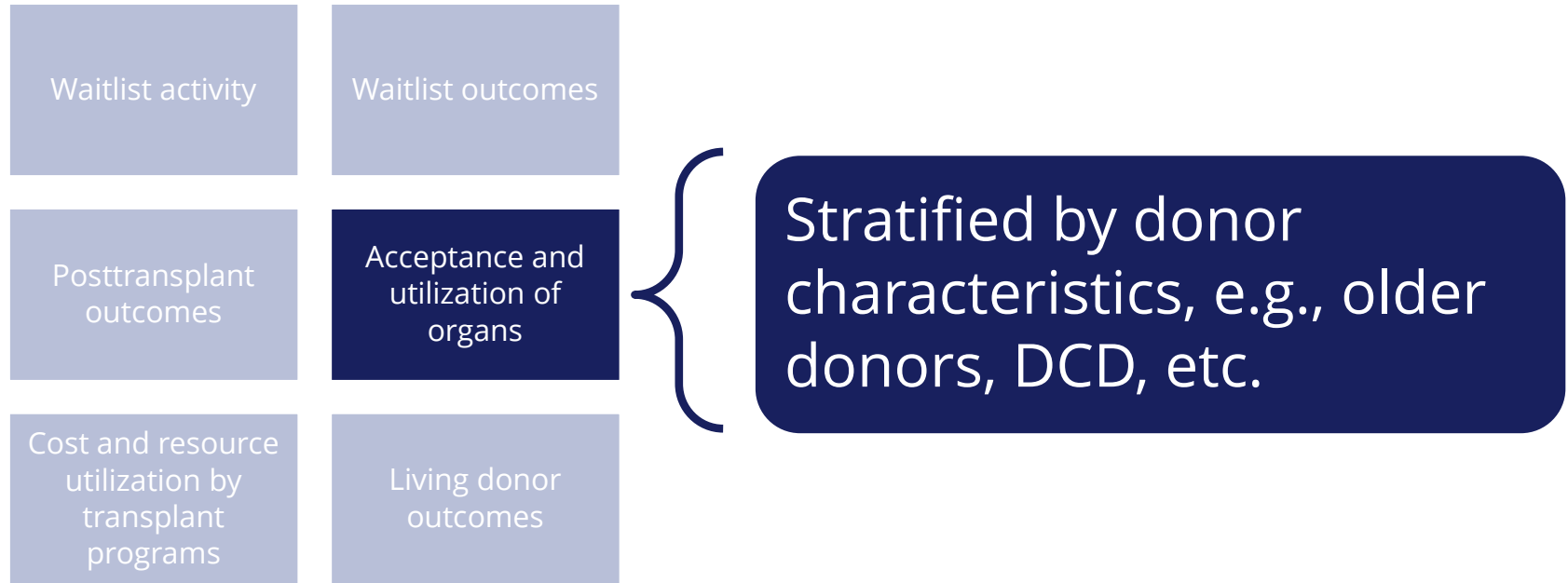
Offer acceptance data new for kidney (July 2017) and heart, lung, and liver (January 2018)

Table B10. Offer Acceptance Practices: 07/01/2016 - 06/30/2017

Offers Acceptance Characteristics	This Center	OPO/DSA	Region	U.S.
Overall				
Number of Offers	2,294	2,644	15,447	174,573
Number of Acceptances	181	209	1,147	6,764
Expected Acceptances	140.9	159.8	1,168.3	6,758.7
Offer Acceptance Ratio*	1.28	1.30	0.98	1.00
95% Credible Interval**	[1.10, 1.47]	--	--	--

SCIENTIFIC REGISTRY OF TRANSPLANT RECIPIENTS

PHS increased infectious risk

Number of Offers	513	642	3,778	47,761
Number of Acceptances	47	56	261	1,816
Expected Acceptances	39.5	45.8	276.1	1,813.0
Offer Acceptance Ratio*	1.18	1.21	0.95	1.00
95% Credible Interval**	[0.87, 1.53]	--	--	--

DCD donor

Number of Offers	438	469	2,697	26,614
Number of Acceptances	26	26	61	432
Expected Acceptances	9.0	9.7	76.0	438.7
Offer Acceptance Ratio*	2.55	2.40	0.81	0.98
95% Credible Interval**	[1.69, 3.58]	--	--	--

HCV+ donor

Number of Offers	114	149	352	7,998
Number of Acceptances	14	16	34	308
Expected Acceptances	10.4	12.2	32.8	308.4
Offer Acceptance Ratio*	1.29	1.27	1.03	1.00
95% Credible Interval**	[0.74, 2.00]	--	--	--

Hard-to-Place Livers (Over 50 Offers)

Number of Offers	1,232	1,434	6,654	106,499
Number of Acceptances	55	55	88	590
Expected Acceptances	6.7	7.5	42.4	591.1
Offer Acceptance Ratio*	6.54	5.98	2.03	1.00
95% Credible Interval**	[4.96, 8.35]	--	--	--

Donor more than 500 miles away

Number of Offers	1,086	1,219	6,149	58,630
Number of Acceptances	58	61	178	680
Expected Acceptances	33.4	37.0	196.2	639.1
Offer Acceptance Ratio*	1.70	1.62	0.91	1.06
95% Credible Interval**	[1.30, 2.15]	--	--	--

Figure B7. Offer acceptance: Overall
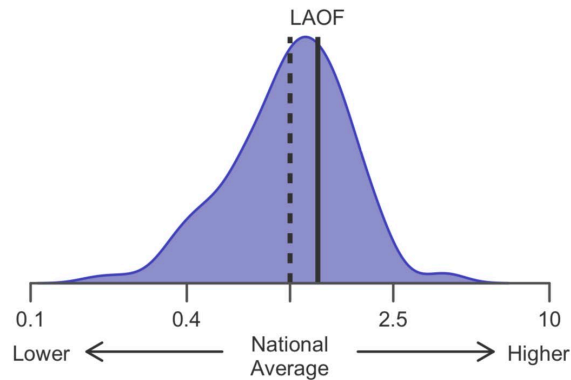
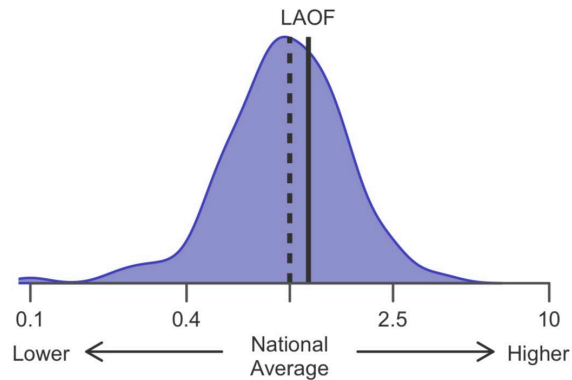Figure B8. Offer acceptance: PHS increased infectious risk
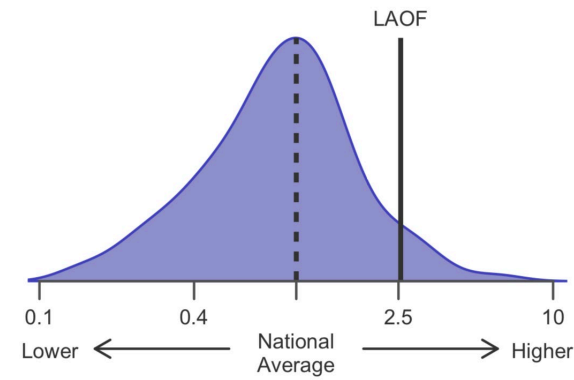
Figure B9. Offer acceptance: DCD Donor

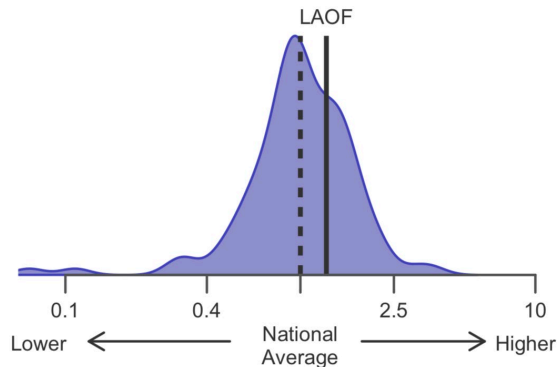Figure B10. Offer acceptance: HCV+ Donor
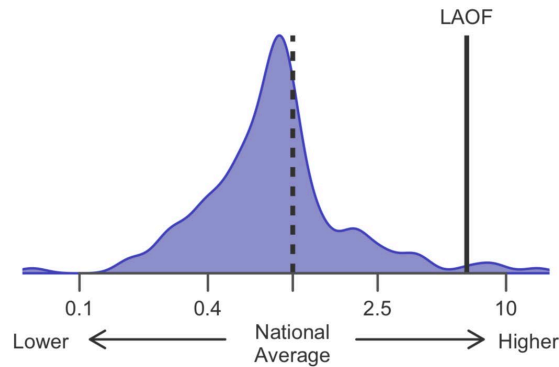
Figure B11. Offer acceptance: Offer number > 50

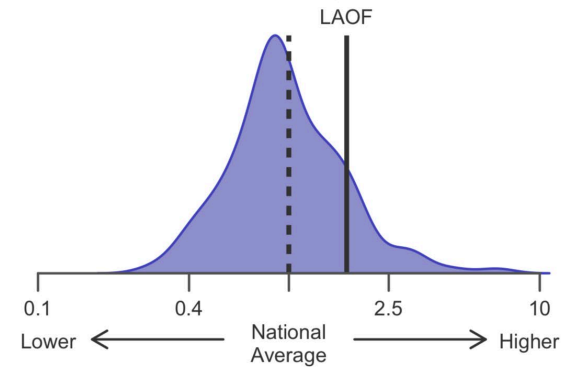Figure B12. Offer acceptance: Donor more than 500 miles away
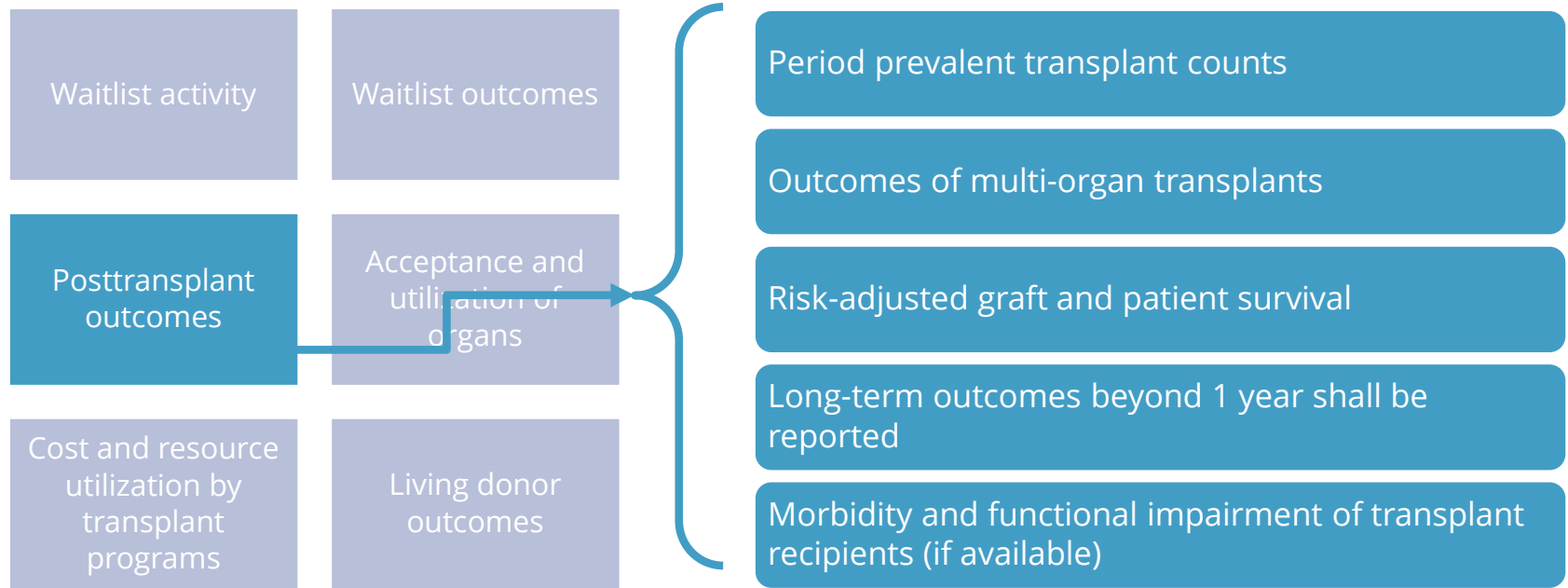
SRTR contractual reporting obligations:

Waitlist activity

Waitlist outcomes

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Acceptance and utilization of organs

Cost and resource utilization by transplant programs

Living donor outcomes

Period prevalent transplant counts

Outcomes of multi-organ transplants

Risk-adjusted graft and patient survival

Long-term outcomes beyond 1 year shall be reported

Morbidity and functional impairment of transplant recipients (if available)

SCIENTIFIC REGISTRY OF TRANSPLANT RECIPIENTS

Table C6. Adult (18+) 1-year survival with a functioning graft
Single organ transplants performed between 07/01/2014 and 12/31/2016
Deaths and retransplants are considered graft failures

	LAOF	U.S.
Number of transplants evaluated	465	15,226
Estimated probability of surviving with a functioning graft at 1 year (unadjusted for patient and donor characteristics)	89.81%	90.17%
Expected probability of surviving with a functioning graft at 1 year (adjusted for patient and donor characteristics)	90.23%	--
Number of observed graft failures (including deaths) during the first year after transplant	46	1,420
Number of expected graft failures (including deaths) during the first year after transplant	43.03	--
Estimated hazard ratio*	1.07	--
95% credible interval for the hazard ratio**	[0.79, 1.39]	--

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Number of **observed** graft failures (including deaths) during the first year after transplant [O]	46	1,420
Number of **expected** graft failures (including deaths) during the first year after transplant [E]	43.03	--
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Hazard Ratio

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Hazard Ratio (O+2)/(E+2)
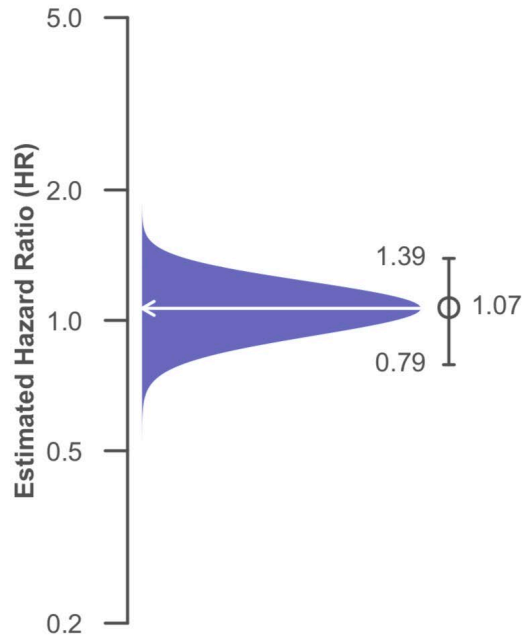
Figure C3. Adult (18+) 1-year graft failure HR estimate

Figure C4. Adult (18+) 1-year graft failure HR program comparison

SCIENTIFIC REGISTRY OF TRANSPLANT RECIPIENTS
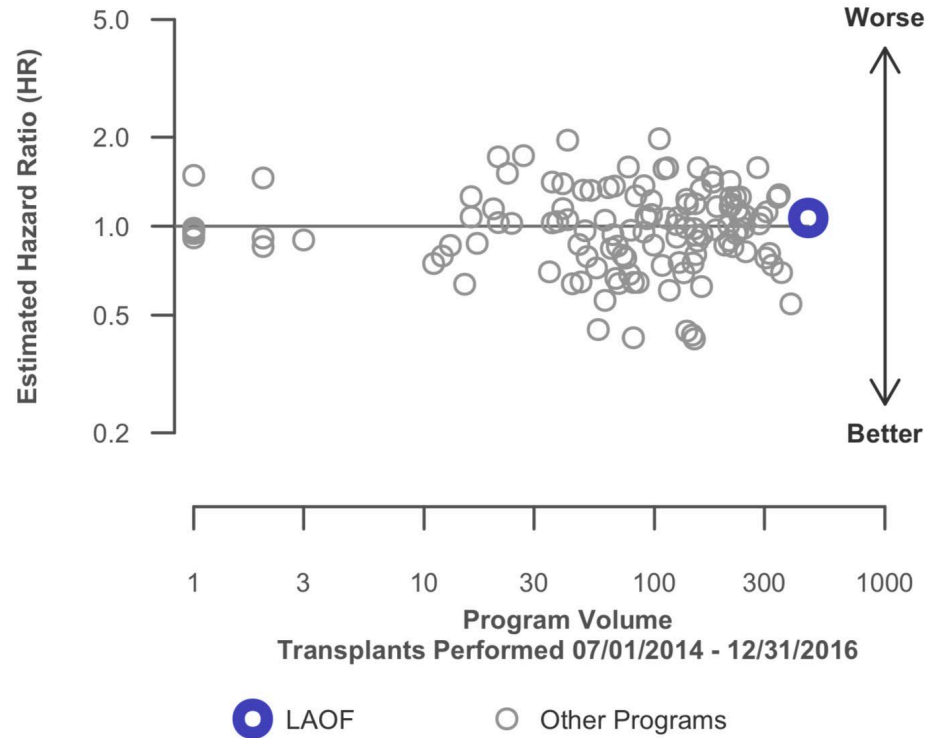
Visualization of MPSC's Performance Thresholds for Transplant Programs

SCIENTIFIC REGISTRY OF
TRANSPLANT RECIPIENTS
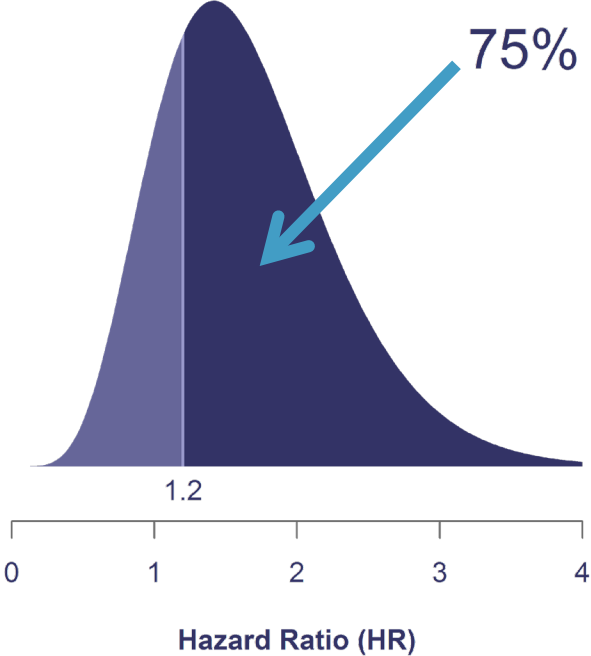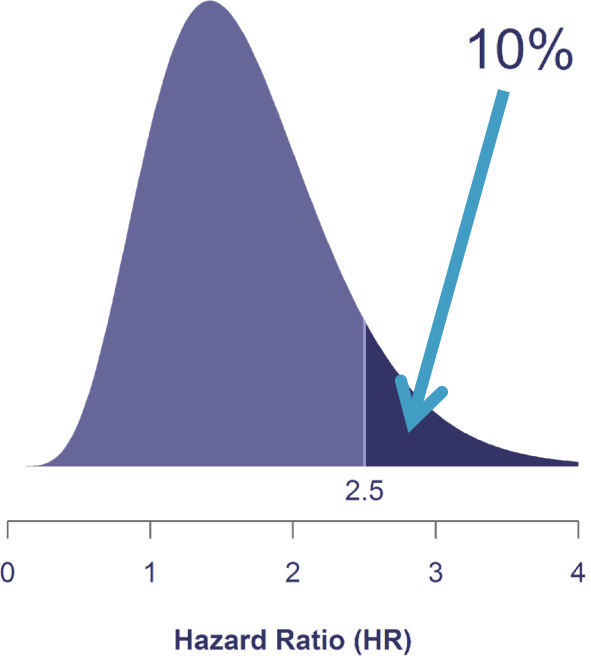
LAOF's Liver Program and MPSC Screening

The MPSC Screening Algorithm

Observed: 46
Expected: 43.03

Legend:
— Hazard Ratio
---- Expected
--- MPSC Criteria #1
····· MPSC Criteria #2

P[HR>1.2] = 18.8%

P[HR>2.5] = 0%

Hazard Ratio = 1.07

Hazard Ratio (x-axis: 0.0, 0.5, 1.0, 1.5, 2.0, 2.5, 3.0)
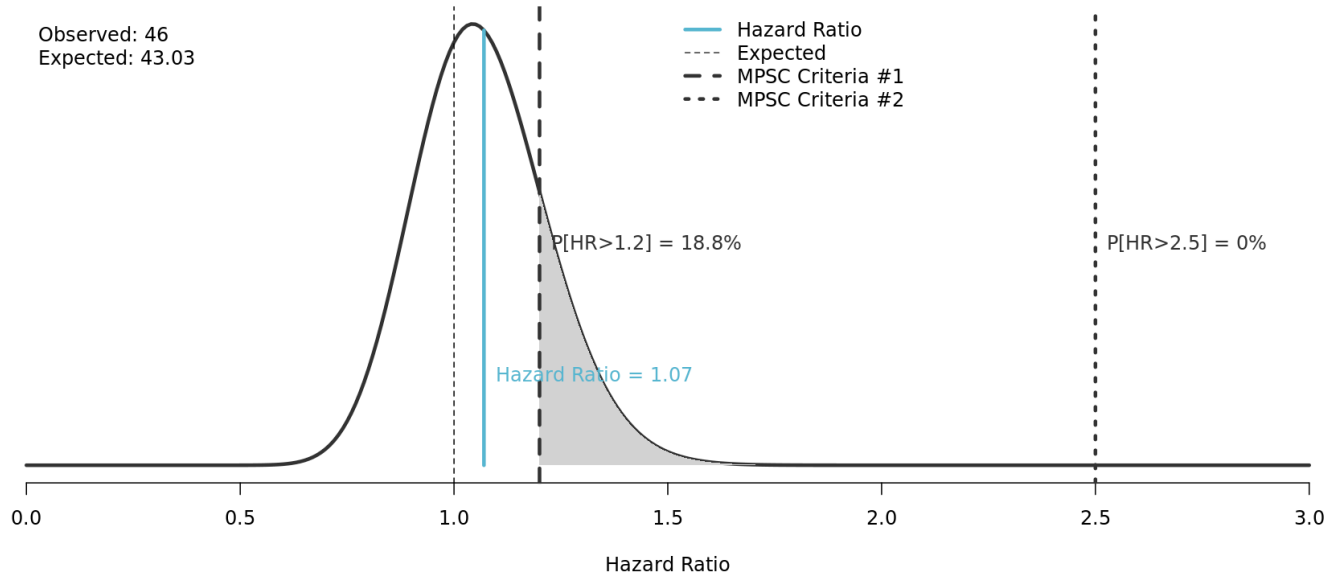
Note: P[HR>1.2] = the probability that the hazard ratio is greater than 1.2.

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Example Program Meeting MPSC Screen
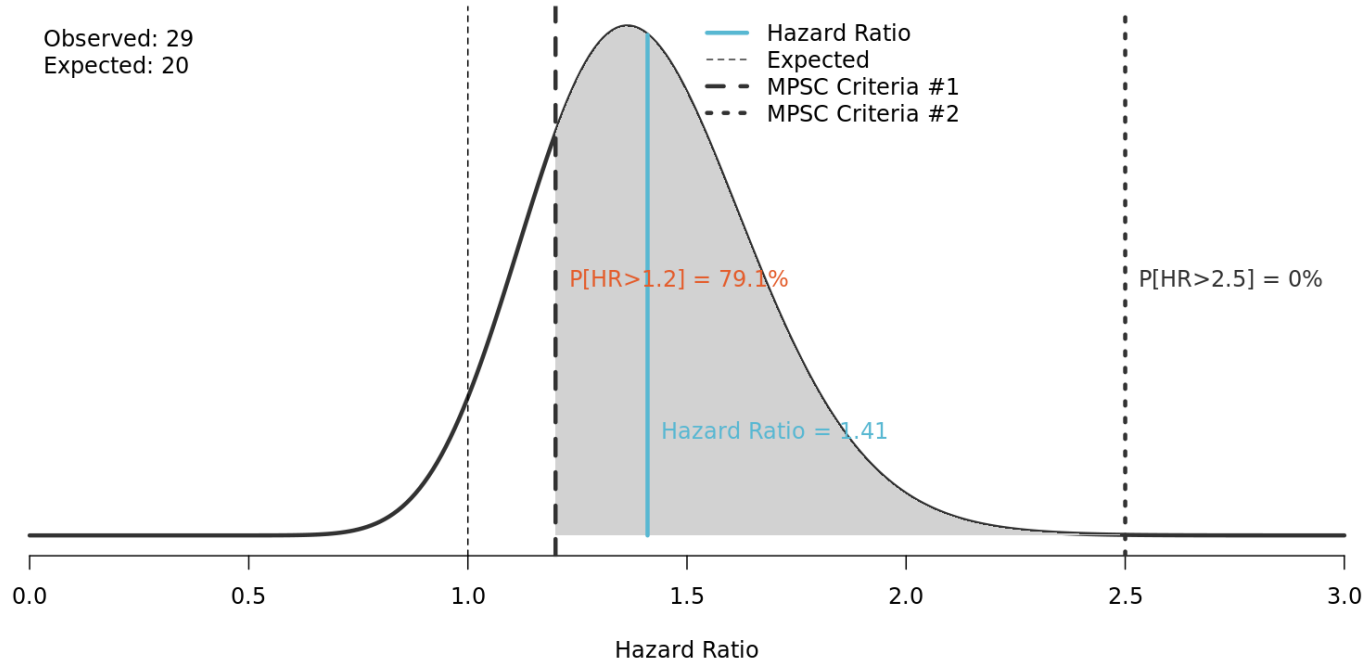
Risk Adjustment Models Available Under "Reports and Tools"

SRTR Risk Adjustment Model Documentation: Posttransplant Outcomes

Choose a PSR Release Date:

January 2018 ▾

Heart, Kidney, Liver, and Lung | Kidney-Pancreas and Pancreas

Choose a transplant type:

- ⦿ Heart
- ○ Kidney
- ○ Liver
- ○ Lung

Choose an outcome:

- ⦿ Graft Survival
- ○ Patient Survival

Choose an age group:

- ⦿ Adult (18+)
- ○ Pediatric (<18)

Choose a donor type:

- ⦿ Deceased Donor

Model Elements | Model Coefficients | Model Element Plots | Baseline Cumulative Hazard | Other Elements | Additional info

Every PSR cycle, the SRTR refits the models for graft and patient survival. Many potential predictors were considered, and these elements were found to produce the best predictive model. Other potential predictors that were not found to improve the model can be found on the "Other Elements Considered" tab.

Note: the list of predictors may include indicators for multiorgan transplant types. The SRTR is building new models so that multiorgan transplants can be included in future risk-adjusted outcomes, although they are not currently included in the data presented in the program-specific reports.

Show 50 entries   Search:

Element Type	Element
Candidate	Candidate Diabetes Type
Candidate	Candidate Highest Education
Candidate	Candidate Race
Donor	Donor Age (yr)
Donor	Donor BMI

The Model Elements Table:

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Show 50 entries   Search: [   ]

Element Type	Element
Candidate	Candidate Diabetes Type
Candidate	Candidate Highest Education
Candidate	Candidate Race
Donor	Donor Age (yr)
Donor	Donor BMI
Donor	Donor BUN
Donor	Donor Cause of Death

Contains a list of all factors currently included in the risk adjustment model.

SCIENTIFIC REGISTRY OF TRANSPLANT RECIPIENTS

The Model Coefficients Table:

This table shows the coefficients for each level of the risk adjusters included in the model. These coefficients are from a Cox proportional hazards model. To better understand the relationship between each element and modeled risk, click on the 'Model Element Plots' tab. To download a .CSV file of the model, click the button above.

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Coefficients:

⬇ Download .CSV File

Show 50 entries   Search: [   ]

Element	Level	Coefficient
Candidate Diabetes Type	None	0.000000
Candidate Diabetes Type	Type I	0.000000
Candidate Diabetes Type	Type II	0.055544
Candidate Diabetes Type	Type Other/Unknown	0.000000
Candidate Diabetes Type	Missing	0.000000
Candidate Highest Education	Grade School/None	0.233273
Candidate Highest Education	High School	0.000000

Contains the actual statistical model along with a downloadable CSV file if you would like to work with the model directly.

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The Model Element Plots:

Donor age
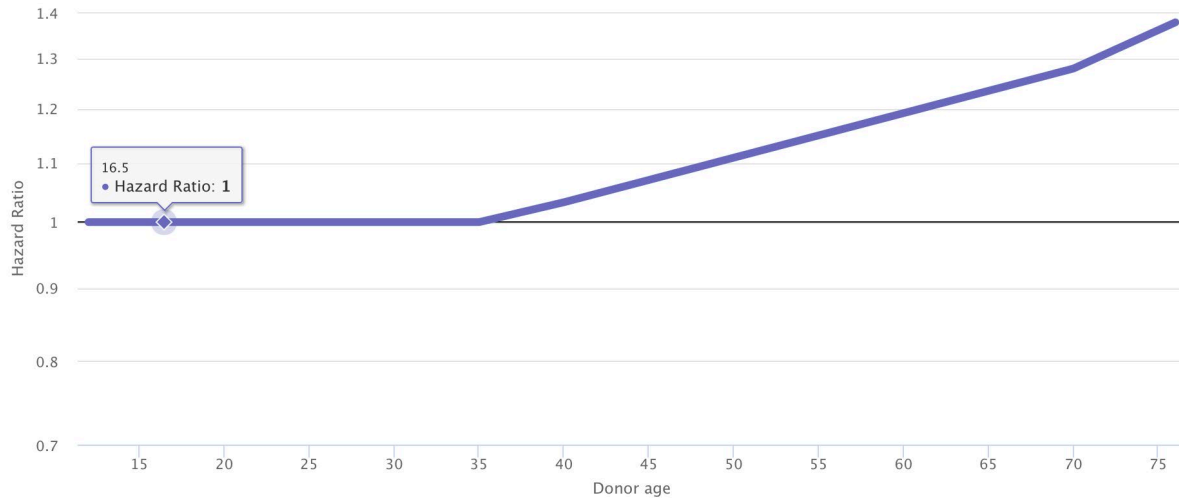
Allows you to visualize the relationship between the element and predicted risk of graft failure or death.

The Baseline Cumulative Hazard:

Baseline Hazard:

⬇ Download .CSV File

Baseline Cumulative Hazard
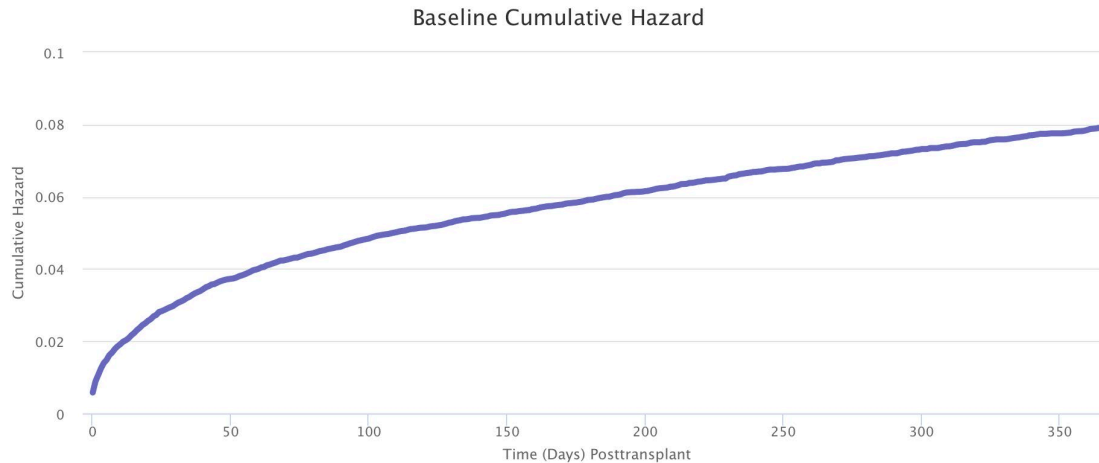
Needed by a statistician if working with the actual model. The function is provided as a downloadable CSV file.

SR
TR   SCIENTIFIC REGISTRY OF
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The Other Elements Tab:

Model Elements | Model Coefficients | Model Element Plots | Baseline Cumulative Hazard | **Other Elements** | Additional info

Many potential predictors of graft survival were considered, and the elements that were found to produce the best predictive model can be found on the "Model Elements" tab. The predictors listed here were not found to improve the model, but may be included in future models.

Show [50] entries   Search: [   ]

Element Type	Excluded Element
Candidate	Candidate history of portal vein thrombosis
Candidate	Candidate last SRTR MELD/PELD given
Donor	Donor blood type
Donor	Donor clinical lung infection
Donor	Donor ethnicity
Donor	Donor history of cancer
Donor	Donor log(INR)
Donor	Donor other infection

Provides a listing of other elements considered during model development but not found to add predictive value.

Additional Info tab:

Model Elements   Model Coefficients   Model Element Plots   Baseline Cumulative Hazard   Other Elements   Additional info

Additional Model Information

This document contains additional information that you may find useful in understanding how the SRTR calculates certain variables used in the models.

Body Mass Index (BMI)

SRTR calculates recipient and donor body mass index (BMI) using height (cm) and weight (kg) as follows:

$(BMI = \frac{weigt(kg)}{height(m)^{2}})$

Race and Hispanic/Latino Ethnicity

SRTR considers racial groups separately from Hispanic Ethnicity. Racial groupings are collected within the UNet[SM] system include the following:

- American Indian or Alaska Native
- Asian

Provides additional information about the model.

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
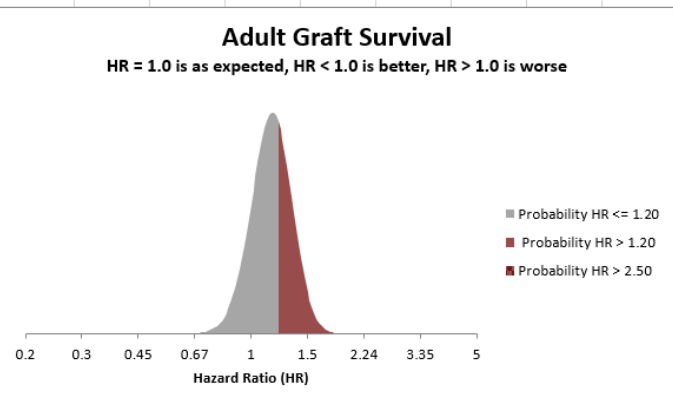
Adult Patient Survival

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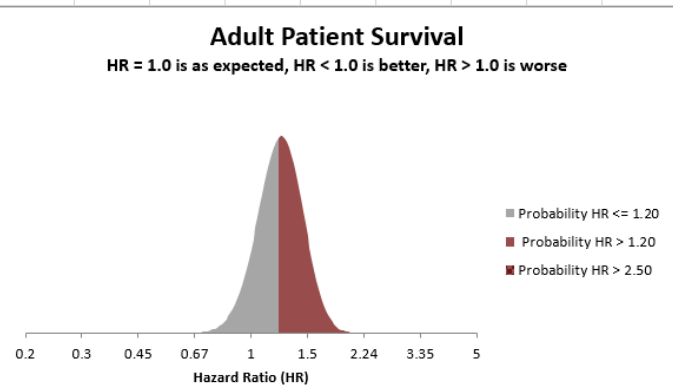
Guide | **Flag Criteria** | DD Adult GS 1Y | LD Adult GS 1Y | DD Adult PS 1Y | LD Adult PS 1Y | DD Pediatric GS 1Y | LD Pe

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 C
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

SCIENTIFIC REGISTRY OF TRANSPLANT RECIPIENTS

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.

SCIENTIFIC REGISTRY OF
TRANSPLANT RECIPIENTS

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		20			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	365			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				0.10164825		1	0	0
1		2015-01-11	0		2016-01-11				0.079114739		1	0	0
1		2015-01-12	0		2016-01-12				0.034534656		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

SCIENTIFIC REGISTRY OF TRANSPLANT RECIPIENTS

CUSUM Charts

CUSUMs (<u>cu</u>mulative <u>sum</u>) are currently provided for the following metrics:

Posttransplant Graft/Patient Survival

Offer Acceptance

More on CUSUMs Friday Plenary @ 8:45

Welcome to Minnesota!

According to a Weather.com analysis, Minneapolis is the **coldest major city in America**, based on 30-year average temperatures from the NOAA's National Climatic Data Center during December, January, and February. On average, the city experiences **23 to 25 subzero cold days each year**.

SCIENTIFIC REGISTRY OF TRANSPLANT RECIPIENTS

CDRG

CDRG
Transplantation

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Carl Fils-Aime
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Patrick Johnson
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Eugene Shteyn, MS

Thank you...

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Scientific Registry of Transplant Recipients

SRTR