

# The New MPSC Transplant Performance Metrics: Are You Ready?

## TODAY'S PANELISTS



**Lindsay Smith**

MSN, RN

Transplant Quality Director  
Vanderbilt University  
Medical Center



**Jon Snyder**

PhD, MS

Director, SRTR  
Director of Transplant  
Epidemiology,  
Hennepin Healthcare  
Research Institute

# Continuing Education Information

## Evaluations & Certificates

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### Nursing

The Organ Donation and Transplantation Alliance is offering **1.0 hours of continuing education credit** for this offering, approved by The California Board of Registered Nursing, Provider Number CEP17117. No partial credits will be awarded. CE credit will be issued upon request within 30 days post-webinar.

### CEPTC

The Organ Donation and Transplantation Alliance will be offering **1.0 Category I CEPTC credits** from the American Board for Transplant Certification. Certified clinical transplant and procurement coordinators and certified clinical transplant nurses seeking CEPTC credit must complete the evaluation form within 30 days of the event.

### Certificate of Attendance

Participants desiring CE's that are not being offered, should complete a certificate of attendance.

- Certificates should be claimed within 30 days of this webinar.
- We highly encourage you to provide us with your feedback through completion of the online evaluation tool.
- Detailed instructions will be emailed to you within the next 24 hours.
- You will receive a certificate via email upon completion of a certificate request or an evaluation
- Group leaders, please share the follow-up email with all group participants who attended the webinar.



**Deanna Fenton**

Senior Manager, Program  
Development and  
Operations



**Need Assistance?**

Contact Us via Zoom Chat, or  
[info@organdonationalliance.org](mailto:info@organdonationalliance.org)  
786-866-8730

# Meet Our Moderator



**Jenna Lawson** MS

Abdominal Transplant Quality Consultant

VANDERBILT  UNIVERSITY  
MEDICAL CENTER

# Meet Our Presenters



**Jon Snyder**

PHD, MS

Director, SRTR; Director, Transplant  
Epidemiology, Hennepin Healthcare  
Research Institute



**Lindsay Smith**

RN, MSN

Transplant Quality Director





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# The New MPSC Transplant Performance Metrics: Are You Ready?

**Jon Snyder, PhD**

Director, Scientific Registry of Transplant Recipients  
Director, Transplant Epidemiology  
Chronic Disease Research Group  
Hennepin Healthcare Research Institute

February 28, 2023

# Disclosures



The views expressed 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.

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## Clinical Policy Board:

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## Editorial Board Participation:

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# Presentation Goals



Understand the 4 metrics the Membership and Professional Standards Committee is using to assess transplant program performance.

Identify how to find and interpret the risk adjustment models used to adjust program performance metrics.

Understand the triggers for MPSC review, i.e., flagging rules.

# The 4 “New” Metrics Being Used by the OPTN’s Membership and Professional Standards Committee (MPSC)

## Pretransplant Metrics

## Posttransplant Metrics







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# Pretransplant (waitlist) Mortality Rate Ratio

# Pretransplant (Waitlist) Mortality



## Question Being Addressed:

On days when a patient is not transplanted, are patients listed by this program more/less likely to die compared with similar patients nationally?

# Pretransplant (Waitlist) Mortality Rate Ratio: Methodology

Compares Observed (O) deaths to expected (E) deaths from the time the patient is listed until they are transplanted.

**O = Observed Deaths Between Listing and Transplant.**

**E = Expected Deaths Between Listing and Transplant.**

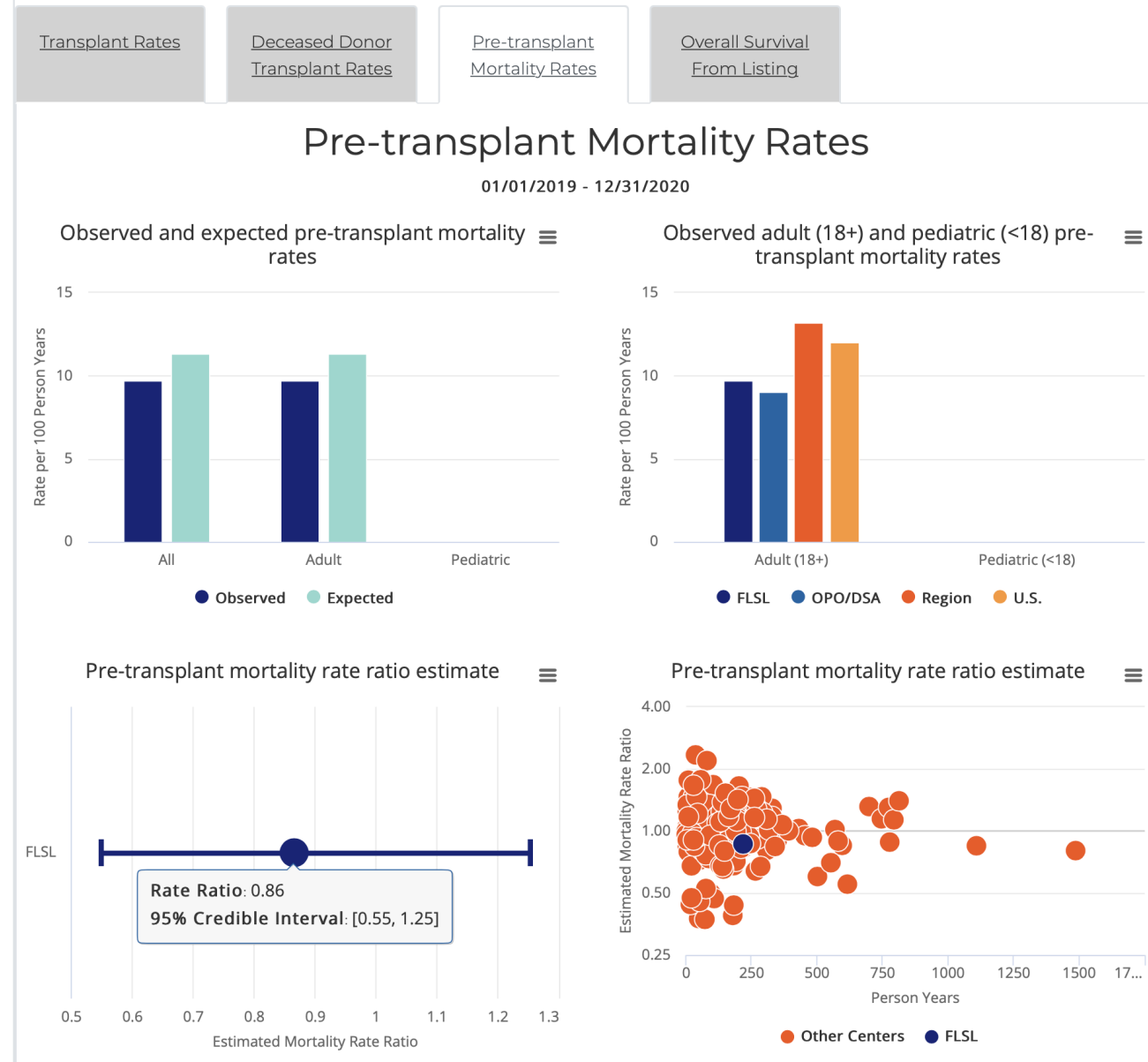
**Waitlist Mortality Rate Ratio =  $(O+2)/(E+2)$ .**

# Pretransplant (Waitlist) Mortality Rate Ratio: Methodology

Evaluation Window	2-year evaluation window
Days evaluated	Any day within the window from waitlisting until transplant.
Post-removal deaths	Deaths are evaluated post-removal unless transferred to another program. If a person is removed for reason of recovery (transplant no longer needed), deaths are evaluated for a maximum of 60 additional days.

# SRTR Reporting

Pre-transplant mortality rates are reported with detail by adult and pediatric candidates (if applicable) and comparisons to outcomes within the donation service area (DSA), the OPTN region, and comparisons to all other programs.



# Pretransplant Workbooks are Available to Perform Subgroup Analyses

Available on the SRTR Secure Site.

Programs can view evaluations within subgroups of choice. Example shown at right is by candidate age groups

<b>Overall Waitlist Mortality Rate</b>	
<b>All candidates</b>	
Number of Candidates	145
Observed Deaths (O)	9
Expected Deaths (E)	5.96
Overall Waitlist Mortality Rate Ratio	1.38
<b>Candidate age: &lt;40</b>	
Number of Candidates	43
Observed Deaths (O)	2
Expected Deaths (E)	0.94
Overall Waitlist Mortality Rate Ratio	1.36
<b>Candidate age: 40-&lt;60</b>	
Number of Candidates	46
Observed Deaths (O)	4
Expected Deaths (E)	2.01
Overall Waitlist Mortality Rate Ratio	1.5
<b>Candidate age: ≥60</b>	
Number of Candidates	55
Observed Deaths (O)	3
Expected Deaths (E)	3.01
Overall Waitlist Mortality Rate Ratio	1



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# Offer Acceptance Rate Ratio

# Offer Acceptance Rate Ratio



## Question Being Addressed:

Given the types of offers received to the specific candidates, does this program accept offers at a rate higher/lower than national experience for similar offers to similar candidates?



# Offer Acceptance Rate Ratio: Methodology

Compares Observed (O) offer acceptances to expected (E) offer acceptances.

**O = Observed Offer Acceptances**

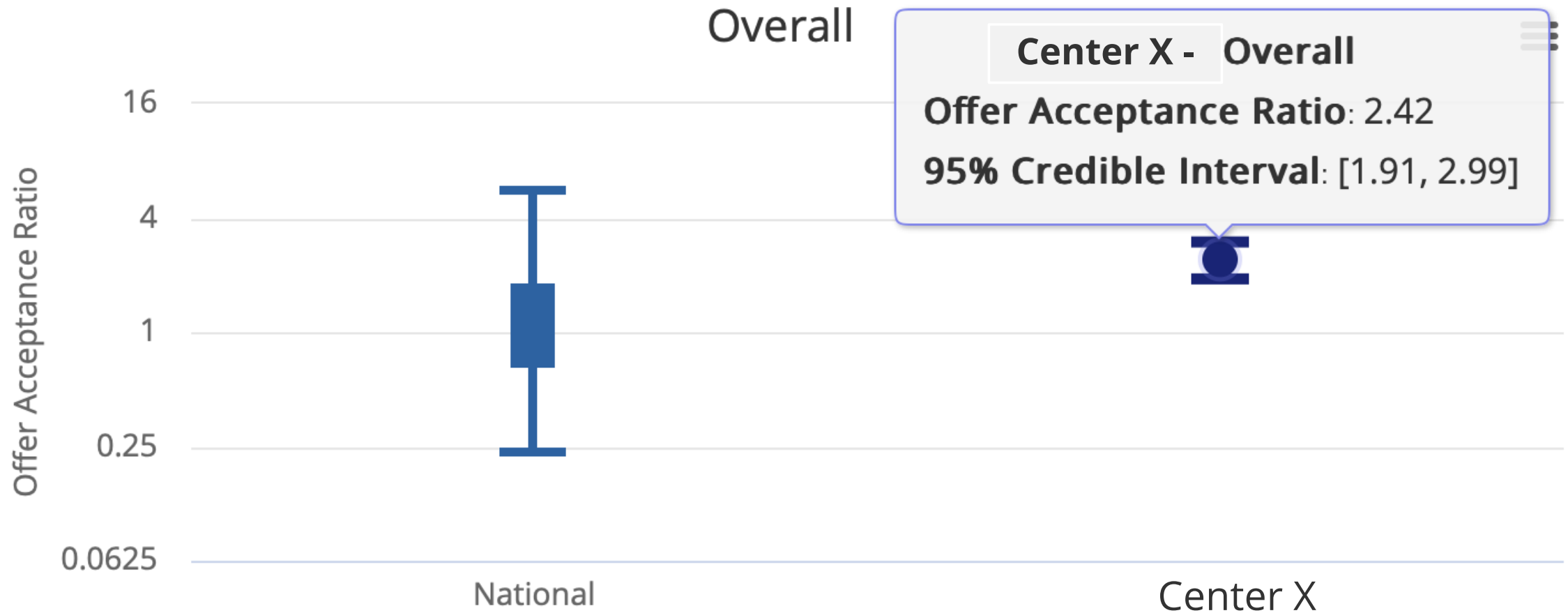
**E = Expected Offer Acceptances**

**Offer Acceptance Rate Ratio =  $(O+2)/(E+2)$ .**

# Offer Acceptance Rate Ratio: Methodology

<p>Evaluation Window</p>	<p>1-year evaluation window</p>
<p>Offers that are NOT evaluated</p>	<ol style="list-style-type: none"> <li>1. Bypassed offers</li> <li>2. Match run had no acceptances</li> <li>3. Offer occurred after the organ was accepted*</li> <li>4. Duplicate offers across multiple match runs**</li> <li>5. Offers to multi-organ candidates***</li> </ol>
<p>Notes</p>	<p>*Kidney offers declined under the Kidney Accelerated Placement Program may be included after the last acceptance if normal allocation restarted.</p>
<p>Alliance 02/28/2023</p>	<p>**Kidney allocation may offer candidates dual kidneys after the single kidney. In this situation, the second offer to the candidate is not included.</p> <p>***Kidney-alone offers are included for KI candidates if the program indicated the patient will entertain kidney-alone offers.</p>

# Consider Offer Acceptance





# Subgroups Available

Donor Characteristics	History of Acceptance	Number of Offers	Number of Acceptances	Expected Acceptances	Offer Acceptance Ratio
Overall	Above Average	99	22	9.00	2.18
PHS Increased Infectious Risk	Above Average	31	9	2.00	2.75
Ejection Fraction (Less Than or Equal to 50)	Average	6	1	0.88	1.04
Donor Age (> 40)	Above Average	30	6	1.43	2.34
Over 50 Offers	Somewhat Above Average	17	3	0.60	1.92
Over 500 Miles Away	Above Average	30	7	1.86	2.33
Weekend	Above Average	24	5	1.31	2.12





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# Subgroups Available

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# 90-day and Conditional 1-Year Graft Survival

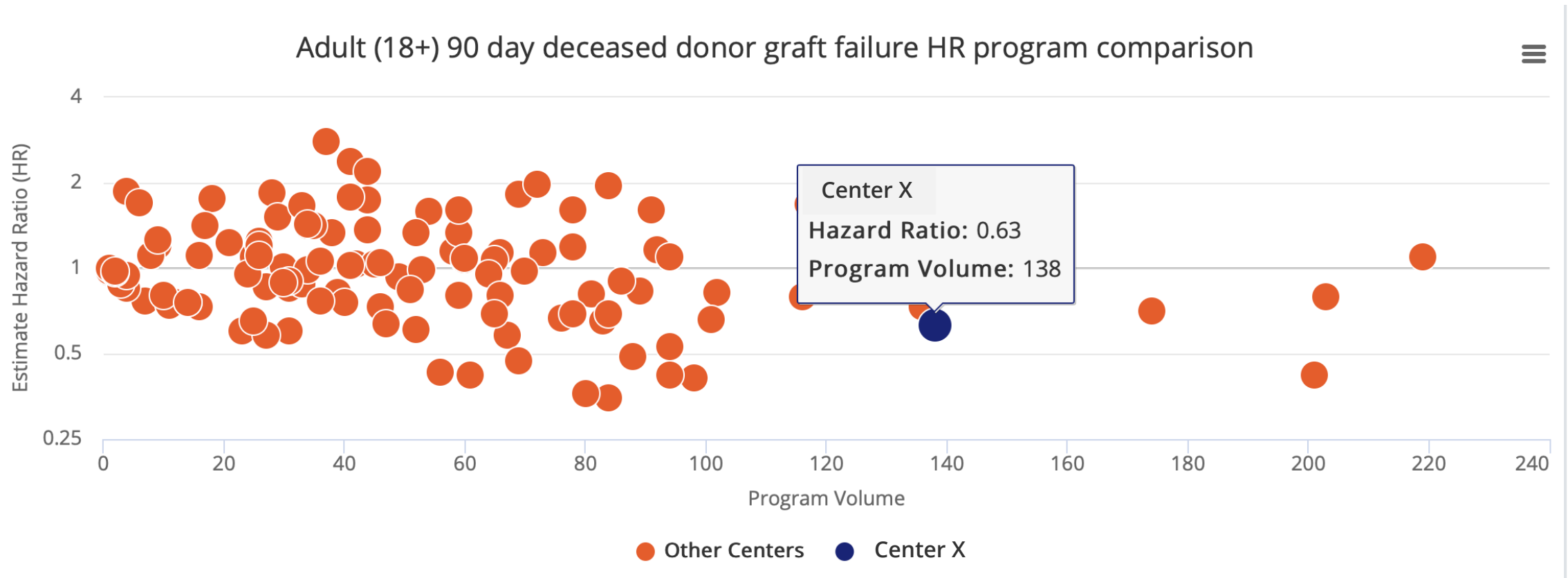
# 90-Day and Conditional 1-Year Graft Survival



90-Day  
Evaluation

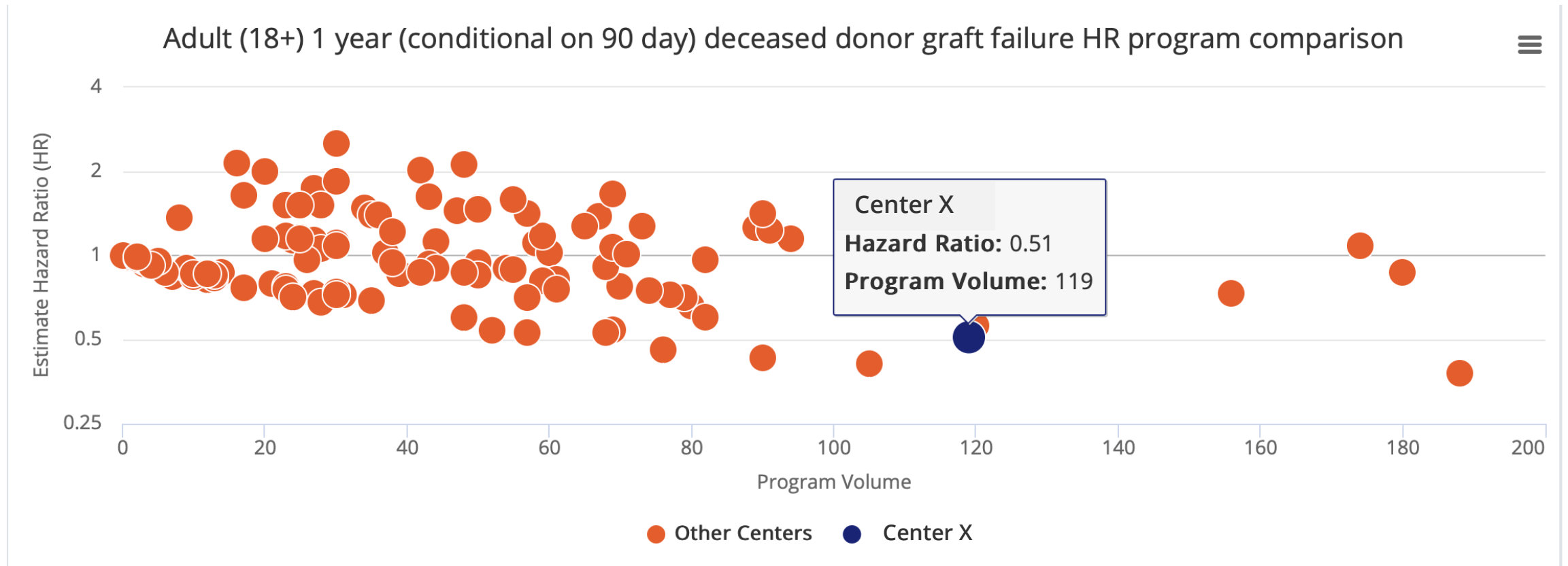
Conditional 1-year: Conditional on graft survival to day 90, evaluates graft survival from day 90 to 1-year.

# 90-day Heart Graft Failure Rate Ratios






# Conditional 1-Year Heart Graft Failure Rate Ratios

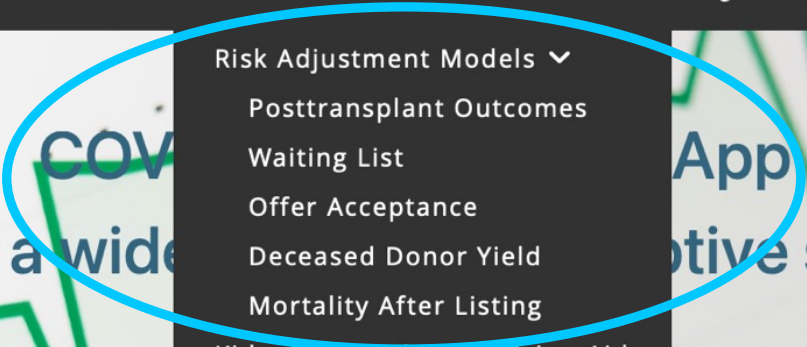


**FIND & COMPARE TRANSPLANT PROGRAMS**

Select Organ 

Search by Postal Code or Program Name (optional)

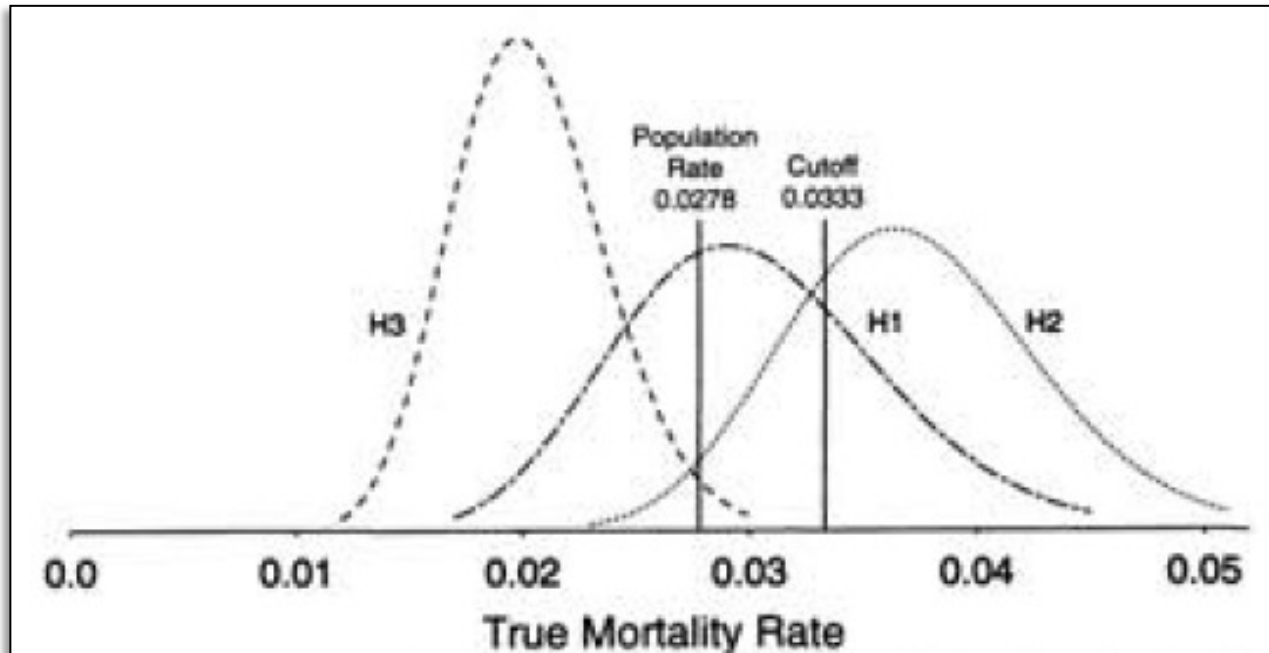
**SEARCH**



Includes a wide range of COVID-19 App  
...tive statistics.

**COVID-19 APP**

# Using Bayesian Assessments to Determine Performance Thresholds



**Figure 2.** True mortality rate probability graphs for three hospitals (H1, H2, H3) in New York State (1). Vertical lines indicate the population rate and the chosen standard; curves represent the probability densities that determine the chance that the mortality rate at each hospital exceeded the 3.33% standard.

Bayesian models allow us to estimate the probability distribution for the performance of a particular program, which can be compared to identified thresholds or national norms

Christiansen CL, Morris CN. *Ann Intern Med.* 1997;127:764.

# MPSC Screening Rules

A program will be reviewed for its waitlist mortality rate ratio if:

**The probability is >50% that the program's waitlist mortality rate ratio is >1.75.**

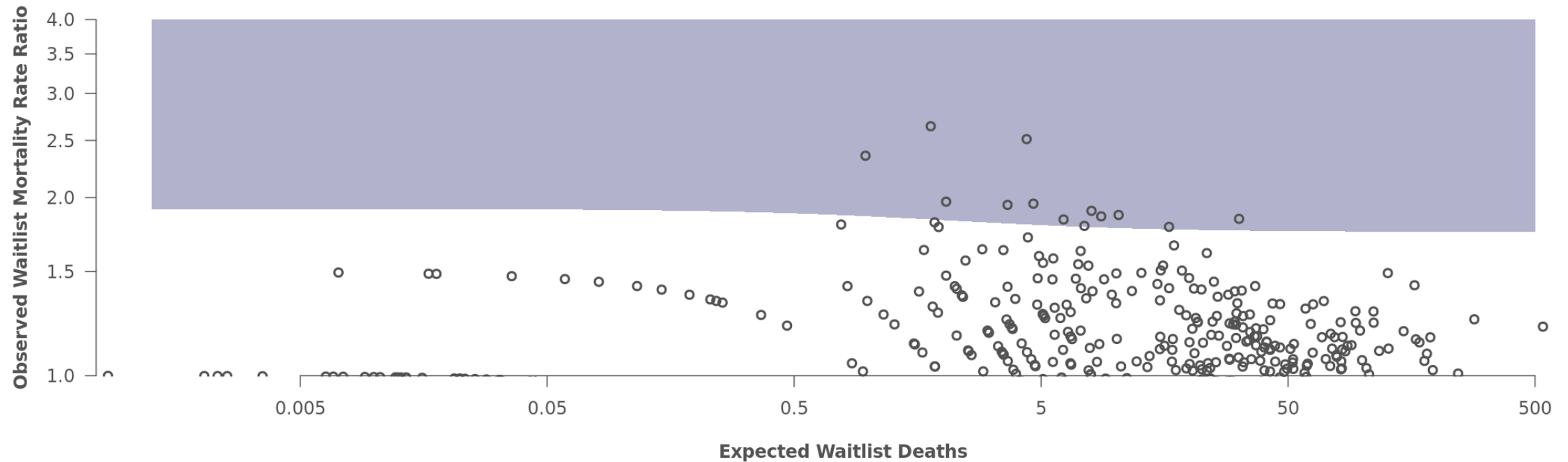
In other words, there is more than 50% probability that the program's mortality rate is at least 75% higher than expected.

# MPSC Screening Rules – Adult Evaluations

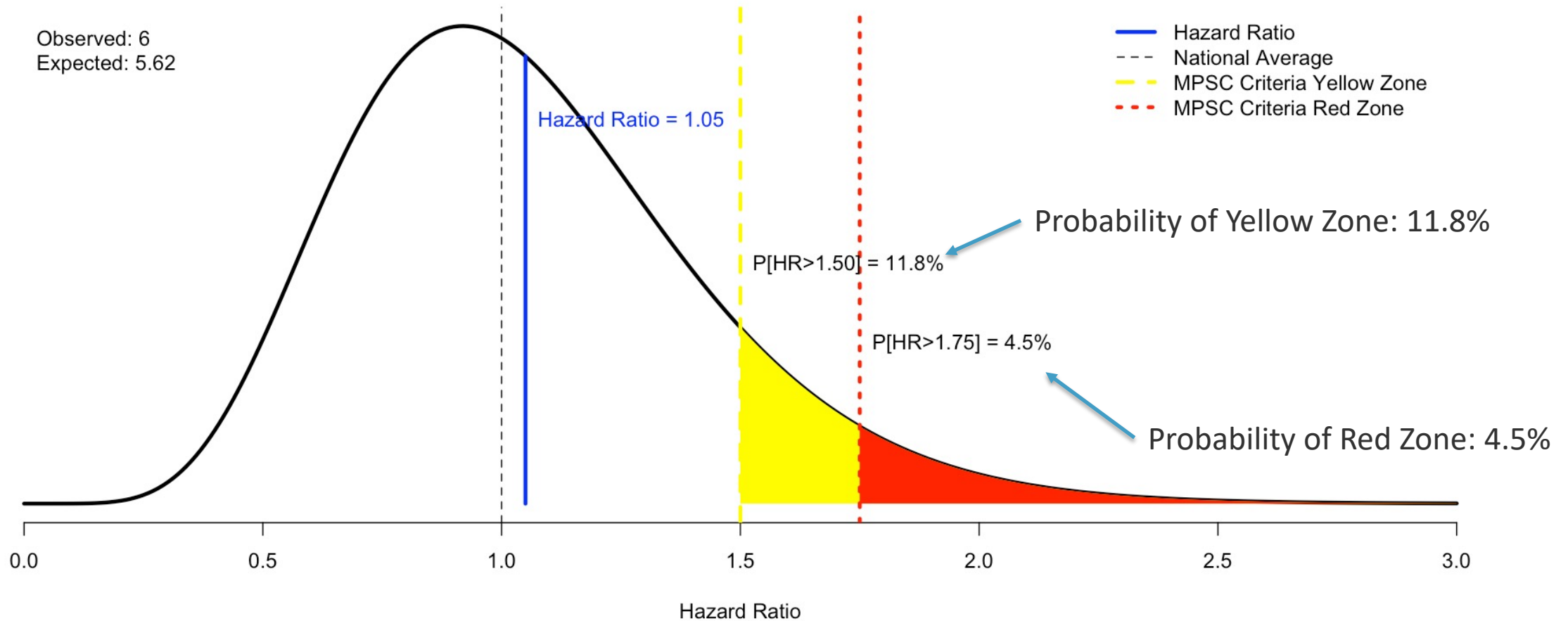
Performance Metric:	Red-Zone Boundary:	Probability of being above the Boundary:
Pretransplant Mortality Rate Ratio	>1.75	>50%
Offer Acceptance Rate Ratio	<0.30	>50%
90-Day Graft Failure Rate Ratio	>1.75	>50%
Conditional 1-year Graft Failure Rate Ratio	>1.75	>50%

# MPSC's Pretransplant Mortality Screening Rule Visualized

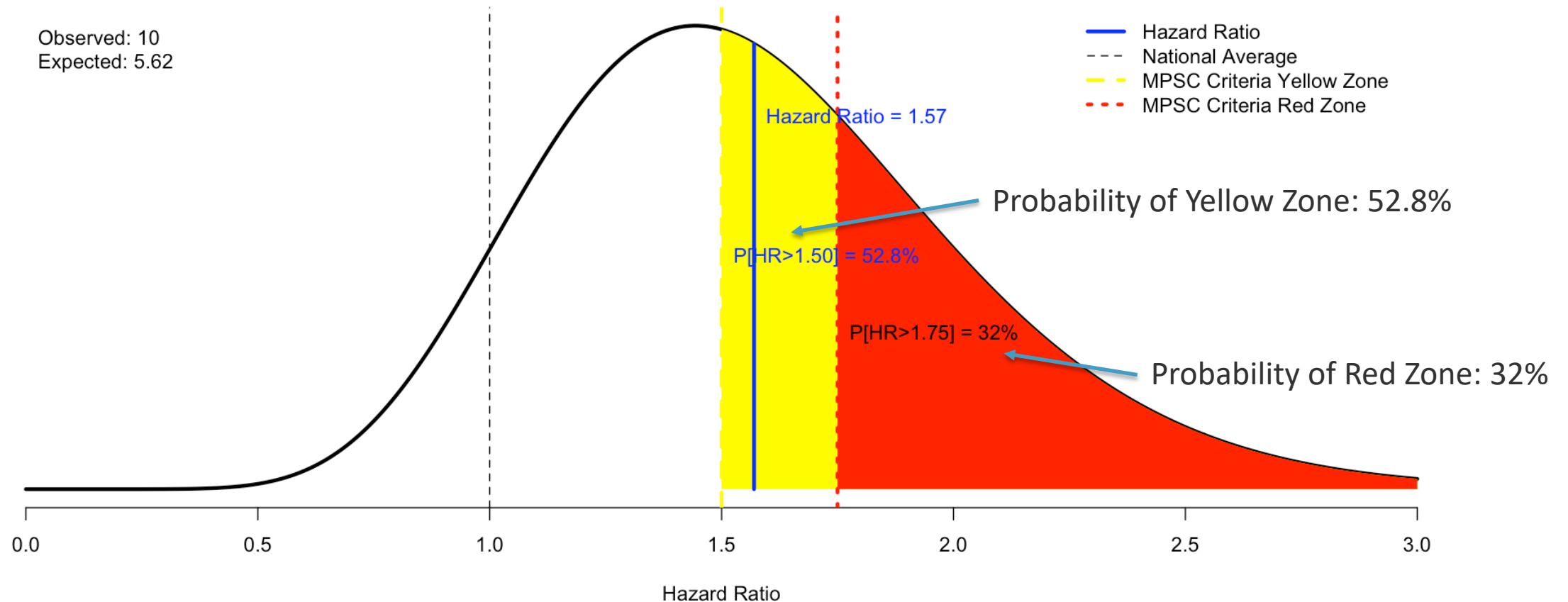
Adult Waitlist Mortality  
WMRR Criterion: 50% Prob. WMRR > 1.75



# Visualizing this program's MPSC Evaluation

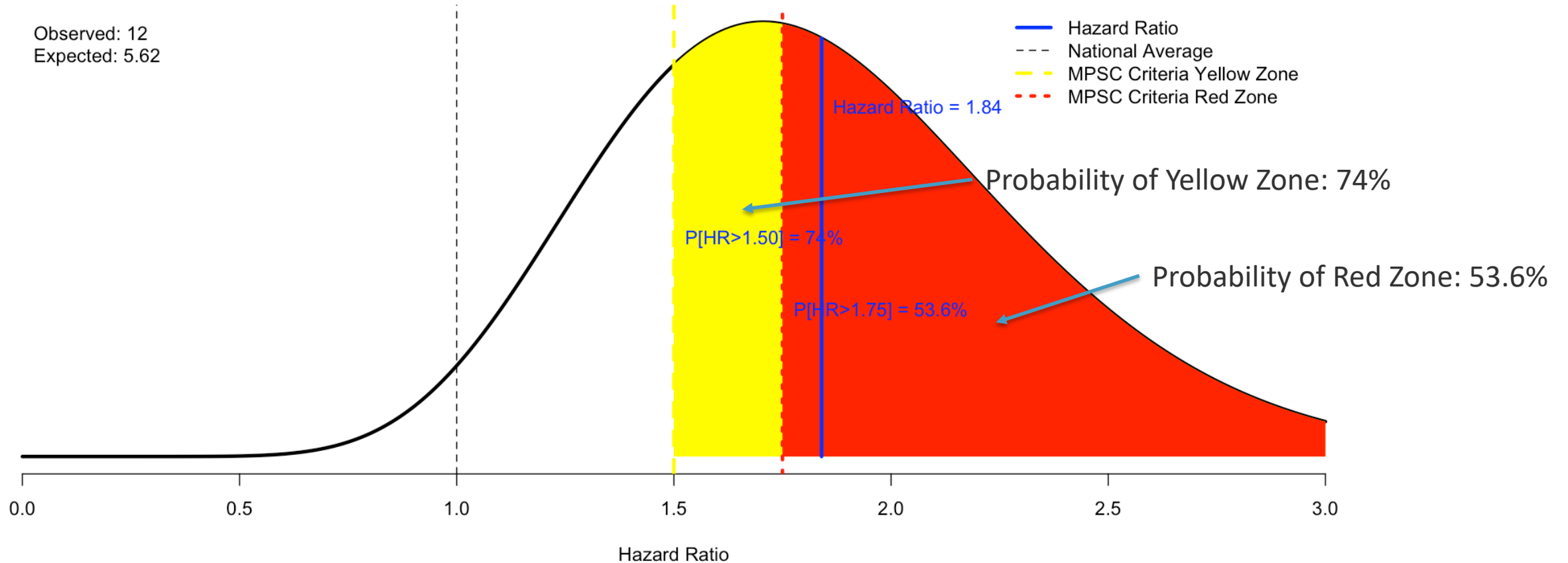


# What if the program experienced 4 More Deaths (10 total)?

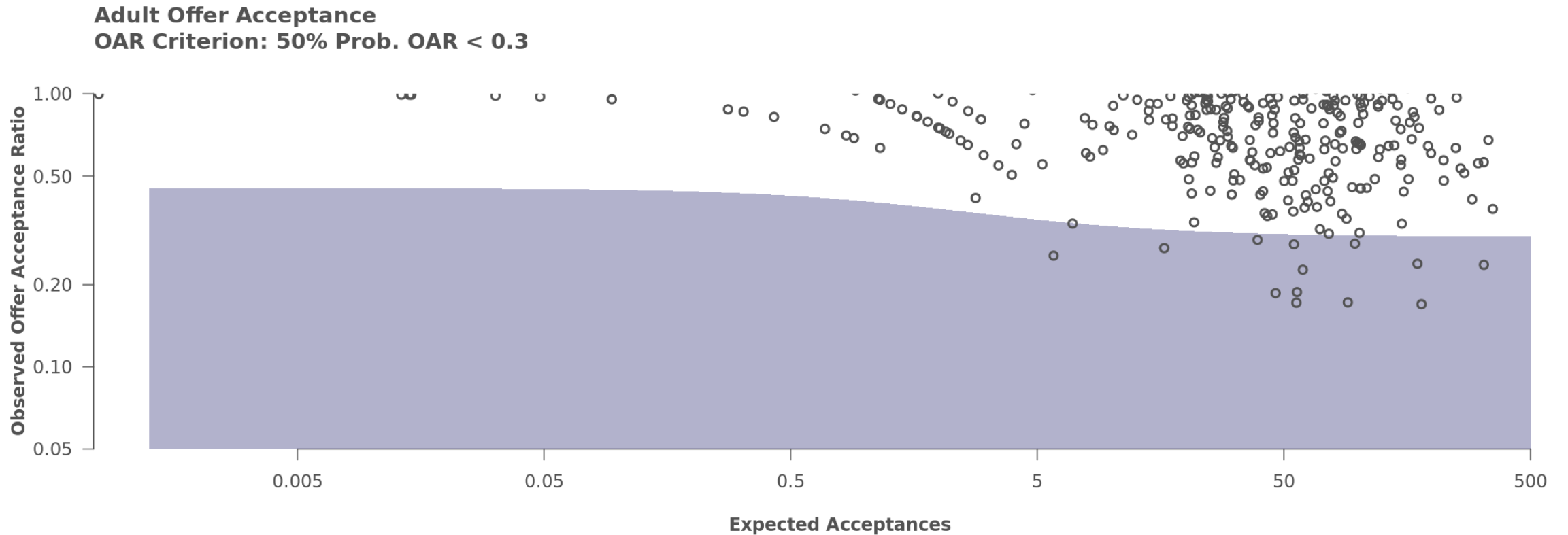




# What if the program experienced 6 More Deaths (12 total)?



# MPSC's Offer Acceptance Screening Rule Visualized





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**Thanks!**

**My email: [Jon.Snyder@cdrg.org](mailto:Jon.Snyder@cdrg.org)  
General SRTR Help: [SRTR@SRTR.org](mailto:SRTR@SRTR.org)**

**Jon Snyder, PhD**

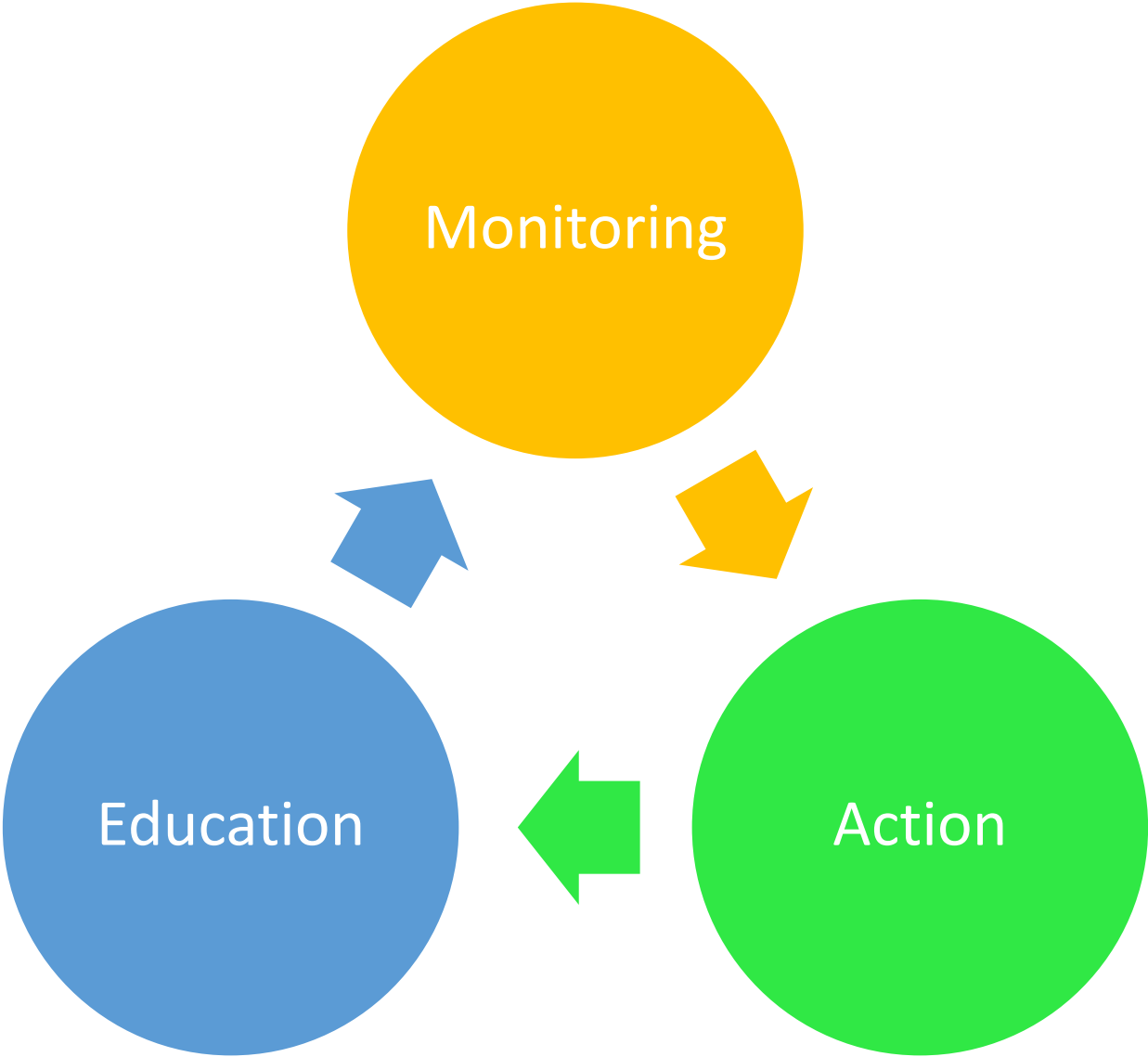
Director, Scientific Registry of Transplant Recipients  
Director, Transplant Epidemiology  
Chronic Disease Research Group  
Hennepin Healthcare Research Institute

February 28, 2023

# **Transform Your Transplant Center's Program Performance**

Lindsay Smith RN MSN  
Transplant Quality Director  
Vanderbilt University Medical Center





# Post- Transplant Outcomes

**EDUCATION:** Where does this data come from?

**YOU**

Your TIEDI Data TCR/TRR



How are you validating/ ensuring accuracy in your TIEDI forms?

# EDUCATION: Understand the components being reported

## Cheat Sheet

**Table C6D. Adult (18+) 90-Day survival with a functioning deceased donor graft**  
 Single organ transplants performed between 07/01/2019 and 03/12/2020, and 06/13/2020 and 12/31/2021  
 Deaths and retransplants are considered graft failures  
 Follow-up ends on 3/12/2020 for recipients transplanted prior to 3/13/2020

	TNVU	U.S.
Number of transplants evaluated	219	6,501
Estimated probability of surviving with a functioning graft at 90 days (unadjusted for patient and donor characteristics)	94.00%	94.57%
Expected probability of surviving with a functioning graft at 90 days (adjusted for patient and donor characteristics)	94.41%	--
Number of observed graft failures (including deaths) during the first 90 days after transplant	13	340
Number of expected graft failures (including deaths) during the first 90 days after transplant	11.59	--
Estimated hazard ratio*	1.10	--
95% credible interval for the hazard ratio**	[0.62, 1.73]	--

\* The hazard ratio provides an estimate of how Vanderbilt University Medical Center's results compare with what was expected based on modeling the transplant outcomes from all U.S. programs. A ratio above 1 indicates higher than expected graft failure rates (e.g., a hazard ratio of 1.5 would indicate 50% higher risk), and a ratio below 1 indicates lower than expected graft failure rates (e.g., a hazard ratio of 0.75 would indicate 25% lower risk). If TNVU's graft failure rate were precisely the expected rate, the estimated hazard ratio would be 1.0.  
 \*\* The 95% credible interval, [0.62, 1.73], indicates the location of TNVU's true hazard ratio with 95% probability. The best estimate is 10% higher risk of graft failure compared to an average program, but TNVU's performance could plausibly range from 38% reduced risk up to 73% increased risk.

### MPSC Post-transplant Review Criteria (not public)\* Transplants performed between 07/01/2019-03/12/2020 and 06/13/2020-12

	Adult (18+) Graft Survival	
	90-day Survival	1-year conditional on 90-day Survival
Number of transplants	219	188
Observed events	13	1
Expected events	11.589	5.991
Hazard Ratio (HR)	1.104	0.375
Probability HR > boundary**	0.022	0.000
Identified for review	No	No
Identified in Yellow-Zone	No	No

Identified for review		
Centers are identified for review if there is a greater than 50% probability of meeting any of the following criteria		
	Adult	Pediatric
90-day post transplant mortality hazard ratio exceeds:	1.75	1.6
1-year conditional on 90-day graft survival hazard ratio exceeds:	1.75	1.6
Pre-Transplant mortality hazard ratio exceeds:	1.75	1.6
Offer acceptance rate hazard ratio is lower than:	0.3	0.35

Identified for yellow-zone		
Centers are identified for the Yellow-zone if there is a greater than 50% probability of meeting any of the following criteria		
	Adult	Pediatric
90-day post transplant mortality hazard ratio exceeds:	1.5	1.35
1-year conditional on 90-day graft survival hazard ratio exceeds:	1.5	1.35
Pre-Transplant mortality hazard ratio exceeds:	1.5	1.5
Offer acceptance rate hazard ratio is lower than:	0.4	0.45



Teach this to someone else!



# EDUCATION: What tools are available?



Key to Success: Cracking the Expected calculation  
SECURE SRTR- Expected Survival Worksheets



Key to Success: Understanding Risk Adjustment  
SRTR.org (updated every 6 months)



How is risk adjustment utilized at your transplant center

Outcome	Predictor	Level	Coefficient
Patient	Recipient Age at Transplant	Missing	-0.453294934
Graft	Recipient Age at Transplant	Missing	-0.430908417
Graft	Donor Anti-HBC	Positive	-0.343480459
Graft	Donor Anti-HBC	Missing	-0.343480459
Graft	Donor Age (yr)	Apply to < 15 (Left LS)	-0.202269062
Graft	Donor Age (yr)	Missing	-0.202269062
Graft	Donor Meds: Vasodil	Yes	-0.191383153
Graft	Donor Meds: Vasodil	Missing	-0.191383153
Graft	Recipient Pulmonary Wedge Pressure (mean)	Missing	-0.143135764
Patient	Recipient Pulmonary Wedge Pressure (mean)	Missing	-0.114890695
Patient	Donor Cause of Death	Other	-0.109812421
Patient	Donor Cause of Death	Missing	-0.109812421
Graft	Recipient BMI	Apply to < 18 (Left LS)	-0.105866475
Patient	Candidate Prev Malignancy (Any)	Yes	0.109314029
Graft	Recipient Most Recent Total Bilirubin	Apply to > 1 (Right LS)	0.116978411
Patient	Donor to Recipient Weight Ratio	Apply to < 0.8 (Left LS)	0.121220885
Graft	Candidate Prev Malignancy (Any)	Yes	0.125274877
Patient	Donor transfusions (number) during current hospitalization	Greater Than Ten	0.125842029
Patient	Recipient Ventilator	Yes	0.131623001
Patient	Recipient LVAD	Yes	0.145075862
Graft	Donor transfusions (number) during current hospitalization	Greater Than Ten	0.165296989
Graft	Recipient Most Recent Total Bilirubin	Apply to > 1.4 (Right LS)	0.16748199
Graft	Recipient LVAD	Yes	0.182732298
Graft	Recipient Transfusions since Listing	Yes	0.189569574
Patient	Recipient Most Recent Total Bilirubin	Apply to > 1 (Right LS)	0.21936622
Patient	Recipient Transfusions since Listing	Yes	0.237441429
Graft	Recipient Most Recent Serum Creatinine	Apply to > 0.9 (Right LS)	0.258097007
Patient	Recipient Most Recent Serum Creatinine	Apply to > 0.9 (Right LS)	0.284143405
Graft	Donor History of Cancer	Yes	0.2917887
Graft	Donor Blood Type	AB	0.294137689
Patient	Donor History of Cancer	Yes	0.302508211
Graft	Recipient Dialysis since Listing	Yes	0.416008546
Patient	Recipient Primary Diagnosis	Congenital Heart Disease	0.439784296
Patient	Recipient Dialysis since Listing	Yes	0.477697974
Graft	Recipient Ventilator	Yes	0.490040629
Graft	Recipient Primary Diagnosis	Congenital Heart Disease	0.559071086
Graft	Recipient Previous Transplant	Yes	0.735568707
Patient	Donor to Recipient Height Ratio	Apply to > 1.02 (Right LS)	0.752597728
Graft	Donor to Recipient Height Ratio	Apply to > 1.02 (Right LS)	1.881498338
Patient	Donor to Recipient Height Ratio	Apply to > 1.04 (Right LS)	2.067462916
Graft	Recipient Most Recent Serum Creatinine	Apply to < 0.6 (Left LS)	-4.735292938
Patient	Recipient Most Recent Serum Creatinine	Apply to < 0.6 (Left LS)	-5.344645427

# MONITORING: Outcome Modeling 101

**Fact 1-** You know your transplant center:

- Transplant volume
- Deaths/ Graft Failures

**Fact 2-** You don't have to be a statistician to monitor your outcomes

**Fact 3-** Don't wait till your house is on fire to start monitoring your outcomes



# MONITORING:

- Benchmarks? What to measure?
  - MPSC Flagging Criteria?
  - Center of Excellence target?
  - National comparison?
- Find the right model for your center size, your resources etc.
- Frequency- How often are your outcomes reviewed and who is seeing them?

# MONITORING: Everyone has to start somewhere

### One Year and Three Year Outcomes

Year Period	No. of Patients	% Graft Survival	% Patient Survival	% Expected on SRTR Report
SRTR Report N/21	209	88.0%	95.0%	88.0%
SRTR Report N/22	209	88.0%	95.0%	88.0%
SRTR Report N/23	209	88.0%	95.0%	88.0%
SRTR Report N/24	209	88.0%	95.0%	88.0%
SRTR Report N/25	209	88.0%	95.0%	88.0%
SRTR Report N/26	209	88.0%	95.0%	88.0%
SRTR Report N/27	209	88.0%	95.0%	88.0%
SRTR Report N/28	209	88.0%	95.0%	88.0%
SRTR Report N/29	209	88.0%	95.0%	88.0%
SRTR Report N/30	209	88.0%	95.0%	88.0%
SRTR Report N/31	209	88.0%	95.0%	88.0%
SRTR Report N/32	209	88.0%	95.0%	88.0%
SRTR Report N/33	209	88.0%	95.0%	88.0%
SRTR Report N/34	209	88.0%	95.0%	88.0%
SRTR Report N/35	209	88.0%	95.0%	88.0%
SRTR Report N/36	209	88.0%	95.0%	88.0%
SRTR Report N/37	209	88.0%	95.0%	88.0%
SRTR Report N/38	209	88.0%	95.0%	88.0%
SRTR Report N/39	209	88.0%	95.0%	88.0%
SRTR Report N/40	209	88.0%	95.0%	88.0%
SRTR Report N/41	209	88.0%	95.0%	88.0%
SRTR Report N/42	209	88.0%	95.0%	88.0%
SRTR Report N/43	209	88.0%	95.0%	88.0%
SRTR Report N/44	209	88.0%	95.0%	88.0%
SRTR Report N/45	209	88.0%	95.0%	88.0%
SRTR Report N/46	209	88.0%	95.0%	88.0%
SRTR Report N/47	209	88.0%	95.0%	88.0%
SRTR Report N/48	209	88.0%	95.0%	88.0%
SRTR Report N/49	209	88.0%	95.0%	88.0%
SRTR Report N/50	209	88.0%	95.0%	88.0%

One Year Outcomes  
Data current as of 12/3/18

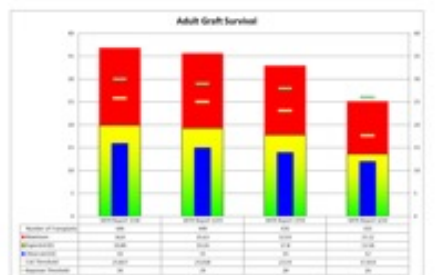
	SRTR Report N/21	SRTR Report N/22	SRTR Report N/23	SRTR Report N/24
<b>Adult Graft Survival</b>				
Number of Transplants	400	400	400	400
Observed (O)	86.42(21.6)	86.89(21.6)	86.78(21.6)	87.08(21.6)
Expected (E)	86.94(21.6)	86.74(21.6)	86.92(21.6)	86.92(21.6)
Maximum	88.8	88.8	88.8	88.8
GR Threshold	22.87	22.88	22.88	22.88
Baseline Threshold	30	30	30	30
O - E	-0.52	-0.29	-0.20	0.16
O/E	0.98	0.98	0.98	0.98
<b>Adult Patient Survival</b>				
Number of Transplants	370	367	360	377
Observed (O)	97.02(7.5)	97.02(7.5)	97.02(7.5)	97.02(7.5)
Expected (E)	97.79(7.5)	97.89(7.5)	97.89(7.5)	97.89(7.5)
Maximum	10.0	10.0	10.0	10.0
GR Threshold	10.00	10.74	10.00	10.00
Baseline Threshold	10	10	10	10
O - E	-0.77	-0.77	-0.77	-0.77
O/E	0.98	0.98	0.98	0.98

SRTR Public Release Date	Combined Graft Survival by Time Since Transplant			VUMC (Expected)		
	1 Month	1 Year	3 Years	1 Month	1 Year	3 Years
January 2013 (N=360,320)	98.61%	95.05%	85.94%	98.27%	95.09%	88.29%
July 2013 (N=381,127)	98.19%	95.54%	87.46%	98.26%	95.27%	88.54%
January 2014(N=406,324)	98.50%	97.12%	88.58%	98.53%	95.49%	87.87%
July 2014 (N=412,191)	98.79%	96.67%	89.73%	98.67%	96.79%	87.75%

SRTR Public Release Date	Combined Patient Survival by Time Since Transplant			VUMC (Expected)		
	1 Month	1 Year	3 Years	1 Month	1 Year	3 Years
January 2013 (N=316,275)	100.00%	99.10%	93.82%	99.45%	97.32%	93.71%
July 2013 (N=334,382)	100.00%	99.20%	94.08%	99.51%	97.56%	93.69%
January 2014(N=344,280)	100.00%	99.77%	95.36%	99.54%	97.74%	93.29%
July 2014 (N=358,281)	100.00%	99.26%	95.77%	99.57%	97.82%	93.67%

One Year Graft Survival



### Building Transplant Database Report

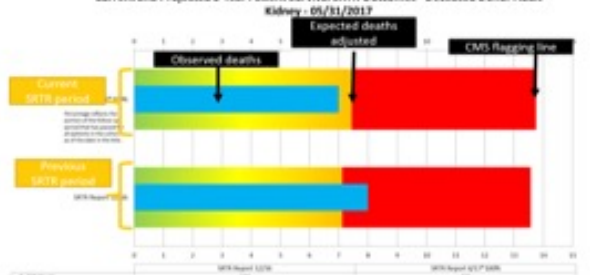
Year Period	No. of Patients	% Graft Survival	% Patient Survival	% Expected on SRTR Report
SRTR Report N/21	209	88.0%	95.0%	88.0%
SRTR Report N/22	209	88.0%	95.0%	88.0%
SRTR Report N/23	209	88.0%	95.0%	88.0%
SRTR Report N/24	209	88.0%	95.0%	88.0%
SRTR Report N/25	209	88.0%	95.0%	88.0%
SRTR Report N/26	209	88.0%	95.0%	88.0%
SRTR Report N/27	209	88.0%	95.0%	88.0%
SRTR Report N/28	209	88.0%	95.0%	88.0%
SRTR Report N/29	209	88.0%	95.0%	88.0%
SRTR Report N/30	209	88.0%	95.0%	88.0%
SRTR Report N/31	209	88.0%	95.0%	88.0%
SRTR Report N/32	209	88.0%	95.0%	88.0%
SRTR Report N/33	209	88.0%	95.0%	88.0%
SRTR Report N/34	209	88.0%	95.0%	88.0%
SRTR Report N/35	209	88.0%	95.0%	88.0%
SRTR Report N/36	209	88.0%	95.0%	88.0%
SRTR Report N/37	209	88.0%	95.0%	88.0%
SRTR Report N/38	209	88.0%	95.0%	88.0%
SRTR Report N/39	209	88.0%	95.0%	88.0%
SRTR Report N/40	209	88.0%	95.0%	88.0%
SRTR Report N/41	209	88.0%	95.0%	88.0%
SRTR Report N/42	209	88.0%	95.0%	88.0%
SRTR Report N/43	209	88.0%	95.0%	88.0%
SRTR Report N/44	209	88.0%	95.0%	88.0%
SRTR Report N/45	209	88.0%	95.0%	88.0%
SRTR Report N/46	209	88.0%	95.0%	88.0%
SRTR Report N/47	209	88.0%	95.0%	88.0%
SRTR Report N/48	209	88.0%	95.0%	88.0%
SRTR Report N/49	209	88.0%	95.0%	88.0%
SRTR Report N/50	209	88.0%	95.0%	88.0%

Kidney Adult Graft Survival



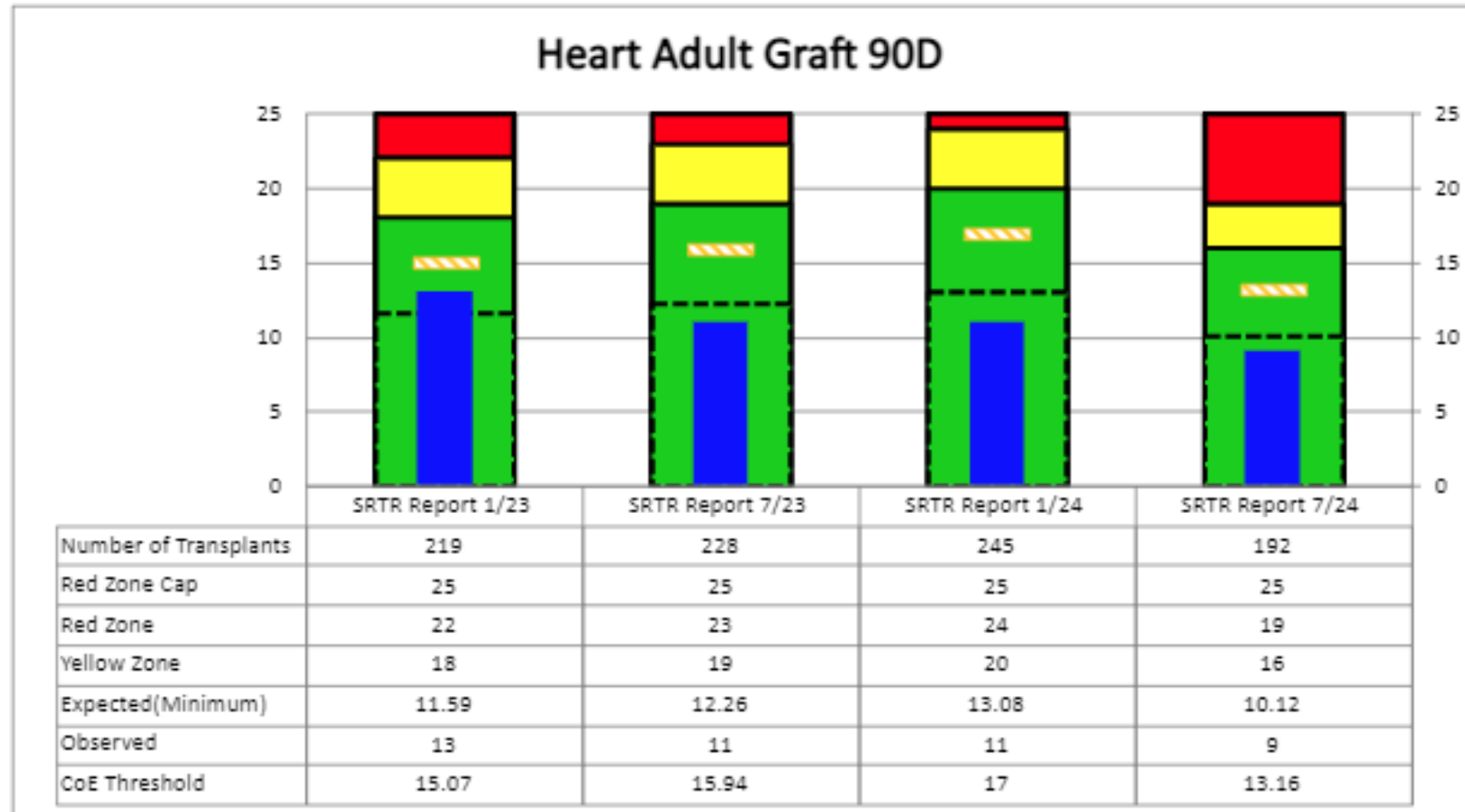
One Year Outcomes  
Data current as of 12/3/18

	SRTR Report N/21	SRTR Report N/22	SRTR Report N/23	SRTR Report N/24
<b>Adult Graft Survival</b>				
Number of Transplants	400	400	400	400
Observed (O)	86.42(21.6)	86.89(21.6)	86.78(21.6)	87.08(21.6)
Expected (E)	86.94(21.6)	86.74(21.6)	86.92(21.6)	86.92(21.6)
Maximum	88.8	88.8	88.8	88.8
GR Threshold	22.87	22.88	22.88	22.88
Baseline Threshold	30	30	30	30
O - E	-0.52	-0.29	-0.20	0.16
O/E	0.98	0.98	0.98	0.98
<b>Adult Patient Survival</b>				
Number of Transplants	370	367	360	377
Observed (O)	97.02(7.5)	97.02(7.5)	97.02(7.5)	97.02(7.5)
Expected (E)	97.79(7.5)	97.89(7.5)	97.89(7.5)	97.89(7.5)
Maximum	10.0	10.0	10.0	10.0
GR Threshold	10.00	10.74	10.00	10.00
Baseline Threshold	10	10	10	10
O - E	-0.77	-0.77	-0.77	-0.77
O/E	0.98	0.98	0.98	0.98

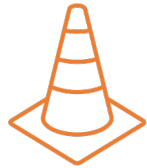


You have 3 seconds... what are your outcomes?

# MONITORING:



# ACTION:



**Cone of caution!** When you forecast you can see trouble on the horizon



A proactive approach is always preferred



Do a formal review as a transplant center:

- Review all deaths & graft failures (MPSC tool)
- Develop an honest **ROBUST** corrective action plan:
  - Look at programmatic issues
  - Quality Review Process
  - Policies and Protocols

Mortality/Graft Failure Synopsis

Name	Transplant Date
MRN	Organ(s)
DOB	Graft #
Primary Surgeon	Death Date
Primary Physician	Graft Failure Date

PRE-TRANSPLANT

WAITLIST HISTORY

# Organ Offer Acceptance Metric

# EDUCATION: Where does this data come from?

# YOU

## On every patient that is listed

### Infectious Diseases

Accept a Hepatitis B Core antibody positive donor?	Yes
Accept an HBV NAT positive donor?	No
Accept an HCV antibody positive donor?	Yes
Accept an HCV NAT positive donor?	Yes

### Recovery

Maximum acceptable warm ischemic time:	60 minutes
Maximum acceptable cold ischemic time:	24 hours



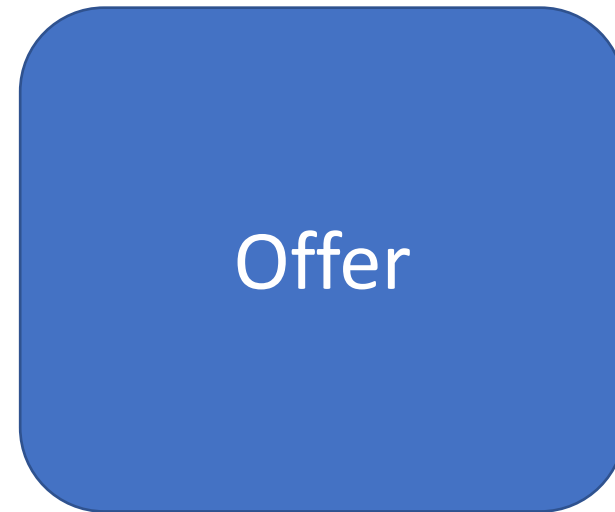
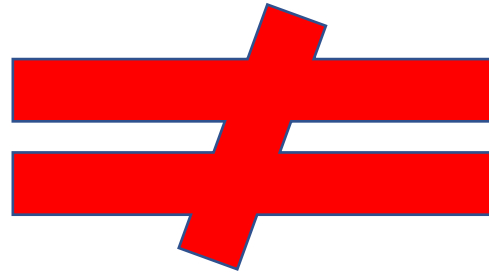
Do you know what your standard listing criteria is? When was the last time this was reviewed?



# EDUCATION: Let's really break down an "offer"



A declined organ is not accepting 1 organ

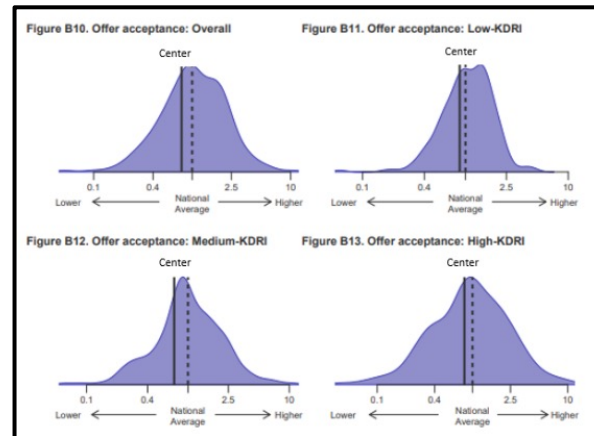


A declined offer is EACH candidate on your list that you declined an organ for...large list...potential for a lot of declined OFFERS



# EDUCATION: Understand the components being reported

MPSC Pre-Transplant Review Criteria (not public)* Offer acceptance between 07/01/2021 and 06/30/2022	
	Adult (18+) Offer Acceptance
Number***	32,452
Observed events	193
Expected events	242.400
Hazard Ratio (HR)	0.798
Probability HR > boundary**	0.000
Identified for review	No
Identified in Yellow-Zone	No



## Cheat Sheet

Identified for yellow-zone		
Centers are identified for the Yellow-zone if there is a greater than 50% probability of meeting any of the following criteria		
	Adult	Pediatric
90-day post transplant mortality hazard ratio exceeds:	1.5	1.35
1-year conditional on 90-day graft survival hazard ratio exceeds:	1.5	1.35
Pre-Transplant mortality hazard ratio exceeds:	1.5	1.5
Offer acceptance rate hazard ratio is lower than:	0.4	0.45

Identified for review		
Centers are identified for review if there is a greater than 50% probability of meeting any of the following criteria		
	Adult	Pediatric
90-day post transplant mortality hazard ratio exceeds:	1.75	1.6
1-year conditional on 90-day graft survival hazard ratio exceeds:	1.75	1.6
Pre-Transplant mortality hazard ratio exceeds:	1.75	1.6
Offer acceptance rate hazard ratio is lower than:	0.3	0.35

# EDUCATION: What tools are available?



Key to Success: Let SRTR do the work for you!  
SECURE SRTR- Offer Acceptance Table



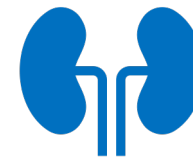
Key to Success: CARE about the CARES TOOL  
UNOS VISUAL ANALYTICS- Center acceptance & refusal evaluation tool

- Access unique data like TRR & TRF data on organs your center did not transplant
- Basically, everything you need to know at your fingertips



Key to Success: Get creative with your offer capability  
OPTN Visual Analytics- Offer Filter Explorer

- Kidney only at this time (fingers crossed for expansion)
- Create combo filters to drill down on what you really want
- Provide recommendations based on your center's behavior



# MONITORING: Don't overcomplicate it

- SRTR Secure site releases a monthly offer acceptance table
- We monitor the changes we see month to month

October 2022 Monthly CUSUM:  
Offers from 1/30/22 – 6/1/22

Donor Characteristics	History of Acceptance	Number of Offers	Number of Acceptances	Expected Acceptances	Offer Acceptance Ratio	Since 9/1:
Overall	Somewhat Below Average	6974	61	71.44	0.86	+0.02
Low-KDRI	Average	896	26	23.96	1.08	+0.07
Medium-KDRI	Somewhat Below Average	5064	31	43.40	0.73	-0.01
High-KDRI	Average	1014	4	4.09	0.99	-0.06
DCD Donor	Somewhat Below Average	3409	12	19.53	0.65	+0.06
PHS Increased Infectious Risk	Below Average	1829	15	25.26	0.62	-0.05
HCV+	Somewhat Below Average	1540	17	24.35	0.72	-0.08
Weekend	Average	2589	25	26.09	0.96	+0.02

# MONITORING: How do we compare?

SRTR program specific data provides a great visual to see where your program is at compared to the national rate

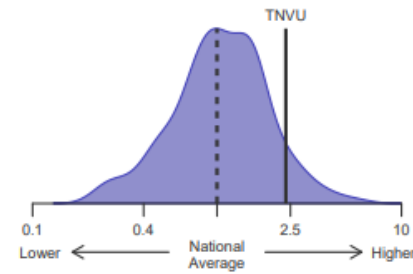


Figure B12. Offer acceptance: Ejection fraction < 60

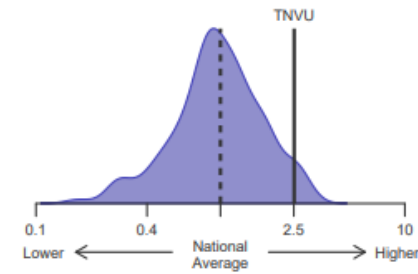


Figure B13. Offer acceptance: Donor age >= 40

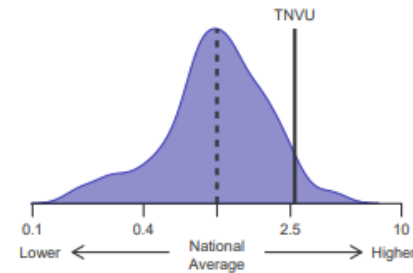


Figure B14. Offer acceptance: Offer number > 50

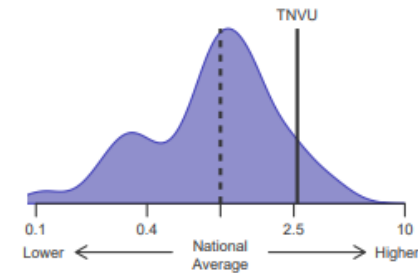


Figure B15. Offer acceptance: Donor more than 500 miles away

# ACTION:

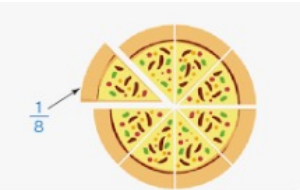


**Identity Crisis:** Who are we as a center? Does our data reflect our perception?



**Review the data:**

- Utilize CARE tool for opportunities to tighten criteria
- Review standard listing criteria
- Decline conference for transparency/ reviewing practice



**Secret of the Denominator:**

- Quick check- how large is your denominator? Large= your criteria is wide open!

# ACTION: Look for opportunities



Any area your transplant center wants to increase organ offers?

- DCD
- KDPI
- HCV



Consider hot lists- who are good candidates for certain organs?

# Introducing The Alliance's **NEW!**



## QUALITY CORNER

RELEVANT QUALITY-FOCUSED TOPICS IN TRANSPLANTATION

A PUBLICATION FROM  
THE ALLIANCE INSIGHT  
SERIES FOR DONATION  
AND TRANSPLANT  
PROFESSIONALS

The Alliance's Quality Corner will highlight a series of transplant quality-focused insights, tools, and resources that transplant centers can leverage to improve their practices and outcomes.



### Topics of Focus Include:

**Organ Offer Acceptance Rate Ratios: The New MPSC Metric**

**Launch Date:** February 2023



**Additional Topic Recommendations Welcomed**



# Pre-transplant Mortality

\*formerly know as waitlist mortality



Disclaimer:  
We are all working  
on this!

# EDUCATION:



## Key to Success: Knowledge is Power

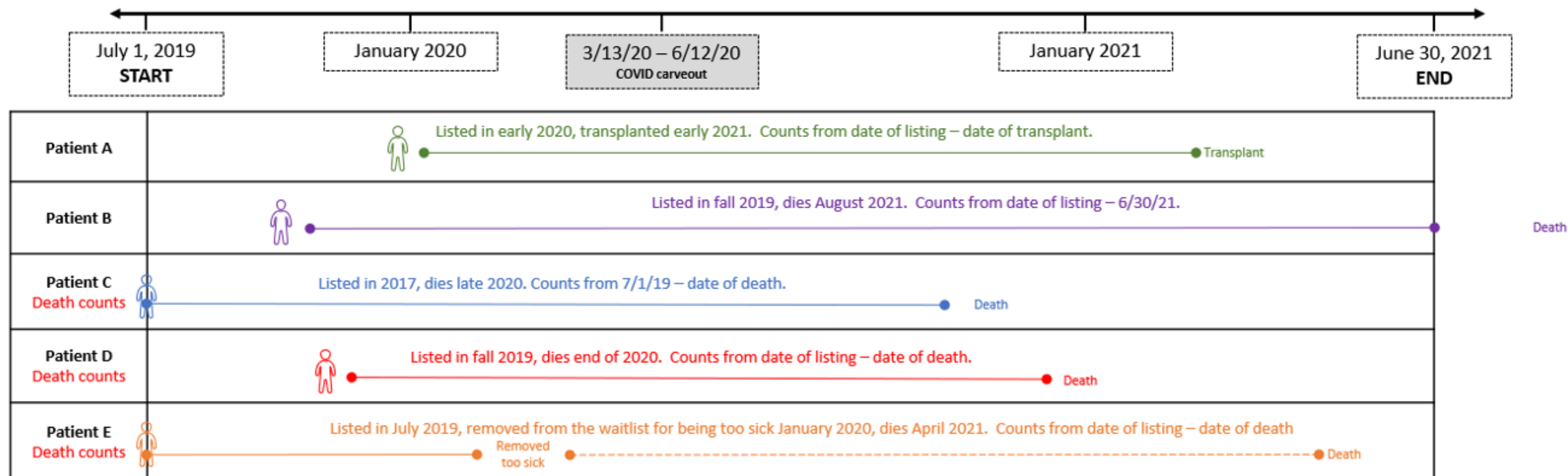
1. Where does this data come from?  
A- You, the answer is always YOU
2. Is this Risk Adjusted?  
A- Yes, the answer is always YES
3. How is this metric defined?  
A- Now that is the key question...



How can I teach this to the rest of my transplant center?

Element	Level	Coefficient
Candidate most recent serum creatinine	Apply to < 2 (Left LS)	-0.288413
Candidate dialysis	None	-0.176071
Candidate race: White	No	-0.109321
Candidate most recent serum creatinine	Apply to < 0.8 (Left LS)	0.146173
Candidate primary insurance	Medicare	0.245482
On the kidney waiting list	Yes	0.273314
Prior lung transplant	Yes	0.320379
Candidate primary diagnosis	Valvular heart disease	0.360072
Prior heart transplant	Yes	0.55818
Candidate on life support (TCR)	Yes	0.569154
Prior kidney transplant	Yes	0.779424
Candidate on ventilator (TCR)	Yes	0.891748
Candidate on ECMO	Yes	1.022698

# EDUCATION: Wait what has changed??



Created by our very own amazing moderator: Jenna Lawson

# MONITORING: Use what you got

## MPSC Pre-Transplant Review Criteria (not public)\*

Pre-transplant mortality between 07/01/2020-03/12/2020 and 06/13/2021

Offer acceptance between 07/01/2021 and 06/30/2022

	Adult (18+)	
	Pre-Transplant Mortality	Offer Acceptance
Number***	36	817
Observed events	11	105
Expected events	10.769	40.600
Hazard Ratio (HR)	1.018	2.512
Probability HR > boundary**	0.013	0.000
Identified for review	No	No
Identified in Yellow-Zone	No	No

\* This information is provided for your center's review only and will not appear on the public website. The information listed here is that used by the Membership and Professional Society (MPSC) to identify centers for review based on greater than 50% probability of meeting an offer acceptance criterion. (1) The center pre-transplant mortality rate ratio (HR) exceeds 1.75 - THIS CRITERION WILL BE CONSIDERED BY THE MPSC UNTIL 2024

(2) The center offer acceptance rate ratio is lower than 0.3 for adults or 0.35 for pediatrics NOT BE CONSIDERED BY THE MPSC UNTIL 2023

(3) The center 90-day post transplant graft survival hazard ratio exceeds 1.75 for adults or 1.75 for pediatrics (4) The center 1-year conditional on 90-day post transplant graft survival hazard ratio exceeds 1.75 for adults or 1.75 for pediatrics

\*\* For offer-acceptance outcomes this is the probability the HR < boundary

\*\*\* For pre-transplant mortality this is the number of patients on the waitlist at the start of the time period, this is the number of offers made during the time period.

Figure B4. Observed and expected pre-transplant mortality rates: 07/01/2020 - 06/30/2022

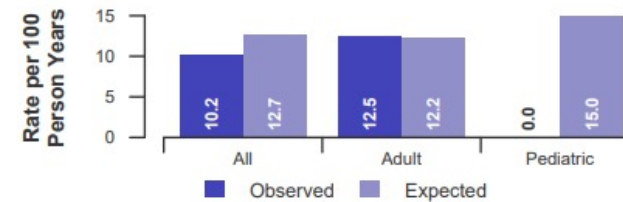


Figure B5. Pre-transplant mortality rate ratio estimate

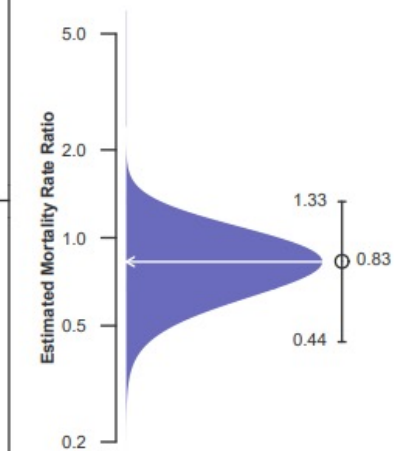
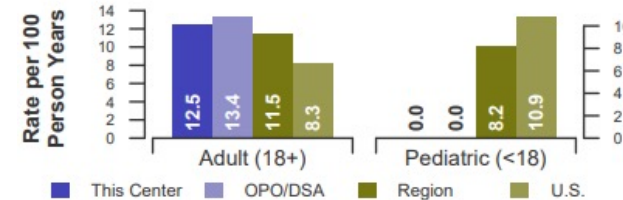


Figure B6. Observed adult (18+) and pediatric (<18) pre-transplant mortality rates: 07/01/2020 - 06/30/2022



# MONITORING: New challenges for modeling



Forecasting is hard due to the unknowns



How many people are we going to add to the list?

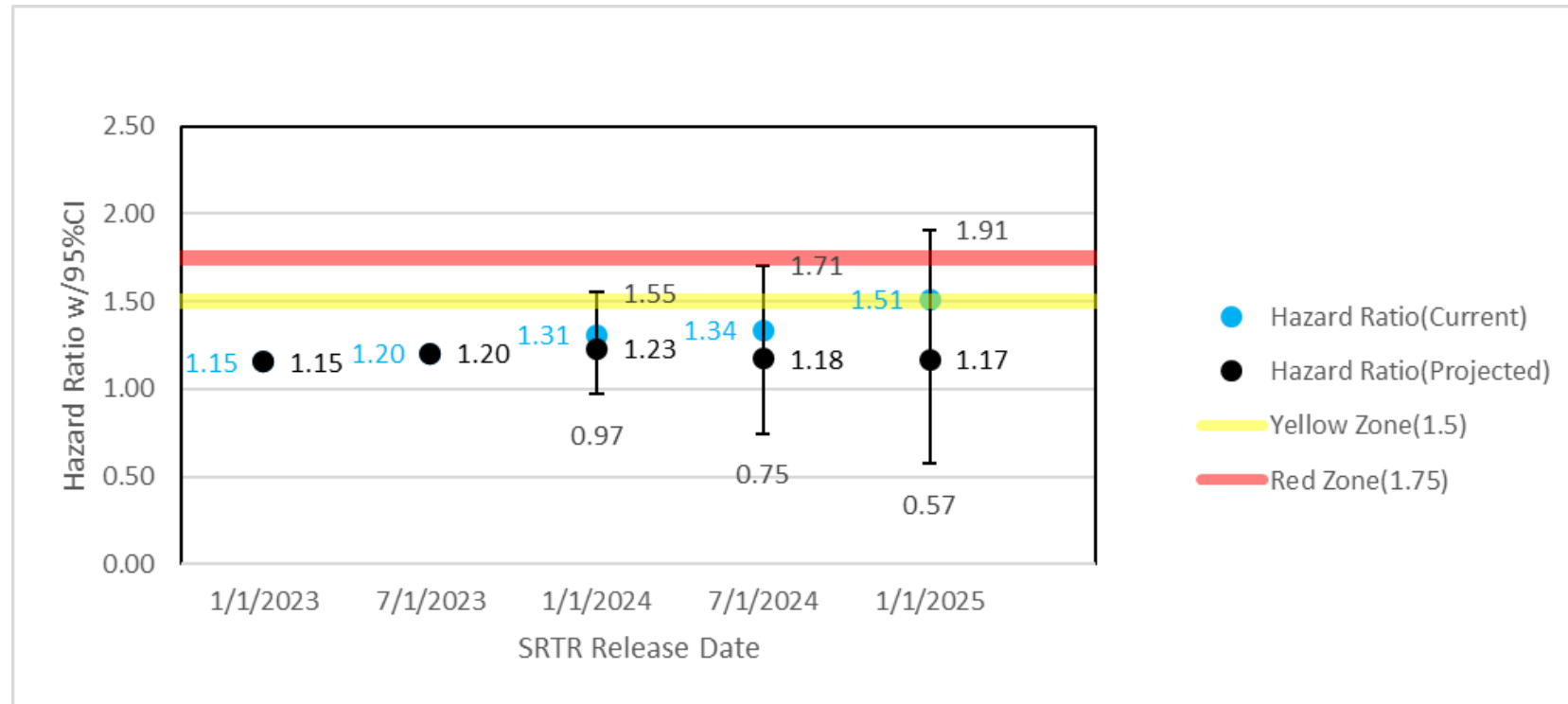


How many people are going die within the cohort time period?



How are we going to know when these patients die?

# MONITORING: Sneak Peek



Rolling mortality rates, confidence intervals and average listings rates OH MY!

# ACTION: Waitlist management



When was the last time you really looked at your waitlist? I bet you will find surprising data



Different organs and different programs will have very different issues to consider:

- Are we listing people TOO early?
- Are we listing appropriate candidates?
- How often are we reviewing our list?
  - What is our practice of removing from the list?
    - Over our age criteria?
    - Developed comorbidities?
    - Too well for transplant?



A great starting point: Review or create policies and protocols to drive your practice



# Countdown to Success






Make it EASY-  
K.I.S.S



2

A close-up, top-down view of the hull of a wooden boat, showing the curved planks and a central keel. The boat is on dark, rippling water. A dark circular callout with a thin gold border is positioned on the left side of the image, containing the text "We are in this ship together".

We are in this  
ship together

Review Often and Be Transparent





Look For  
Opportunities  
to Improve

Special Thank You  
to the entire transplant quality  
team at Vanderbilt.



# A Special Thanks to Our Presenters



**Jon Snyder**

PHD, MS

Director, SRTR; Director, Transplant  
Epidemiology, Hennepin Healthcare  
Research Institute



**Lindsay Smith**

RN, MSN

Transplant Quality Director



# Q & A

QUESTIONS & ANSWERS