Proposal to Revise the Current Method for Flagging for Transplant Program Post-transplant Performance Reviews

Membership and Professional Standards Committee
Carl Berg, MD, Chair
June 23-24, 2014

OPTN

UNOS DONATE LIFE
UNITED NETWORK FOR ORGAN SHARING

Background

- Current flagging method
  - Identifies too many low volume programs
  - Fails to identify many medium volume programs
- Movement to Bayesian methodology

Goal of the Proposal

- Increase the probability that underperforming programs are identified
- Decrease the probability that average programs are identified by mistake

How the Proposal will Achieve its Goal

- Use of Bayesian methodology by SRTR
- New thresholds for flagging programs that perform>9 transplants in 2.5 years
  - P[HR>1.2]>75%, or
  - P[HR>2.5]>10%
- Small volume <10 transplants – 1 event within 2.5 year cohort

Strategic Plan

- *Goal:* Improve survival for patients post-transplant
- *Objective:* Promote best use of donated organs

Supporting Evidence

- Bayesian methodology supported by
  - Committee of Presidents of Statistical Societies (COPSS)
  - Consensus Conference on Transplant Program Quality and Surveillance
  - SRTR Technical Advisory Committee

Determining best algorithm

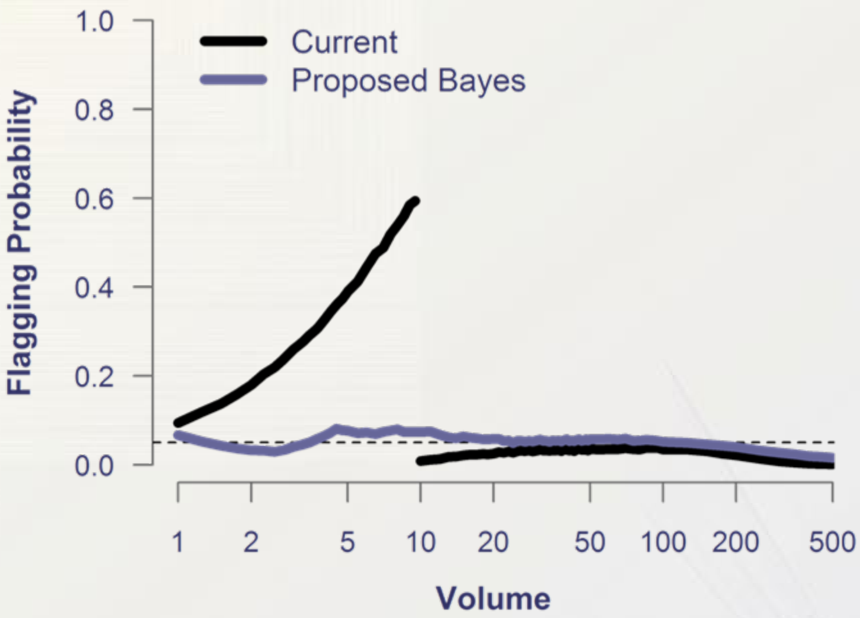
- SRTR calculated flagging rates for close to 60,000 possible Bayesian flagging algorithms
- Simulated data was utilized
- Underperforming programs were created
- Algorithms were tested to determine most effective at identifying predetermined true positives

Results of Simulated Data Analysis

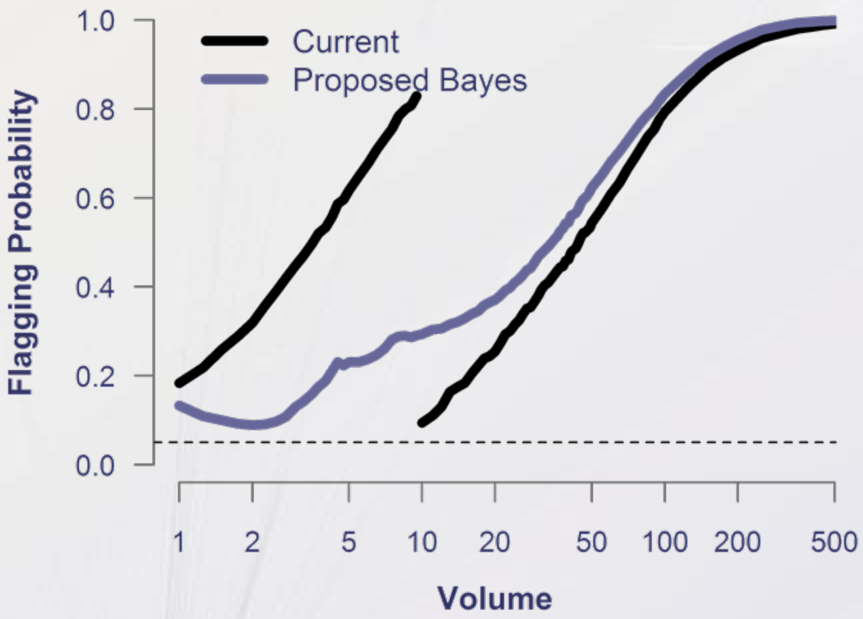
Rank	Hazard Ratio 1	Probability 1	Hazard Ratio 2	Probability 2	Score
1	1.20	0.75	2.50	0.10	283.0
2	1.20	0.75	2.25	0.15	283.1
3	1.20	0.75	2.90	0.05	283.3
4	1.25	0.70	2.50	0.10	283.4
5	1.20	0.75	2.45	0.10	283.6
2,163	1.25	0.75	2.50	0.10	303.4
6,912	Alternative Flag Algorithm				329.5
11,987	Current Flag Algorithm				354.9

Comparison of True and False Positive Rates between the Current and Bayesian Algorithms

Simulated False Positive Rate



Simulated True Positive Rate



Current vs. Proposed Model & Thresholds

Volume	Programs	Transplants	Current	Optimal Bayesian
[1,10)	223	799	54	15
[10,50)	270	7,519	22	44
[50,100)	126	9,139	11	19
[100,250)	147	23,694	11	15
[250,744]	61	23,977	4	4
Total	827	65,128	102	97

Bayesian flagging algorithms should…

- Have fewer false positive flags for small volume programs
- Have more true positive flags for medium to larger volume programs

Request for Inactivation/Withdrawal Language

- Codifies current practice of MPSC—transparency
- Rarely used – patient safety implications
- Generally inactivation while improvements implemented

Impact on Members

- Flagging methodology is screening mechanism to identify programs that merit further inquiry
- No change to data reported by program or used by SRTR
- No change to process of review by MPSC

Public Comment

Type of Response	Response Total	In Favor	In Favor as Amended	Opposed	No Vote/ No Comment/ Did Not Consider
Individual	42	33 (78.6%)	0 (0%)	9 (21.4%)	8
Regional	11	8 (72.7%)	0 (0%)	3 (27.3%)	0
Committee	18	7 (87.5%)	0 (0%)	1 (12.5%)	10

Public Comment

- Too many programs identified & false positive rate of 5% too high
- Continued monitoring & evaluation of thresholds
- Use of pre-transplant metrics & QAPI requirements
- Availability of flagging information to public and other entities

Resolution 17

RESOLVED, that Bylaws Appendix D. (Membership Requirements for Transplant Hospitals and Transplant Programs), Section D.10 A. and Appendix M. (Definitions) are modified as set in Resolution 17, effective January 1, 2015.

*Page 82 of Board book

Additional Slides

New Simulations

The SRTR simulated data:

- Simulated graft failures for all Heart, Kidney, Liver, and Lung programs with expected 1-year adult graft failures in the July 2012 PSR cohort, assuming that each program was performing as expected 2,500 times.

- Simulated graft failures for the same programs, assuming that their graft failure rates were 2 times their expected rates 2,500 times.

The SRTR then calculated the flagging rates for 57,915 possible Bayesian flagging algorithms, then calculated the **score** for **each algorithm!**