

Donor potential if all organ procurement organizations (OPOs) in the US were performing as expected or better

Ajay Israni, M.D, M.S.
Deputy Director, SRTR

Associate Professor of Medicine, Hennepin County Medical Center,
Faculty, Epidemiology & Community Health,
University of Minnesota

July 30, 2014





Ajay Israni, M.D., M.S.

Deputy Director, Scientific Registry of Transplant Recipients

**Associate Professor of Medicine,
Hennepin County Medical Center
University of Minnesota**

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.

AND

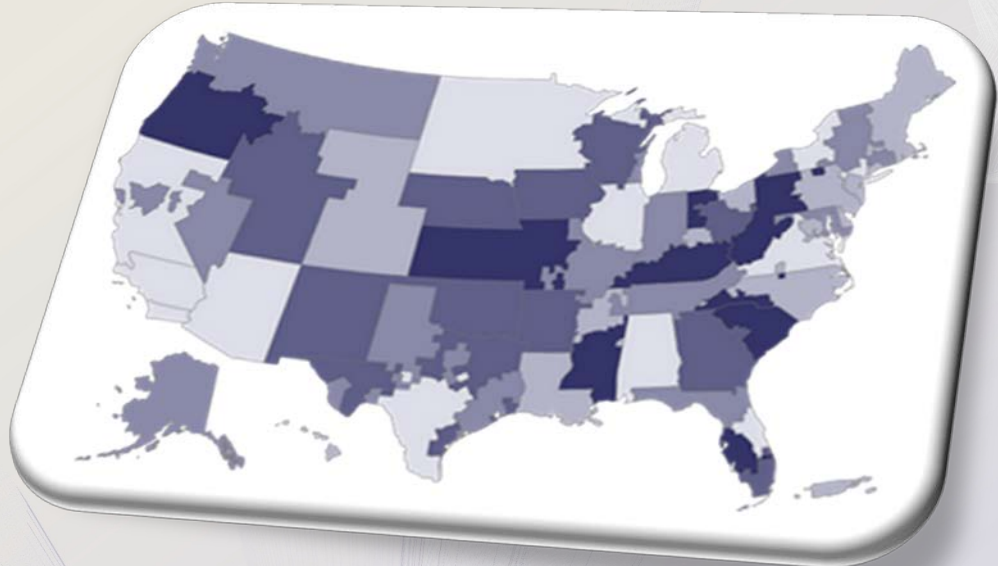
My presentation does not include discussion of off-label or investigational use.

I do not intend to reference unlabeled/unapproved uses of drugs or products in my presentation.

This work was supported wholly or in part by HRSA contract 250201000018C. The content is the responsibility of the authors alone and does not necessarily reflect the views or policies of the Department of HHS, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.

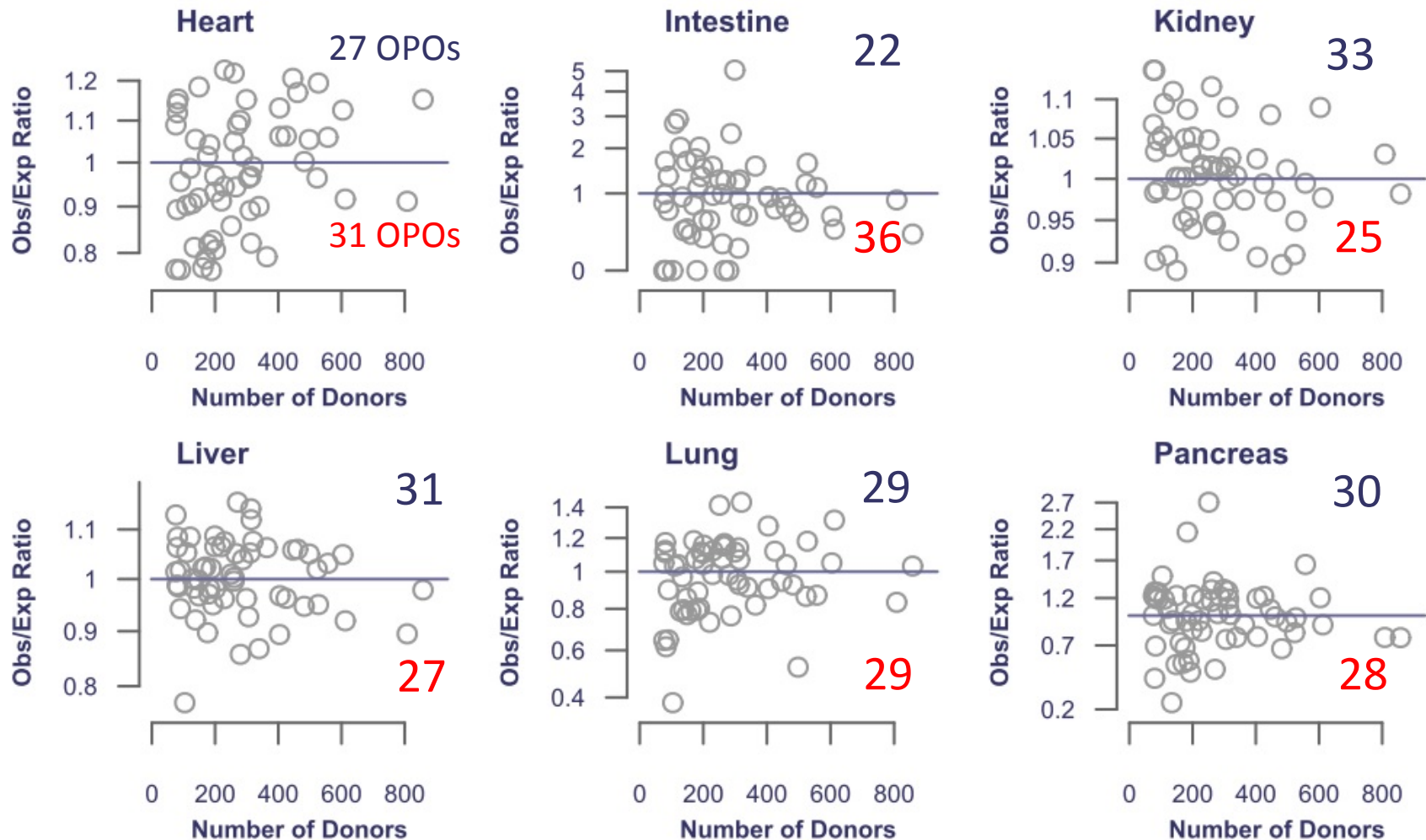
New OPO-Specific Reports (OSRs)

First Released: January 2014
Spring 2014 Release: June 17, 2014




 **SRT**
SCIENTIFIC REGISTRY OF
TRANSPLANT RECIPIENTS

Observed/ Expected, Adjusted Yield by Organ, 12/1/2011-12/31/2012

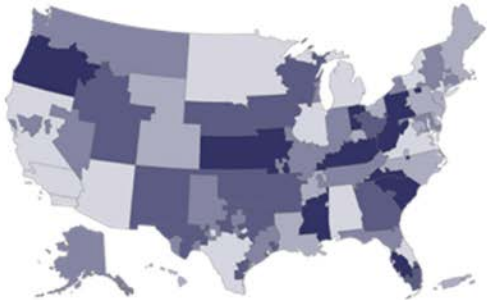


Understanding what donor factors are taken into account when estimating expected yield

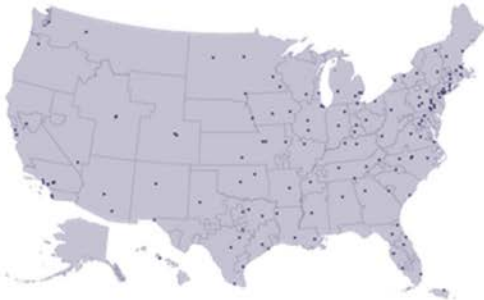
 **SCIENTIFIC REGISTRY OF
TRANSPLANT RECIPIENTS**

About the SRTR ▾ | Annual Data Reports ▾ | Transplant Program Reports ▾ | OPO Reports ▾ | For Researchers ▾


Supporting the transplant community with statistical analyses to improve patient outcomes.




[Organ Procurement Organization \(OPO\) Reports](#)




[Transplant Program Reports](#)




[Organ Allocation Summaries](#)



[Maps](#)



[Publications & Presentations](#)



[FAQs](#)

PSR Quick Links

- [Transplant Program Reports](#)
- [Methodology](#)
- [Risk-Adjustment Models \(Transplant Programs\)](#)
- [Risk-Adjustment Models \(OPO\)](#)
- [Transplant Report Timeline](#)
- [OPO Report Timeline](#)
- [Past Notices](#)
- [FAQs](#)

Contact the SRTR

914 South 8th Street
Suite S-4.100
Minneapolis, MN 55404
Tel: 877-970-SRTR
Fax: 612-873-1644
[Email Us](#)

Factors included in the risk adjustment models

Factor	Heart	Intestine	Kidney	Liver	Lung	Pancreas
Age	Y		Y	Y	Y	Y
BMI	Y			Y	Y	Y
Gender	Y		Y		Y	
Race/Ethnicity	Y			Y	Y	Y
Blood Type	Y		Y	Y	Y	Y
Cause of Death	Y		Y	Y	Y	Y
Circumstances of Death			Y	Y	Y	Y
Mechanism of Death	Y		Y		Y	Y
Clinical Infection Present	Y		Y	Y	Y	
Cigarette Use	Y		Y	Y	Y	

Factors included in the risk adjustment models (continued)

Factor	Heart	Intestine	Kidney	Liver	Lung	Pancreas
Cocaine Use	Y		Y	Y	Y	Y
Other Drug Use	Y			Y	Y	
Heavy Alcohol Consumption			Y	Y		Y
CDC High Risk Donor	Y		Y	Y	Y	Y
History of Diabetes	Y	Y*	Y	Y		Y*
Insulin Dependence		Y*	Y	Y	Y	Y*
History of Hypertension	Y		Y			Y
History of Cancer			Y		Y	Y
DCD	Y*	Y*	Y	Y	Y	Y
If DCD, Controlled?				Y		

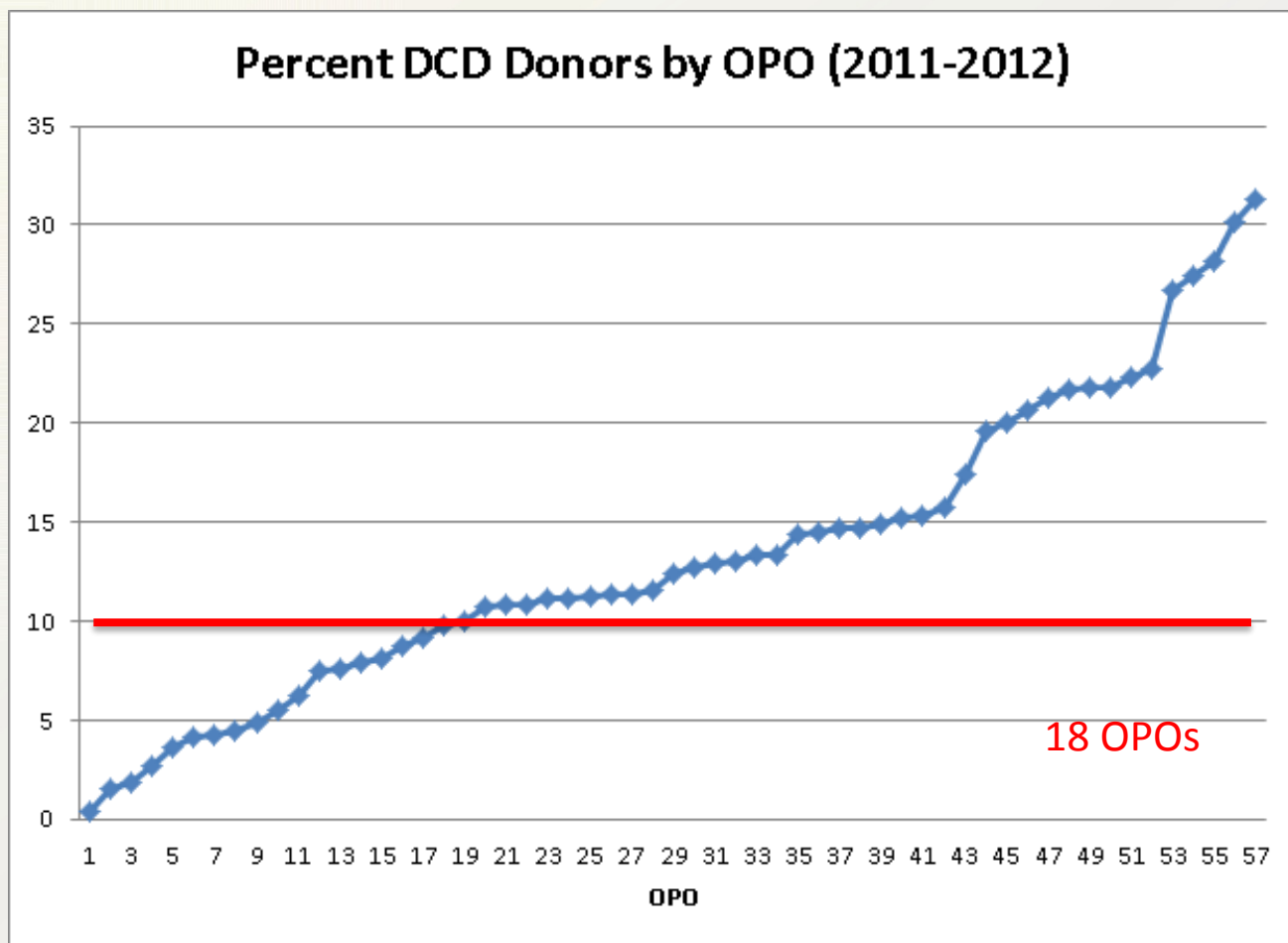
*Indicates a conditional exclusion (transplant of this organ type is rare in donors meeting these criteria); donors meeting any of these criteria had expected organ-specific yield estimated as the national probability of yield for donors meeting these criteria.

Factors included in the risk adjustment models (continued)

Factor	Heart	Intestine	Kidney	Liver	Lung	Pancreas
Cardiac Arrest After Brain Death	Y		Y	Y	Y	
Lung pO2 terminal value	Y			Y	Y	Y
Hepatitis B Surface Antigen	Y*	Y*	Y*	Y*	Y*	Y*
Hepatitis B Core Antibody	Y		Y	Y	Y	Y
Hepatitis C Antibody	Y*		Y	Y	Y*	Y*
Serum Creatinine	Y		Y		Y	Y
Organ Recovered Outside the Contiguous 48 States?	Y		Y	Y	Y	Y

*Indicates a conditional exclusion (transplant of this organ type is rare in donors meeting these criteria); donors meeting any of these criteria had expected organ-specific yield estimated as the national probability of yield for donors meeting these criteria.

Variation in DCD donors by OPO



13%
National
Average

Methods

- Using SRTR risk-adjusted yield model:
 - We estimated donor yields and yield specifically from donation after circulatory death (DCD)
 - Assuming all OPOs were performing at least, as expected
 - Assuming all OPOs were performing at least, as well as the OPO with the highest yields
 - Assuming transplants from DCD donors occur at same rate as the average DCD organ transplant rate across all OPOs in 2011-2012
 - Excluded OPOs in Hawaii and Puerto Rico due to geographic location

Number & type of organs transplanted (2011-2012) if all OP0s were performing at least as expected

Organ	Current Yield	At Least As Expected Yield	Additional Transplants
Heart	4,747	5,001	254
Intestine	233	290	57
Kidney	23,717	24,216	499
Liver	11,768	12,105	337
Lung	3,278	3,521	243
Pancreas	2,088	2,342	254
Total	45,831	47,475	1,644

Number & type of organs transplanted (2011-2012) if all OPOs were performing at least as expected or performing as well as the highest performing OPO

Organ	Current Yield	At Least As Expected Yield	Additional Transplants	Yield as Highest OPO	Additional Transplants
Heart	4,747	5,001	254	6,514	1,767
Intestine	233	290	57	1,229	996
Kidney	23,717	24,216	499	29,152	5,435
Liver	11,768	12,105	337	14,384	2,,616
Lung	3,278	3,521	243	6,083	2,805
Pancreas	2,088	2,342	254	4,885	2,797
Total	45,831	47,475	1,644	62,248	16,417

Number & type of organs transplanted (2011-2012) from DCD donors if all OPDs increased DCD to at least 10%

Organ	Current Yield	At Least 10% DCDs	Additional Transplants
Kidneys	3,444	3,746	320
Livers	533	583	50
Total	3,977	4,347	370*

* Represents 250 additional donors

Number & type of organs transplanted (2011-2012) from DCD donors if all OPDs increased DCD to 31%

Organ	Current Yield	At Least 10% DCDs	Additional Transplants	31% DCDs	Additional Transplants
Kidneys	3,444	3,746	320	10,004	6,560
Livers	533	583	50	1,558	1,025
Total	3,977	4,347	370	11,562	7,585**

** Represents 4,200 additional donors

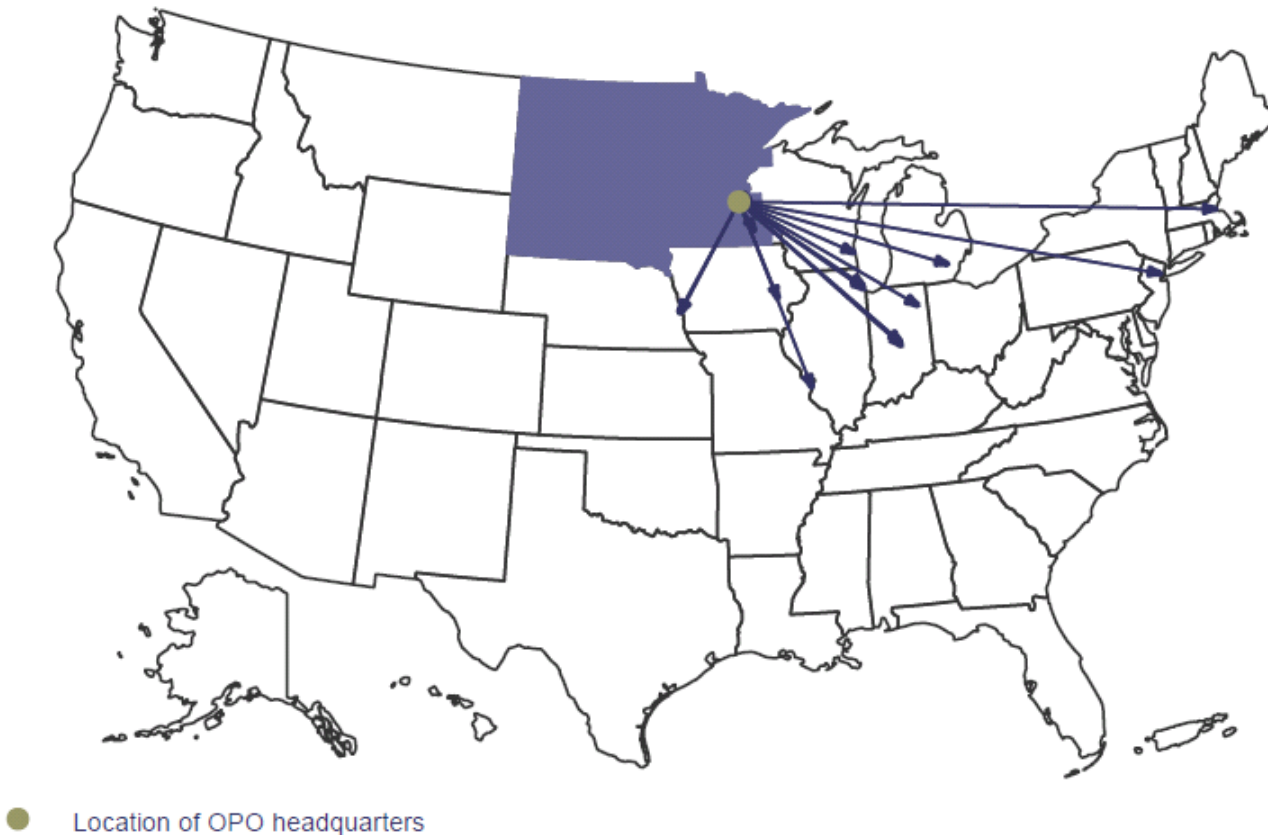
Conclusions

- Thought exercise using SRTR risk-adjusted yield model suggests 1,644 additional transplants if OPOs yield as expected
- Additional 16,417 transplants if OPOs yield as well as the OPO with the highest yield
- If all OPOs increase DCD to at least 10%, 370 additional transplants possible
- If all OPOs increase DCD to 31% (same as the highest DCD donors in OPO), 7,585 additional transplants possible
- Exchanging best practices between OPO and transplant centers to reduce regional variation can increase number of transplants

Public OPO-specific reports show where OPOs are sending the procured organs

E. Programs Transplanting Organs Procured by MNOP

Figure E1. Programs transplanting hearts procured by MNOP, 01/01/2013 to 12/31/2013*



* Transplants within the local area of the OPO are not always visible on the map due to scale. See Table E1 for full details.

Acknowledgments

SRTR

- Bertram Kasiske, M.D.
- Jon Snyder, PhD, M.S.
- Hui Xong, M.S.
- David Zaun, M.S.