

Organ Utilization – OPO Challenges and Approaches

KEVIN O'CONNOR, CEO
LifeCenter Northwest (Seattle)

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

HEALTH AND MEDICINE DIVISION
Board on Health Sciences Policy
Board on Health Care Services

**The Committee on A Fairer and More Equitable, Cost-Effective, and
Transparent System of Donor Organ Procurement, Allocation, and
Distribution: Public Workshop**

February 4 & 5, 2021
Virtual Public Workshop

Facts About Kidney Utilization in the US

- **Nearly 5000 deceased donor kidneys are discarded each year in the US**

In 2019, over **4,460** deceased donor kidneys were recovered for transplant but ultimately not used. This represents 20% of all kidneys recovered. (<https://optn.transplant.hrsa.gov/data/>)

- **Kidney discard rate in France is half of the US rate (9.1% vs. 17.9%)**

Between 2004 and 2014, in the US, 156,089 kidneys were recovered from deceased donors, of which 128,102 were transplanted, and 27,987 (17.9%) were discarded. In France, among the 29 984 kidneys recovered between 2004 and 2014, 27,252 were transplanted, and 2,732 (9.1%, $P < .001$ vs United States) were discarded. Conclusion: **17,435 (62%) of kidneys discarded in the United States would have instead been transplanted under the French system.** (Aubert O, Reese PP, Audry B, et al JAMA Internal Medicine October 2019 Volume 179, Number 10 1365-74)

- **Deceased donor kidneys are more likely to be discarded if recovered on Friday or Saturday independent of organ quality (the Weekend Effect)**

181,799 deceased donor kidneys recovered for transplantation from 2000-2013. Compared with weekday kidneys, organs procured on weekends were significantly more likely to be discarded than transplanted (odds ratio: 1.16; 95% confidence interval: 1.13-1.19), even after adjusting for organ quality (adjusted odds ratio: 1.13; 95% confidence interval: 1.10-1.17). (Mohan S, Foley K, Chiles MC, et al Kidney Int 2016 Jul;90(1):157-63)

The Kidney Placement Process is Inefficient

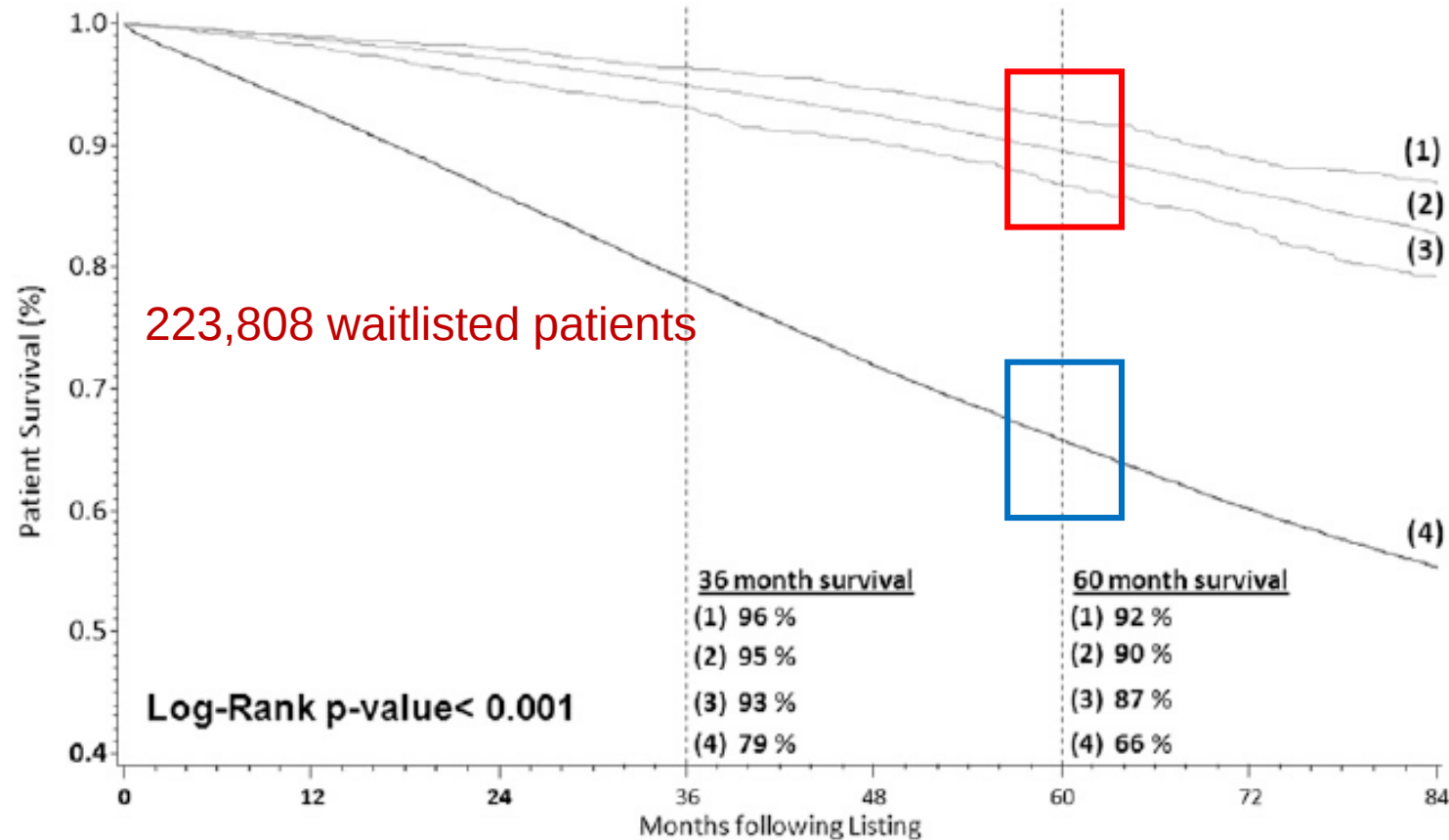
- **On average, many hundreds of kidney offers are made for every kidney transplanted – 382,000 offers per 273 kidneys transplanted over 180 days**
- Over a recent period of 180 days, LifeCenter Northwest made over 382,000 kidney offers resulting in 273 kidneys transplanted – an average offer rate of 1400 offers per kidney transplanted (median rate ~ 200)
- **Far more kidney offers are declined than accepted**
- In a study of over 280,000 patients waiting for a kidney, deceased donor kidney allograft recipients received a **median of 17 offers over 422 days**, whereas candidates who died while waiting received a **median of 16 offers over 651 days** (Husain S, King K, Pastan S, et al *JAMA Netw Open.* 2019;2(8):e1910312)
- **There are good reasons why kidney offers are declined**
- Transplant programs need to consider a wide range of factors when deciding whether to accept or decline an organ offer, including but not limited to donor variables like age and comorbidities, distance from donor to recipient (cold ischemic time), transplant candidate variables, likelihood of successful outcome, etc. Oftentimes it comes down to the expected cold ischemic time.
- **Timing of the kidney offer is a major factor in successful placement, especially for “hard-to-place” kidneys (due to the fact that extended preservation time is associated with inferior transplant outcomes)**

Patient Survival with any Kidney Transplant is Far Better Than Staying on Dialysis

Association between Kidney Transplant Center Performance and the Survival Benefit of Transplantation

Versus Dialysis Schold JD, Buccini LD, Goldfarb DA, et al Clin J Am Soc Nephrol 9:1773-1780

October

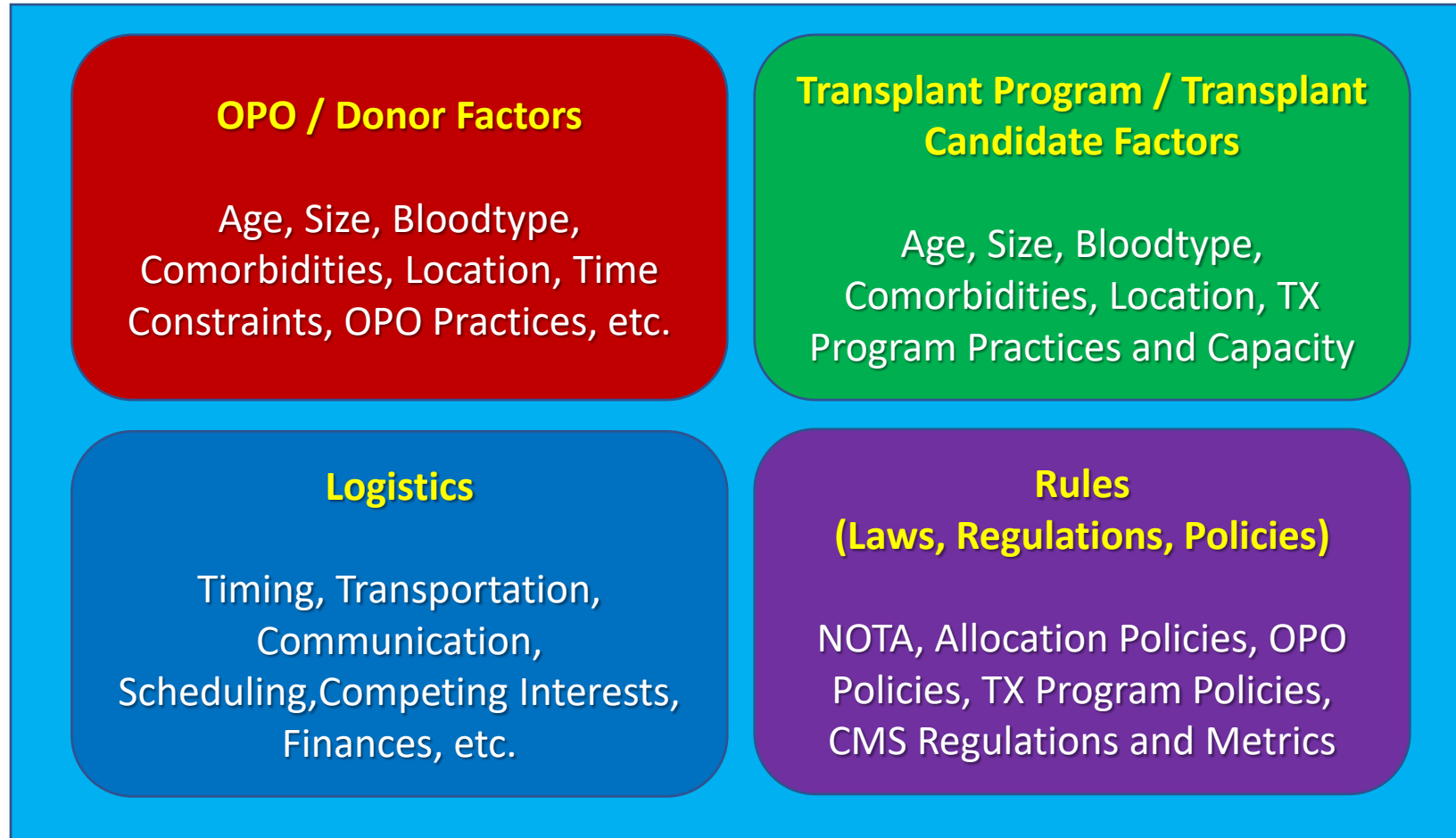


After five years: Patient survival was 21-26 PP higher for transplanted patients than for patients still on dialysis...

The path forward... Don Berwick, founder of Institute for Healthcare Improvement and former CMS Administrator

- The first law of improvement: **“Every system is perfectly designed to achieve exactly the results it gets”.**
- To illustrate this, he offers the analogy of a driver trying to make a car go faster. When the driver has reached the top speed, he or she cannot make the car go faster by telling it to go faster or by “giving it an incident report in its file.”
- The top speed of a car is dependent on the system (the car), so if you want to go faster, *you need to change the car, (i.e., change the system).*
- Therefore, the second law of improvement: **“If you want to change your results, you have to change your system”.**

Our Current System is Perfectly Designed to Ensure Nearly 5000 Recovered Kidneys Go Unused Each Year



A complex, interdependent system with many variables

Opportunities for Improving the System

Organ Procurement Organization:

- Increase placement of recovered organs through collaboration with transplant programs willing to utilize organs from more complex donors
 - Including facilitating use of innovations like donor intervention research protocols and ex vivo technologies to expand both the quantity and quality of available organs
- Develop specialized staff to maximize organ utilization
- Intentionally and continuously build effective relationships with TX programs designed to maximize organ utilization
 - Especially in light of evolving organ allocation policies and broader sharing
- Keep learning and changing, and keep the goal of transplanting patients front and center

Opportunities for Improving the System

Allocation Policies Custom Designed to Increase Utilization of “hard-to-place” Kidneys

- Create an alternative pathway (“rescue allocation pathway”) for kidneys that are at high risk of non-use, to match them with candidates quickly and avoid extended preservation time
- Develop an “old for old” program to partition off donors and candidates over age 65 years to increase utilization of older donor kidneys which will provide benefit to older patients
- **BOTH** of these programs are working well for Eurotransplant (Austria, Belgium, Croatia, Germany, Hungary, Luxembourg, the Netherlands and Slovenia)