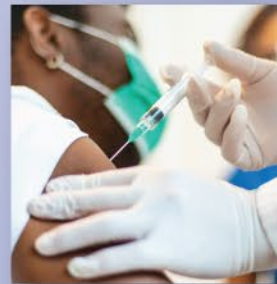
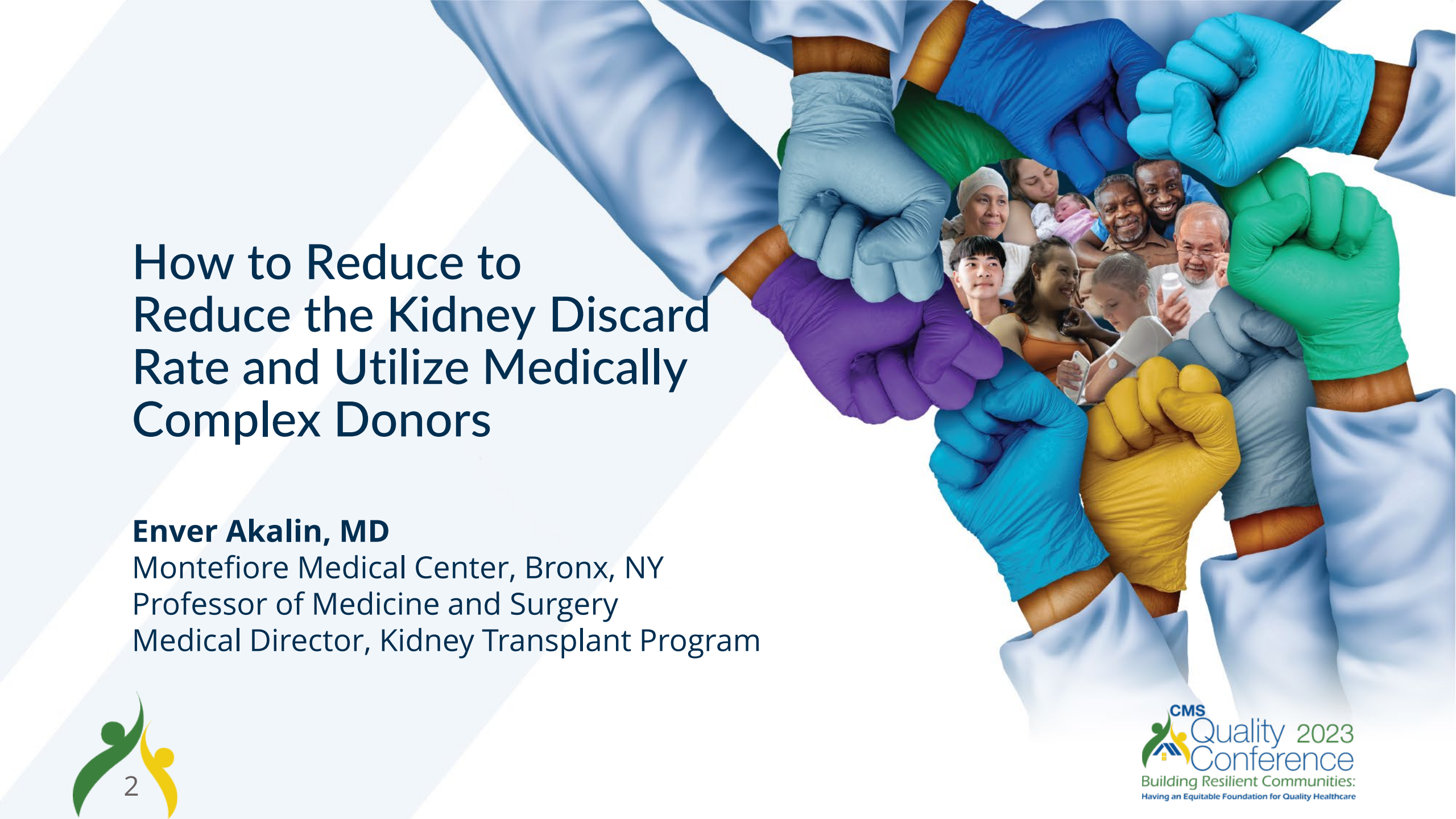


Better Than Dialysis: Putting Patients First to Maximize Kidney Transplantation



Agenda

- How to Reduce to Reduce the Kidney Discard Rate and Utilize Medically Complex Donors
 - Enver Akalin, MD, Montefiore Medical Center
- Digitally Transforming Transplantation to Optimize Kidney Acceptance
 - Joseph R. Scalea, MD, Medical University of South Carolina, Charleston, SC
- Development of a Dedicated Transplant Call Team
 - Heather Wertin, MPH, BSN, RN, Barnes-Jewish Hospital, St. Louis, MO




How to Reduce to Reduce the Kidney Discard Rate and Utilize Medically Complex Donors

Enver Akalin, MD

Montefiore Medical Center, Bronx, NY
Professor of Medicine and Surgery
Medical Director, Kidney Transplant Program



- 
- Kidney Transplant program activity and clinical outcomes at Montefiore Medical Center
 - Utilization of high KDPI organs and organs from donors over 60-year-old
 - Utilization of DCD donors

Montefiore Kidney Transplant Program

Kidney transplants performed since 2007

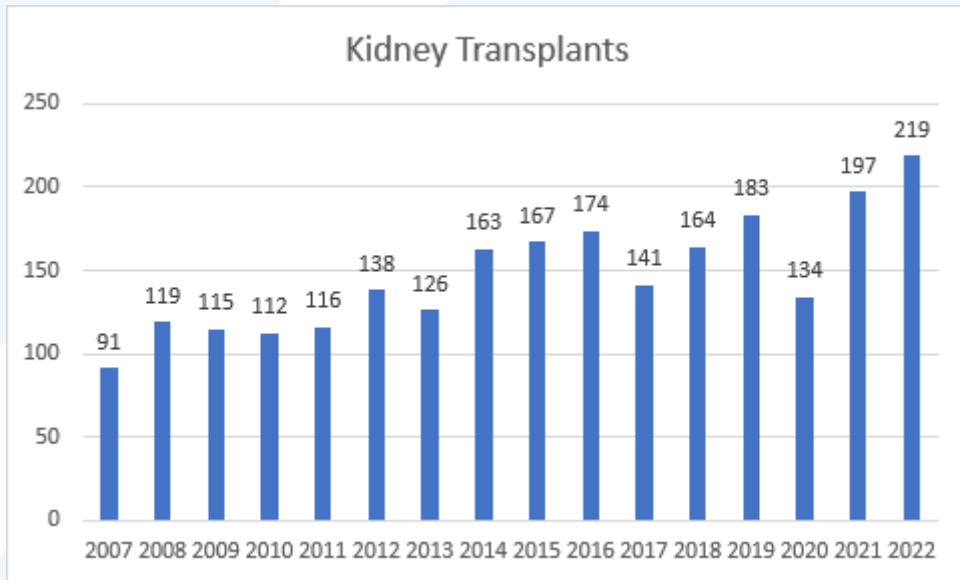


Table C7D. Adult (18+) 1-year survival with a functioning deceased donor graft

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

	NYMA	U.S.
Number of transplants evaluated	208	37,045
Estimated probability of surviving with a functioning graft at 1 year (unadjusted for patient and donor characteristics)	95.08%	92.61%
Expected probability of surviving with a functioning graft at 1 year (adjusted for patient and donor characteristics)	91.58%	--

Figure C5D. Adult (18+) 1-year deceased donor graft failure HR estimate

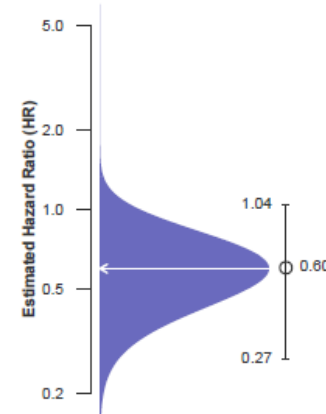
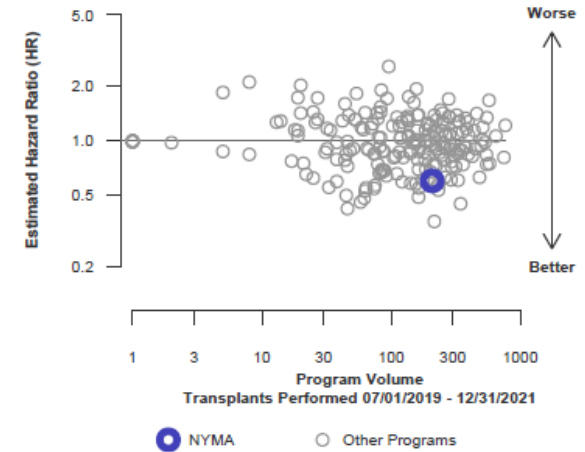


Figure C6D. Adult (18+) 1-year deceased donor graft failure HR program comparison



How did we increase transplant numbers?

▪ Recipient related factors:

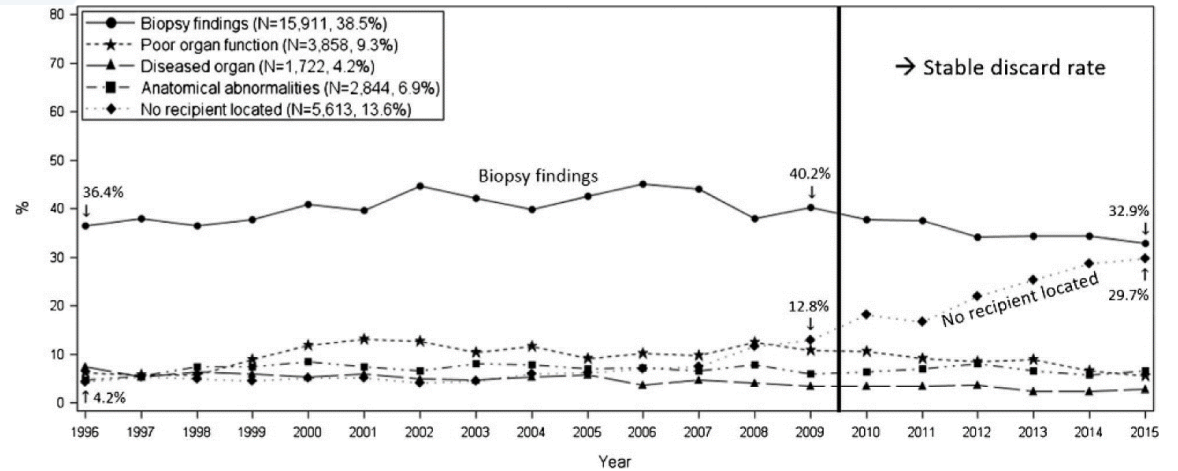
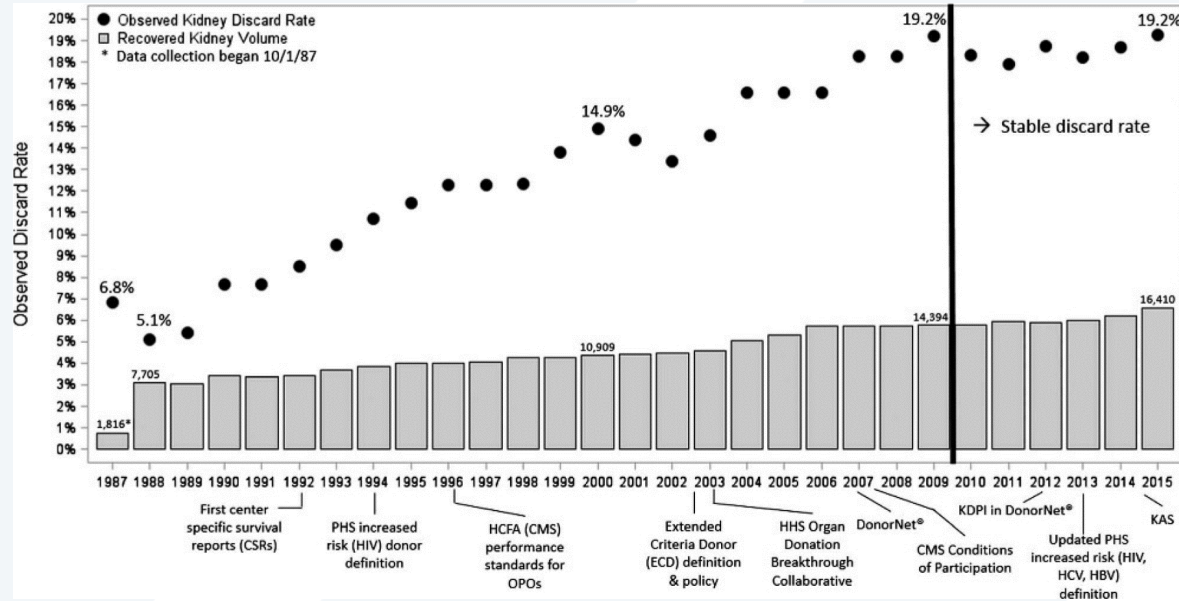
- Multiorgan transplant (kidney/pancreas, kidney/liver, kidney/heart, kidney/lung)
- Kidney transplantation in sensitized patients with donor-specific antibodies
- A2-incompatible kidney transplantation

▪ Clinical assessment of deceased-donors:

- Donors with high Kidney Donor Profile Index (KDPI)
- Donation after cardiac death (DCD)
- Donors with acute kidney injury
- PHS-high risk kidneys (HCV positive donors into HCV negative recipients)



Discard rates overtime in the USA

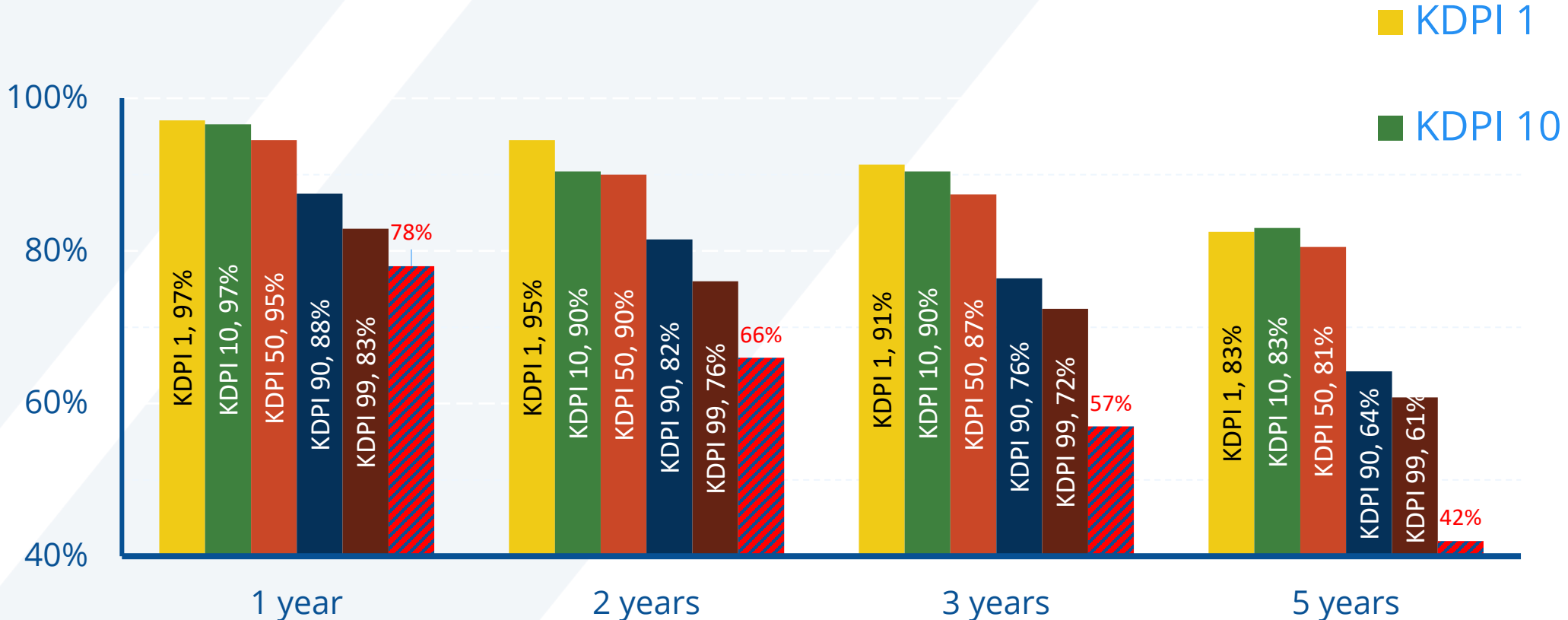


Stewart et al. Transplantation
2017, 101:575

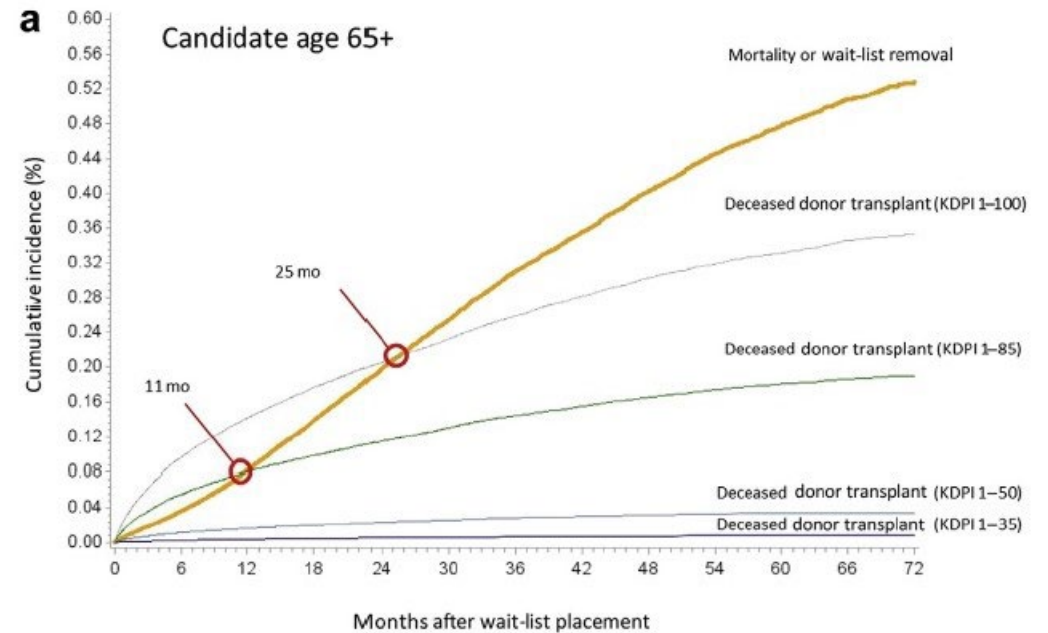
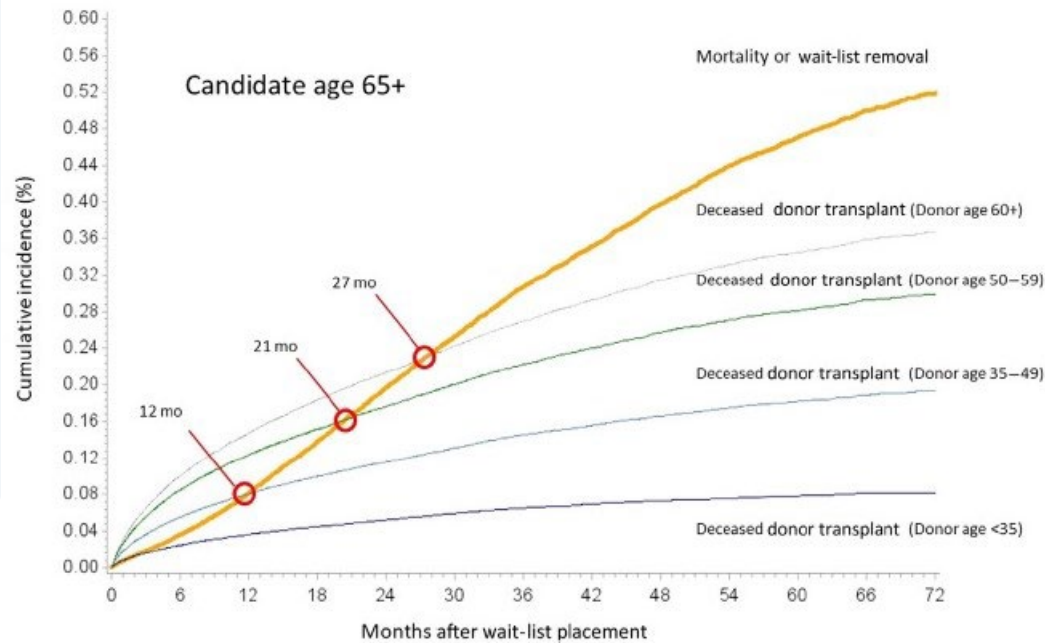
FIGURE 6. Trends in the 5 most common OPO-recorded discard reasons, 1996 to 2015. *Biopsy findings* has been the most frequently cited reason for kidney discard for 20 years, currently accounting for one third of discards. The second most common reason—*no recipient located/list exhausted*, indicating the OPO attempted but could not find an accepting transplant hospital—has risen sharply from under 10% in 2007 to 29.7% in 2015.



Comparing graft survival per KDPI to dialysis



Cumulative incidence of combined mortality and wait-list removal or deceased donor transplantation for candidates aged 65+ by donor age and KDPI



(Schold J et al. Kid Int, 2022, 102:640)



Assessment of deceased-donor organs at Montefiore Medical Center

- Offers are initially reviewed by coordinators
- If there is no absolute decline criteria, offers are reviewed by a transplant surgeon
- If surgeon agrees to accept the organ, offer is reviewed by a transplant nephrologist
- Recipient candidates are reviewed by the coordinators and transplant nephrologist
- Data coordinator send a list of patients who would be a candidate for medically complex kidneys
 - Patients over age of 60
 - On the waiting list less than 2 years



Increased transplant rate in older patients and sensitized patients at Montefiore

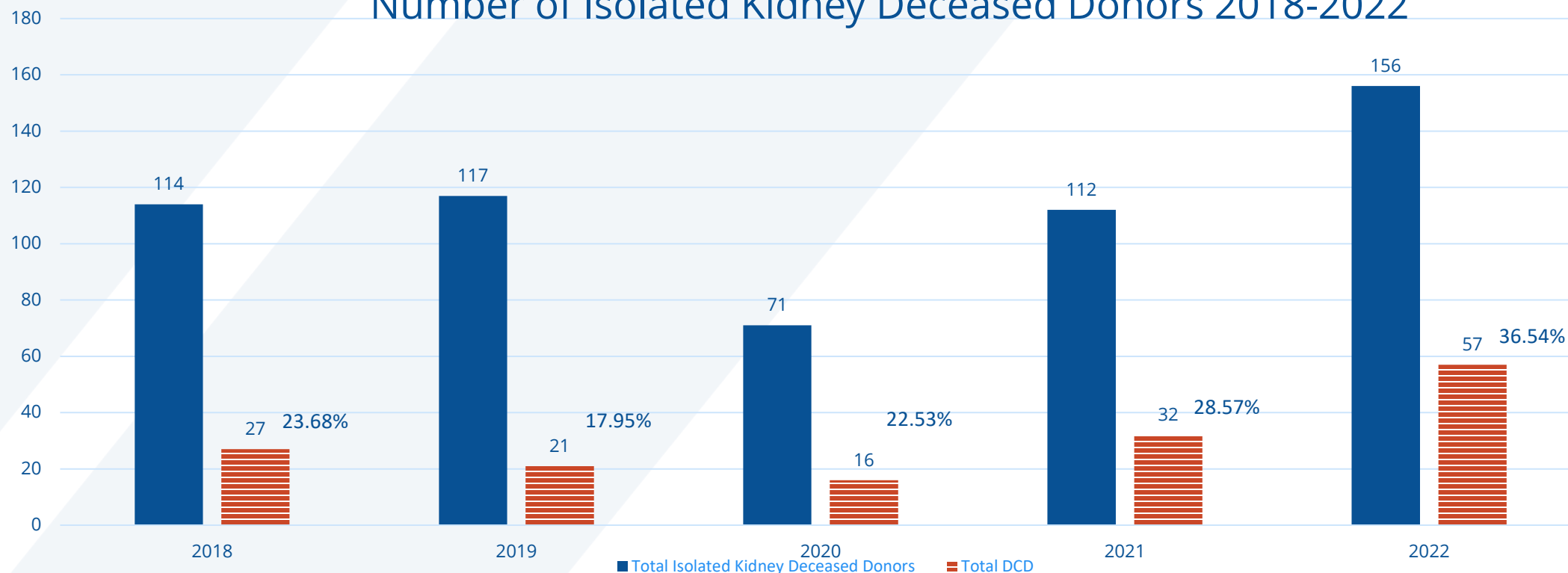
- Increased transplant rate in older recipients using medically complex kidneys (older donors, higher KDPI and DCD donors)
- Increased transplantation in highly sensitized patients with or without donor specific anti-HLA antibodies


Table B8. Percent of candidates with deceased donor transplants: demographic characteristics
Candidates registered on the waiting list between 07/01/2016 and 06/30/2019

Characteristic	Percent transplanted at time periods since listing This Center				United States					
	N	30 day	1 year	2 years3 years	N	30 day	1 year	2 years3 years		
65-69 years	144	4.2	18.8	25.7	30.6	13,349	4.4	17.8	24.7	29.8
70+ years	69	7.2	37.7	40.6	49.3	6,884	4.4	20.0	26.8	31.4
Peak PRA/CPRA										
0-9%	872	3.7	14.2	18.8	24.1	77,957	4.8	18.5	25.6	31.5
10-79%	47	14.9	27.7	40.4	48.9	12,581	3.8	18.2	26.1	32.0
80+%	27	0.0	29.6	51.9	59.3	8,423	3.1	26.2	36.2	42.0

Utilization of DCD kidneys at Montefiore Medical Center

Number of Isolated Kidney Deceased Donors 2018-2022



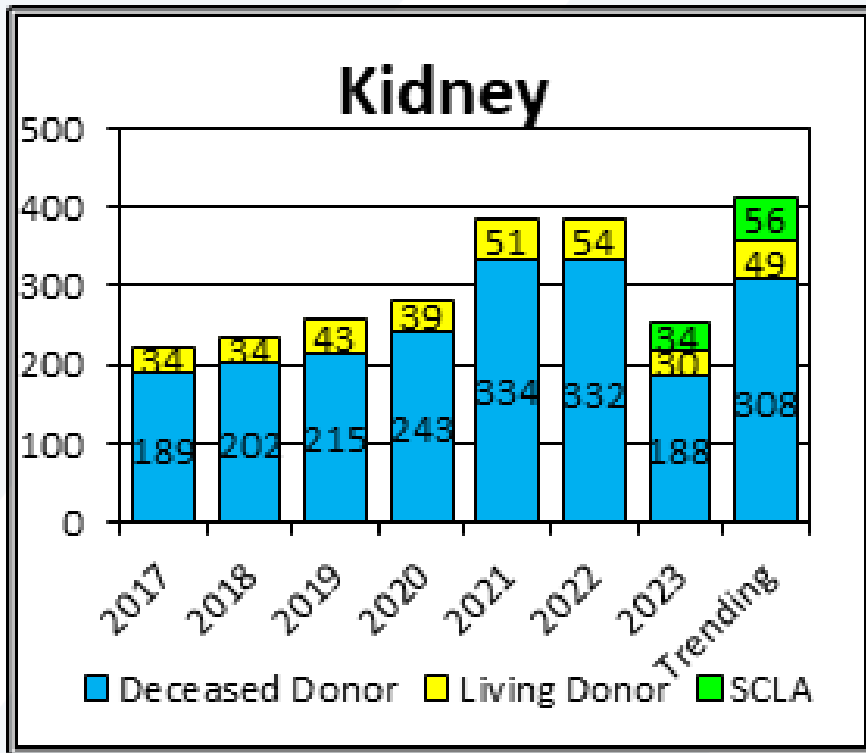


Digitally Transforming Transplantation to Optimize Kidney Acceptance at MUSC

Joseph R. Scalea, MD

Director of Kidney Transplantation and Transplant Quality,
Vice Chair of Innovation and Commercialization
Professor of Surgery
Medical University of South Carolina

Approach to Quality in the Context of High Volumes: The MUSC Approach



<i>Deceased Donors Adult</i>	#	90-Day Graft Failure	90-Day Survival
All Comers	606	19	96.86%
Dual Kidneys	0	0	N/A
DCD	162	7	95.68%
High KDPI	21	3	85.71%
AKI (Donor Creat >3)	58	4	93.10%

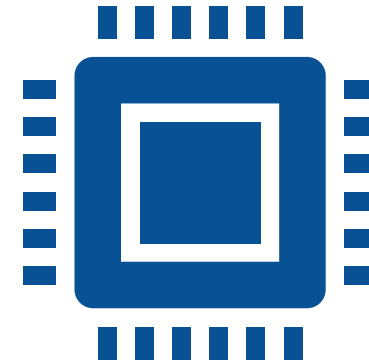
<i>Deceased Donors Adult</i>	#	1 Year Conditional Graft Failure	1 Year Conditional Survival
All Comers	533	16	97.00%
Dual Kidneys	0	0	N/A
DCD	136	4	97.06%
High KDPI	13	2	84.62%
AKI (Donor Creat >3)	50	0	100.00%

Digital Transformation

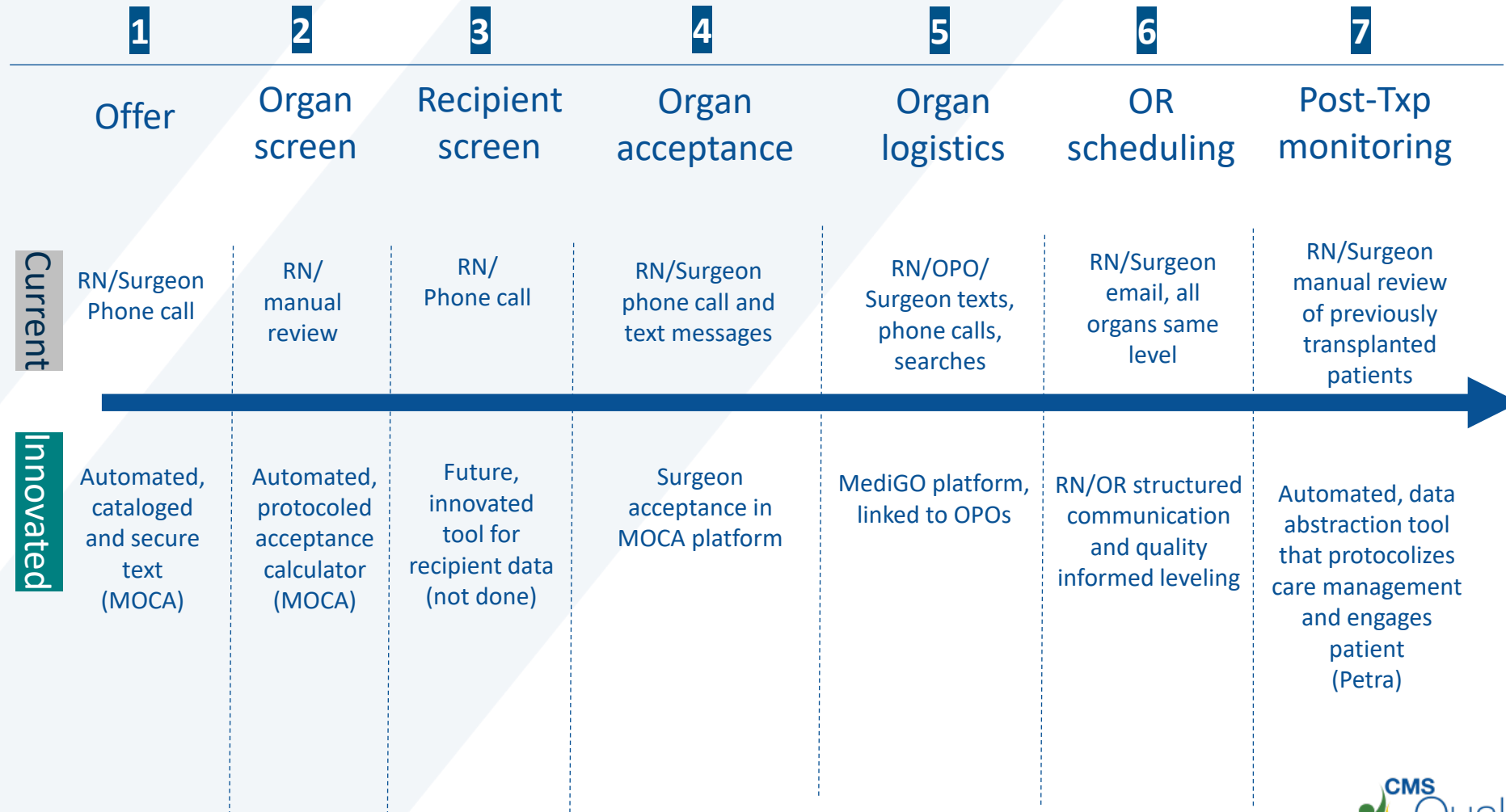
Not just digitization

Digitization + Transformation

End result is better than pre-transformation and delivers a *sustainable* value-add

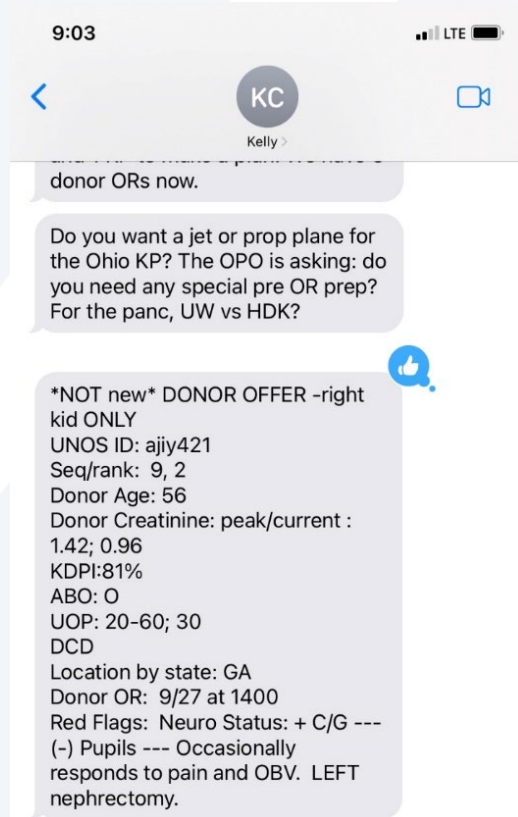


Digital Transformation Map for Transplant



Process 1: Process towards transformation

Text offers started Spring 2022



Text offers

- Standard data sharing
- Protoled approach

Variability reduction

- Metrics for intervention
- Homogeneity in decision

MOCA

- Mobile, Web-based
- On-call decision support



Processes 3, 4

3. Recipient screen

4. Organ acceptance

- Not yet built
- Could integrate with national systems (UNOS)

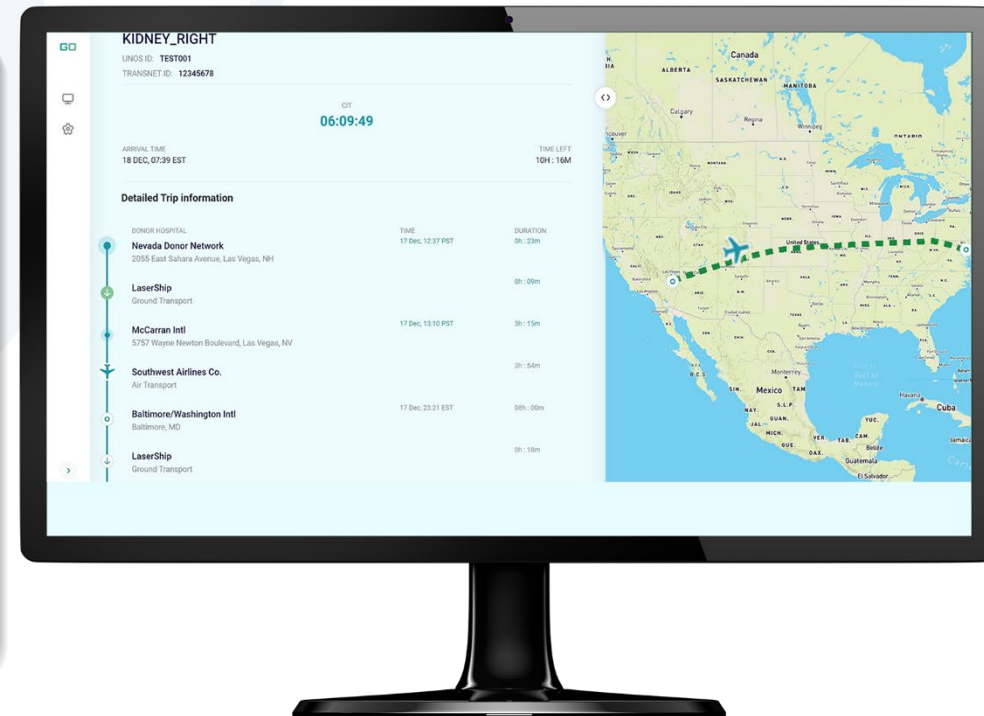
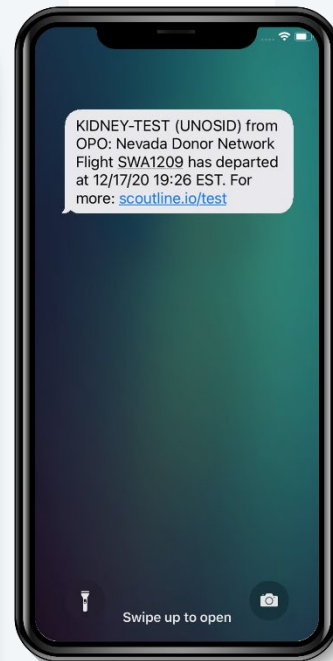
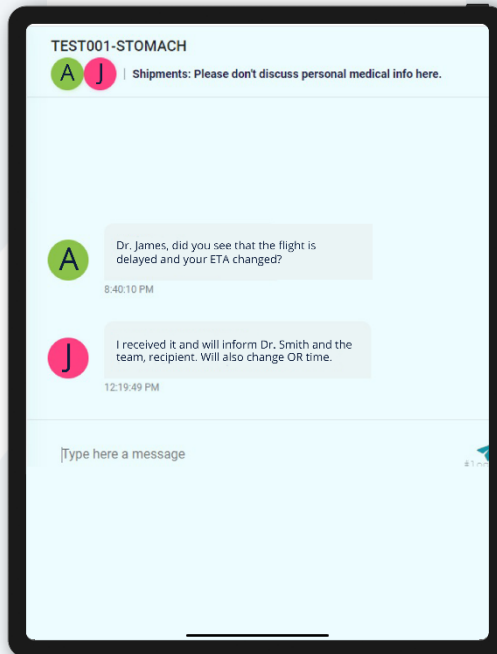


Process 5: Organ Transplant Logistics, Problems and Solutions

- It takes 457 minutes for a single organ to be accepted
- There is no transparency in organ shipment
- Average CIT is 19 hours and the longest flight in the USA is 5 hours
- Organ flights have been called “riskiest job in medicine”



Process 5: Fully functional: Tracking, Monitoring, Data Capture



Process 6: OR leveling, Summer 2022

- **Unmet need:** Hospitals have limited OR resources, but transplants are reactively scheduled. Thus, OR's need as much information as possible about organ timing to prepare for surgery
- **Current limitations:** OR's do not accept organs, and are thus not privy to OR time sensitivity of individual organs or cases
- **Solution:** Protocolization and digitization of organ quality informed leveling, in partnership with the OR



Process 6: What the protocol looks like

1. Level 1B:

- a. All kidneys with >24 hours of CIT once organ/patient are in the hospital
- b. High risk organs at with >18 hours CIT:
 - i. DCD kidneys
 - ii. High KDPI (>85%)
 - iii. AKI (creatinine >3 mg/dL)

2. Level 2:

- a. High risk organs at with >12 hours CIT:
 - i. DCD kidneys
 - ii. High KDPI (>85%)
 - iii. AKI (creatinine >3 mg/dL)
- b. All kidneys >18 hours CIT once organ/patient are in the hospital

3. Level 3:

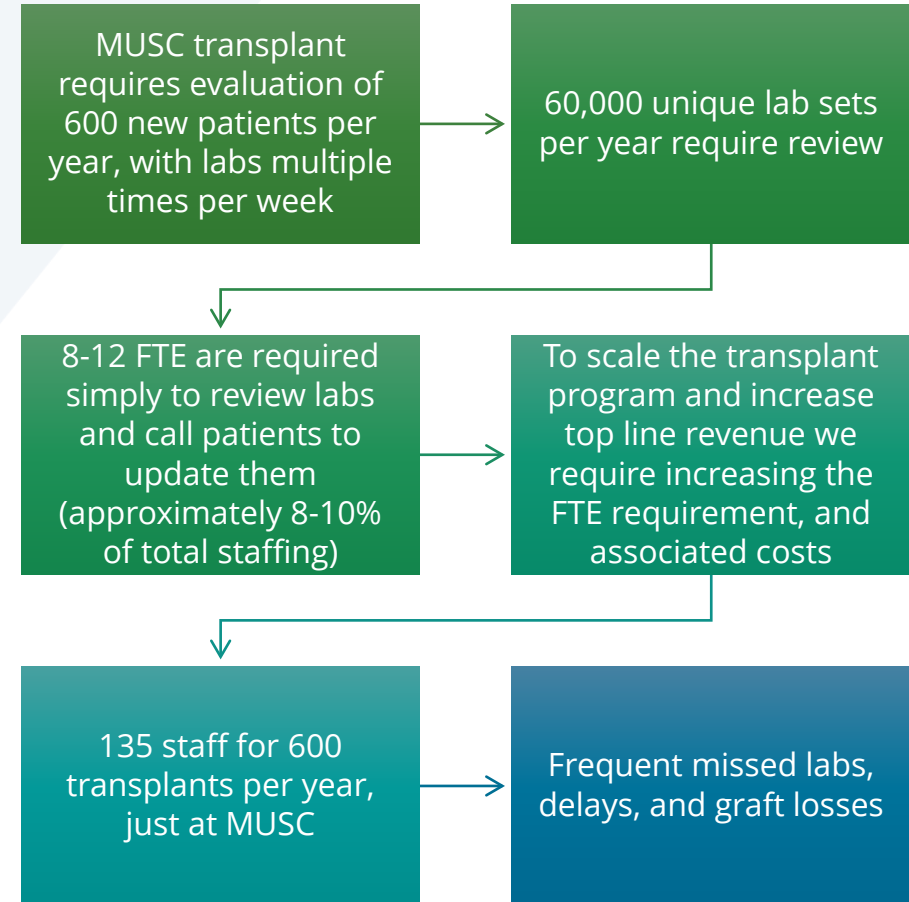
- a. All remaining organs (standard criteria with <18 hours CIT, or high risk <12 hours)



Process 7: Chart Abstraction for Post-Transplant Management

Can we automate chart review and patient contact?

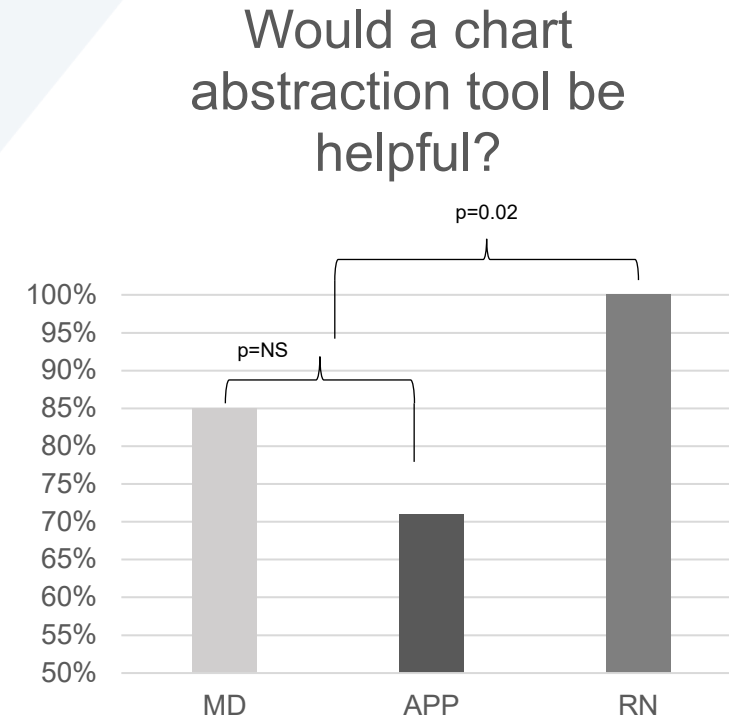
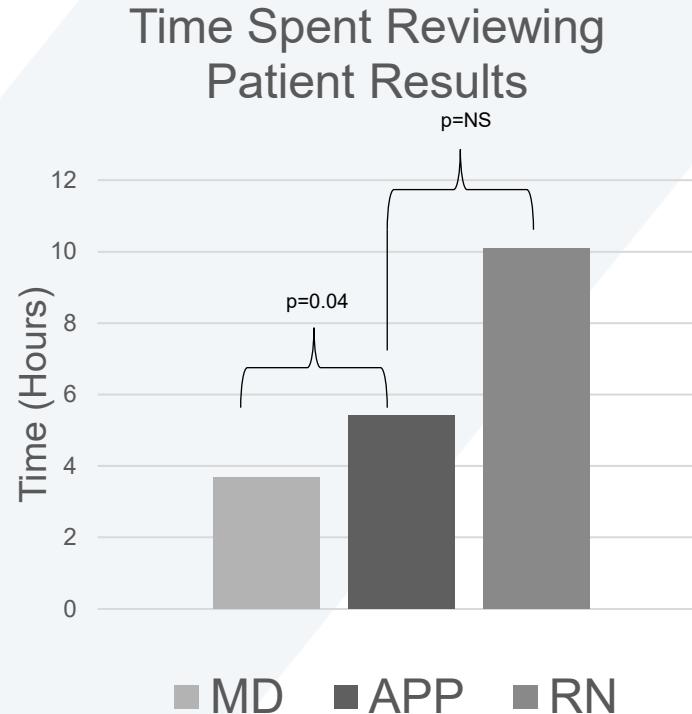
- Automated chart abstraction
- Rank order listing for at-risk patients
- First version available for testing Fall 2022!



Process 7: Chart abstraction: Unmet needs

Scalea et al.
In Submission

Time that providers
spend reviewing
protooled data each
week






Thank You

- Julie Anderson
- Daniel Stanton
- Derek DuBay, MD
- P. Baliga, MD

Development of a Dedicated Transplant Call Team

Heather Wertin, MPH, BSN, RN
Program Manager, Abdominal Organ Transplant
Barnes-Jewish Hospital
St. Louis, MO



- 
- Purpose of a call team
 - Team development
 - Year one results
 - Future objectives

Purpose of a Call Team: Reason for Action

Organ Offer Volumes for Kidney Transplant



*Includes 2 months pre- and 1 month post- allocation changes

- Disruption of patient care due to on-call responsibilities
- Coordinator burnout
- Surgeon capacity
- Inconsistencies in on-call process across organ groups

ETCLC Focus

Aim 1

What

Increase deceased donor organ transplant through creation of an 'organ package'

How

Create dedicated call team and streamline organ offer process





ACTION PLAN

- Develop Dedicated Call Team
 - Key Deliverables

Donor Organ
Evaluation
Process

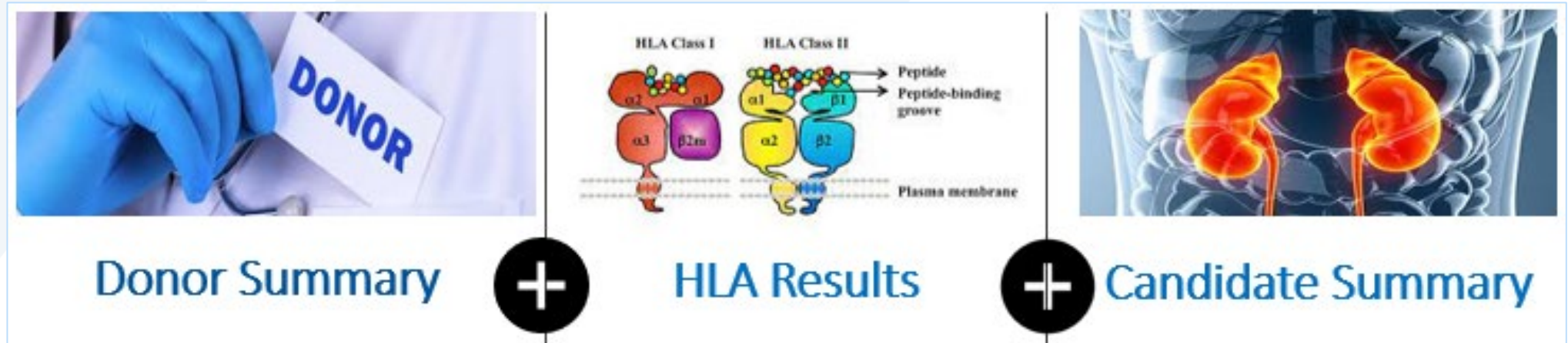
Organ Offer
Tracking Tool

Standardized
Communication

Scripting of
Offer Types

Creation of Organ Package

A Tool for Efficient Review of Kidney Offers



- All information is provided by the call team to the surgeon to facilitate making the best decision in the most efficient way.
- Instead of 50+ texts messages to the surgical team, there is 1 phone call.

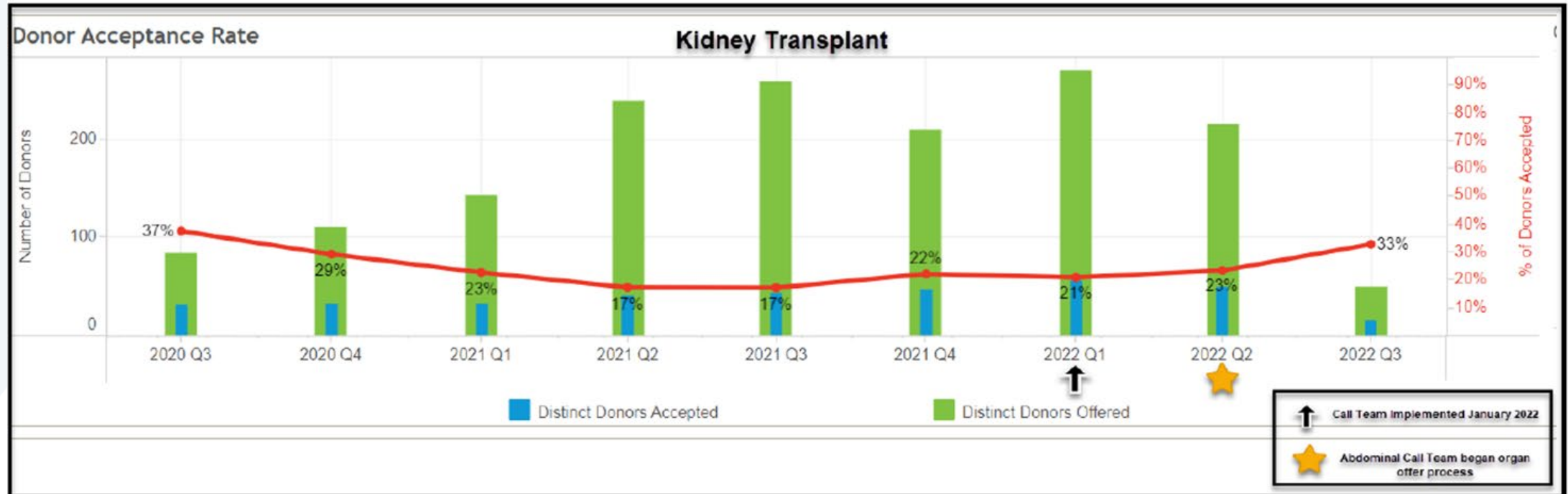
Use of Non-Clinical Team Members for Import Offers

- Model proven successful by our local OPO
- Nursing shortage- no problem!
- Reduced operational costs
- Connected our non-clinical team members to the mission of our transplant center
- Illustrated the value of the work performed in primary roles



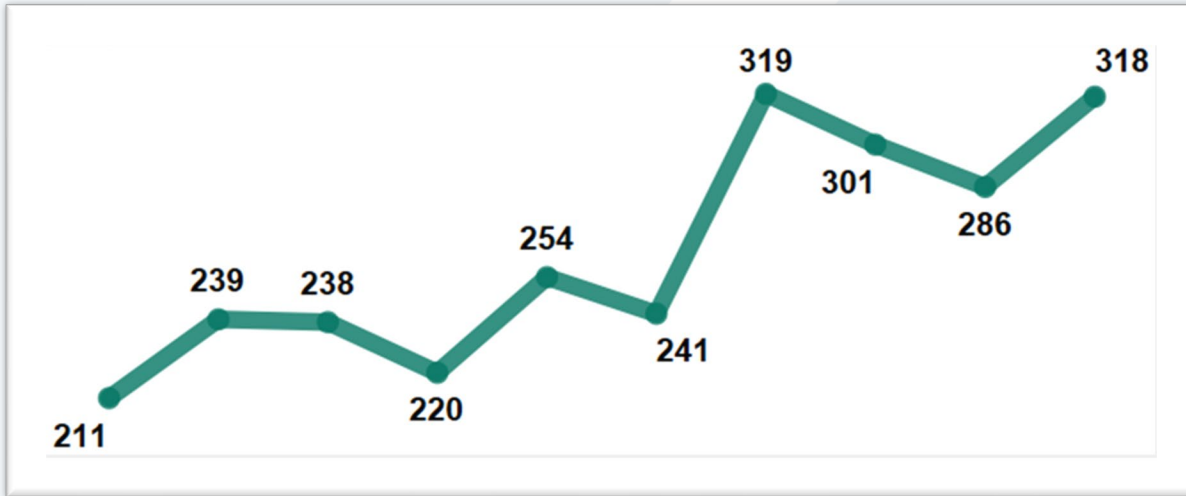
Results

Kidney offer acceptance increased by **7.7%** within the first months of organ package roll-out



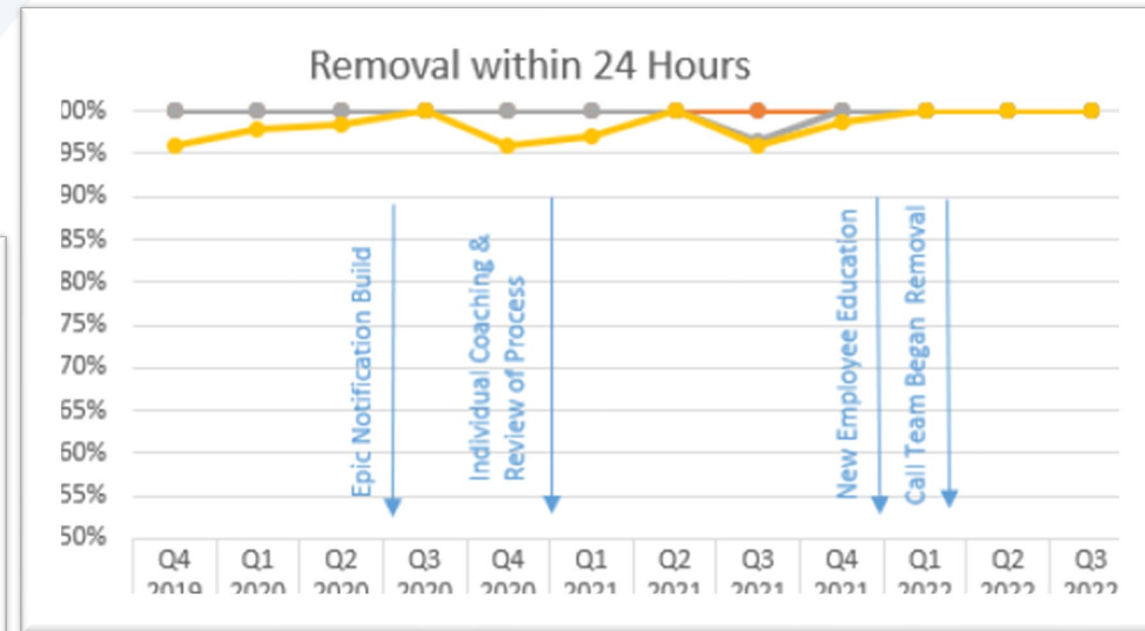
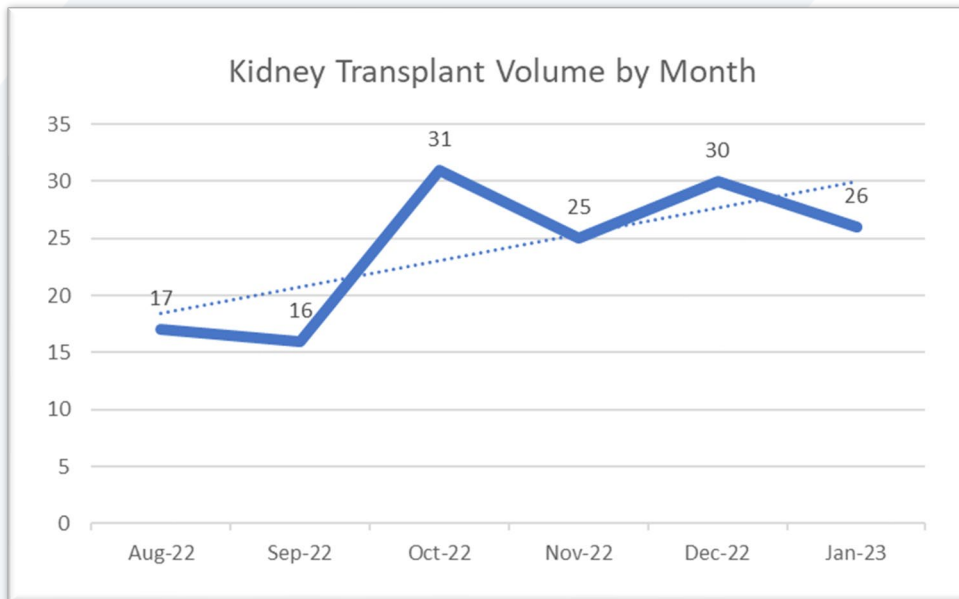
Results

11% increase in transplant volume in 2022



10 out of 10 transplant surgeons approve!

Increase in regulatory compliance



Results

Financial Assessment

Projected Costs

- \$343k increase in staff cost after Medicare reimbursement
- Difficult to assess lost productivity costs of previous state

Financial Gains (increase of 32 transplants)

- Net increase of \$1.1mil in contribution margin
- Covered cost of the team
- > \$750K additional in gross contribution margins

Future Objectives

Refine Process

- Review acceptance practices and declines
- Incorporate offer filters
- Cross train team members

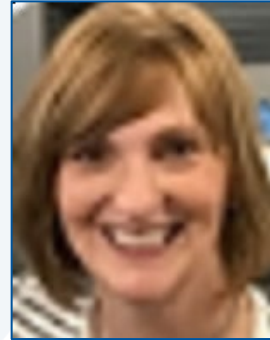
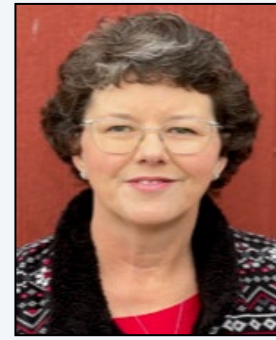
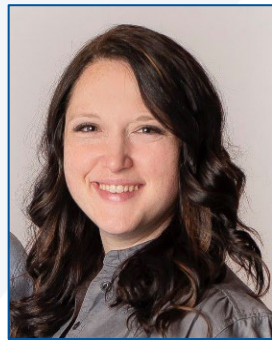
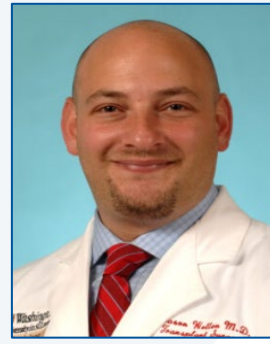
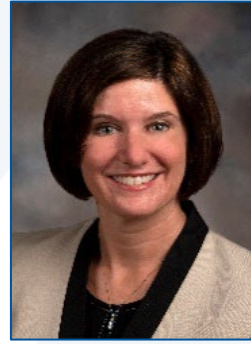
Add Affiliated Program

- Additional FTEs
- Program-specific training

Opportunities

- Partner with OPOs for expedited placement
- OPTN Offer Acceptance Collaborative
- 400 kidneys by 2026!!

Meet Our Team



Team Members: Heather Wertin, Gregory Richardson*, Martha Stipsits, Casey Rowe, Dr. Jason Wellen, Mary Meyers, Jessica Wagner*, Eryn Simmons, Tanya Barron, Craig Cole*, Tayneesha Tate*, Jessica Bailey*, Fadra Coates*, Rita Gersman*, Trisha Grannemann, Cara Doering, Shalma Humphrey, Sydney Critchfield, Nancy Culiberk, JoAnn Bier*, Michele Rhoades*, Mary Moran*, Annie Klingler*, Richard Rothweiler*, Lindsey Speir*, Meranda Scherer, Donna Phelan*, Chang Liu*

*not pictured

Questions?

