Interventions to Attenuate Inequities in Access to Transplantation

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Disclosures

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• Boston Celtics season ticket holder
Disclosures

• Undoubtedly, I will fail to mention someone’s work and for that I am sorry
  – This omission says nothing about the importance of the research nor its value to the transplant community and patients
  – Please let me know about your work during the Q & A or at some other time during this conference
Learning Objectives

• Describe interventions to attenuate inequities in KT access *
• Summarize evidence for effectiveness of these interventions
• Offer reflections and a path forward for reducing inequities in KT access

* Will not address policy-based interventions since covered elsewhere
Disparities vs. Inequities

Disparities:
Differences between populations in presence of kidney disease, KT access, or KT outcomes

Inequities:
Differences between populations in presence of kidney disease, KT access, or KT outcomes that are...
- unnecessary and avoidable
- unfair and unjust
- rooted in social injustices that make some groups more vulnerable to worse health, limited access to treatment, or poor outcomes than other groups

Boston Public Health Commission
Health Disparities and Inequities

A complex and interrelated set of individual, provider, health system, societal, and environmental factors contribute to health disparities and inequities

National Quality Forum, 2017
Health Disparities and Inequities

While health disparities and inequities are commonly viewed through the lens of race and ethnicity, they occur across a broad range of dimensions.

National Quality Forum, 2017
KT Disparities and Inequities

- Race
- Gender
- Geography
- Disability
- Development of CKD
- Progression from CKD to EKRD
- Transplant referral
- Access to Waiting List
- Receiving a transplant
- Transplant outcomes
- SES
- Age
- Language
- Citizenship
KT Disparities and Inequities

- Development of CKD
- Progression from CKD to EKRD
- Transplant referral
- Access to Waiting List
- Receiving a transplant
- Transplant outcomes

Factors:
- Race
- Gender
- Geography
- Disability
- SES
- Age
- Language
- Citizenship
KT Referral

- >700,000 ESKD patients
- Because only 10% of patients receive pre-emptive KT, dialysis centers are critical targets for KT referral interventions
- Substantial variation in referral rates for KT
- Numerous studies show historically lower KT referral rates for black patients, relative to white patients
- Clinician perception of appropriateness of KT, time spent with patients, type and format of KT education, resource allocation all may lead to delays in KT referral and access

Ladin K et al. Am J Transplant, 2009
A Randomized Trial to Reduce Disparities in Referral for Transplant Evaluation

Rachel E. Patzer,‡‡ Sudeshna Paul,§ Laura Plantinga,‡‡ Jennifer Gander,⁎ Leighann Sauls,† Jenna Krisher,§ Laura L. Mulloy,‡ Eric M. Gibney,‡ Teri Browne,‡ Carlos F. Zayas,§ William M. McClellan,‡‡ Kimberly Jacob Arriola,‡‡ and Stephen O. Pastan,† on behalf of the Southeastern Kidney Transplant Coalition

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RaDIANT Trial
[Reducing Disparities In Access to Kidney Transplantation]

• Funded by NIMHD
• Aims
  – Improve proportion of patients referred for KT in Georgia
  – Evaluate whether intervention reduced black versus white racial disparities in KT referral
• Setting
  – Georgia dialysis facilities meeting one of following criteria:
    • a black versus white racial disparity in KT referral (n=75 facilities)
    • a within-facility referral proportion <50th percentile of the 274 Georgia facilities (n=59 facilities)
  – 134 facilities randomized to intervention vs. control
    • Nearly half (47%) of all Georgia dialysis facilities and >9000 patients (>5000 black patients)

RaDIANT Trial
[Reducing Disparities In Access to Kidney Transplantation]

• Multicomponent Intervention
  * Project lead (staff member) selected by Med Director at each dialysis facility
    Staff in-service & webinars  
    Patient/Family advisory groups  
    Peer mentor program  
    Performance feedback reports
  
  Root cause analysis for low KT referral
  and/or racial disparity in referral
  Patient/Family educational programs

• Primary outcomes
  – Change in facility-level transplant referral for patients (baseline to 12 months)
  – Reduction in Black versus White disparity in transplant referral (baseline to 12 months)

RaDIANT Trial

- Absolute number of transplant referrals
  - Intervention: 483 to 767 (+59%)
  - Control: 587 to 521 (-11%)

- Intervention had a 75% increased adjusted odds of KT referral over 1-year study period

- Increase in transplant referral by race

KT Evaluation

• Referral is great, but we still need patients to...
  – Initiate KT evaluation in timely manner once referred
  – Complete KT evaluation in timely manner once initiated

• Black, older, lower SES, and rural patients are less likely to initiate and complete KT evaluation

• Financial barriers, KT knowledge, and psychosocial issues implicated in absenteeism at KT evaluation after referral

Schold JD et al. CJASN, 2011
Waterman AD et al. CJASN, 2013
Dageforde LA et al. Transplantation, 2015
Hamoda RE et al., AJT, 2020
Dialysis facility referral and start of evaluation for kidney transplantation among patients treated with dialysis in the Southeastern United States

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Variability in transplant access exists, but barriers to referral and evaluation are underexplored due to lack of national surveillance data. We examined referral for kidney transplantation evaluation and start of the evaluation among 34,857 incident adult (18-79 year) end-stage kidney disease patients from 690 dialysis facilities in...
Percentage of dialysis patients referred for KT (orange) within 1y of dialysis start and percentage of patients who started evaluation (blue) in Georgia, North Carolina, and South Carolina.

- 12 facilities (2%) with no KT referrals within 1y after start of dialysis.
- 35 facilities (5%) with no KT evaluations within 6m after referral.
- Black patients had higher KT referral, but lower KT evaluation start than whites.
- Lower KT referral and KT evaluation start rates in older patients and women.

Patzer RE. et al. AJT. 2020

**34,857 patients from 690 dialysis facilities**
ASCENT Study [Patzer et al. – In progress]

[Allocation System Changes for Equity in Kidney Transplantation]

• 600 dialysis centers in US with low % of patients on KT waiting list
• Control condition vs. Multicomponent Intervention
• Intervention components
  – Webinar for dialysis facility medical directors
  – Educational video for patients
  – Educational video for dialysis facility staff
  – Dialysis facility–specific transplantation performance feedback report
• Primary outcomes
  – Change in wait-listing
  – Wait-listing disparity

Patzer RE. et al. Kidney Int Rep, 2017
A One-Day Centralized Work-up for Kidney Transplant Recipient Candidates: A Quality Improvement Report

Richard N. Formica, Jr, MD, Fidel Barrantes, MD, William S. Asch, MD, PhD, Margaret J. Bia, MD, Steven Coca, DO, Robert Kalyesubula, MD, Barbara McCloskey, RN, DNSc, Tucker Leary, MBA, Antonios Arvelakis, MD, and Sanjay Kulkarni, MD

Background: Waiting time for a kidney transplant is calculated from the date the patient is placed on the UNOS (United Network for Organ Sharing) waitlist to the date the patient undergoes transplant. Time from transplant evaluation to listing represents unaccounted waiting time, potentially resulting in longer dialysis exposure for some patients with prolonged evaluation times. There are established disparities demonstrating that groups of patients take longer to be placed on the waitlist and thus have less access to kidney transplant.

Setting & Participants: 905 patients from a university-based hospital were evaluated for kidney transplant candidacy, and analysis was performed from July 1, 2004, to January 31, 2010.

Original Investigation

Original Investigation

Policy

Community

Organization

Provider

Person and Family
Yale-New Haven QI Initiative

• Lots of good reasons to shrink the time it takes to complete KT evaluation
  – Less likely to have patients fall of evaluation pathway
  – Reduces dialysis exposure
  – Patients get listed (and possibly a transplant) more quickly
  – Reduces burden on program (reduces number of “open or pending” evaluations)

• Yale-NH QAPI process
  – Large variability in time completion of KT evaluation
  – Longer time to complete KT evaluation in minority patients

Formica RN et al. AJKD, 2012
Yale-New Haven QI Initiative

- 1-day evaluation
- Met with referring physicians to educate about listing time problem
- All core specialties seen on same day (med, surg, SW, pharm, etc)
- Chest radiograph, retroperitoneal ultrasound, and labs
- KT educational session
- Dedicated cardiologist who saw patients for clearance within 2 d
- Dedicated colonoscopy slots within 4 d of evaluation
- + other components... see Rich for more details

Formica RN et al. AJKD, 2012
Median days to listing:
- Conventional: 226
- 1-day eval: 46

At 200 days, 80% of patients in 1-day eval were listed vs. only 40% in the conventional group

- Racial disparities eliminated in 1-day in-center model
- Blacks more likely to be placed on wait-list during 1-day center-coordinated process versus conventional-process period

Formica RN et al. AJKD, 2012
Deceased Donor KT

• KT referral, KT evaluation start, and KT evaluation completion are great, but we still need to get patients once on waiting list

• Historical data showing inequities in rates of DDKT
New Kidney Allocation System Associated With Increased Rates Of Transplants Among Black And Hispanic Patients

ABSTRACT Before the 2014 implementation of a new kidney allocation system by the United Network for Organ Sharing, white patients were more likely than black or Hispanic patients to receive a kidney transplant. To determine the effect of the new allocation system on these
• **22 months post-KAS**
  – Decrease in KT rate for whites
  – Substantial increase in KT rate for blacks and Hispanics

Average monthly percentages of waitlisted US patients who received a deceased-donor kidney transplant

• Impact on blacks and Hispanics relatively uniform across OPO regions

Melanson T et al., Health Aff, 2017
Living Donor KT

• KT referral, KT evaluation start, KT evaluation completion, and DDKT are great, but we all know that LDKT is best treatment option

• Historically lower rates of LDKT in black, older, and lower SES patients

Rodrigue JR et al. Transplantation, 2013
Gill J et al. JASN, 2015, 2018
LDKT rate for every 100 new waitlist candidates, U.S., by race

![Graph showing LDKT rate for every 100 new waitlist candidates by race from 1996 to 2019. The graph is divided into five periods: 1996 to 2000, 2001 to 2005, 2006 to 2010, 2011 to 2015, and 2016 to 2019. The rates are shown for White, Black, Hispanic, and Asian patients. The rates for each race vary across the periods, with White patients generally having the highest rates.]
Hispanic/Latino Disparities in Living Donor Kidney Transplantation: Role of a Culturally Competent Transplant Program

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Northwestern Hispanic Transplant Program

• Launched in 2006 to address needs of growing underserved Hispanic population in Chicago

• Culturally targeted by...
  – employing bicultural and bilingual staff
  – using Spanish in patient/family-provider communications and written materials
  – addressing commonly shared Hispanic cultural values, beliefs, misconceptions, and information needs of Hispanic ESKD patients and potential living donors

Gordon EJ et al. Transplant Direct, 2015
Northwestern Hispanic Transplant Program

Pre-HTP (2001-2006) vs. post-HTP (2008-2013)

• Wait-list additions...
  – Hispanics: +91% (277 to 529) / Non-Hispanic whites: +4% (1426 to 1485)
  – Regional (Hispanics): +32%

• Kidney transplant recipients...
  – Hispanics: +70% (150 to 255) / Non-Hispanic whites: +5% (754 to 792)
  – Regional (Hispanics): +25%

• Live donor kidney transplant recipients...
  – Hispanics: +74% (100 to 174) / Non-Hispanic whites: +6% (491 to 521)
  – Regional (Hispanics): -13%
A complex culturally targeted intervention to reduce Hispanic disparities in living kidney donor transplantation: an effectiveness-implementation hybrid study protocol

Ellsa J. Gordon, Jungwha Lee, Raymond H. Kang, Juan Carlos Caicedo, Jane L. Holz, Daniela R. Ladner, and Michelle D. Shurnate

Abstract

Background: The shortage of organs for kidney transplantation for patients with end-stage renal disease (ESRD) is magnified in Hispanics/Latin Americans in the United States. Living donor kidney transplantation (LDKT) is the treatment of choice for ESRD. However, compared to their representation on the transplant waitlist, fewer Hispanics receive a LDKT than non-Hispanic whites. Barriers to LDKT for Hispanics include: lack of knowledge, cultural concerns, and language barriers. Few interventions have been designed to reduce LDKT disparities. This study aims to reduce Hispanic disparities in LDKT through a culturally targeted intervention.

Methods/Design: Using a prospective effectiveness-implementation hybrid design involving pre-post intervention evaluation with matched controls, we will implement a complex culturally targeted intervention at two transplant centers in Dallas, TX and Phoenix, AZ. The goal of the study is to evaluate the effect of Northwestern Medicine's Hispanic Kidney Transplant Program's (HKTP) key culturally targeted components (outreach, communication, education) on Hispanic LDKT rates over five years. The main hypothesis is that exposure to the HKTP will reduce disparities by increasing the ratio of...

Jayme E. Locke, MD,1 Rhiannon D. Reed, MPH,1 Vineta Kumar, MD,1 Beverly Berry, MA,1 Daagya Hendricks, MBA,1 Alexis Carter, BS,1 Brittany A. Shelton, MPH,1 Margaux N. Mustian, MD,1 Paul A. MacLennan, PhD,1 Haley Qu, PhD,1 Lonnie Hannon, PhD,2 Clayton Yates, PhD,2 and Michael J. Hanaway, MD1

Background. To date, no living donation program has simultaneously addressed the needs of both transplant candidates and living donors by separating the advocacy role from the candidate and improving potential donor comfort with the evaluation process. We hypothesized that the development of a novel program designed to promote both advocacy and...
UAB Living Donor Navigator Program

• Advocacy training adapted from JHU Live Donor Champion Program
  – Live donor advocate – friend, family member, or community member
  – Trained to spread awareness of ESRD, LDKT, donation, and patient’s story
  – 4 educational session over 2 months

• Systems training
  – Educate advocate on evaluation process
  – Make contact with donor candidates after passing screening
  – Provide social support, knowledge of local resources for lab draws, radiology, etc., and answer questions regarding what to expect during evaluation process
  – Meet donor candidates for evaluation and provide “concierge style service”

Locke JE et al., Transplantation, 2020
UAB Living Donor Navigator Program

- Compared with standard care, patients in LDN program had...
  - 9-fold increased likelihood of LD screenings
  - 7-fold increased likelihood of having an approved LD

- Black patients in LDN program ...
  - 8-fold more likely to have a donor screened, compared to black standard care patients
  - 7-fold more likely to have a donor approved, compared to black standard care patients
  - higher likelihood of screened donors, compared to white patients
  - similar likelihood of having an approved donor, compared to white patients

- LDN shows potential to mitigate disparities in access to LDKT

Locke JE et al., Transplantation, 2020
A Randomized Trial of a Home-Based Educational Approach to Increase Live Donor Kidney Transplantation: Effects in Blacks and Whites

James R. Rodrigue PhD, Danielle L. Cornell RN, BSN, Bruce Kaplan MD, Richard J. Howard MD, PhD
Transplant House Calls

- Train transplant health educators
- KT, LDKT, and LD educational session in home
- 1 to 2 hours, informal and flexible
- Guests – social network members
- Required content, but flexible delivery

Rodrigue JR et al. AJT, 2007
Rodrigue JR et al. Transplantation, 2014
≥1 Donor Inquiry  
 Clinic only: 72%  
 Clinic + House Call: 87%  

≥1 Donor Eval  
 Clinic only: 47%  
 Clinic + House Call: 72%  

LDKT  
 Clinic only: 42%  
 Clinic + House Call: 59%  

White  
 Clinic only: 72%  
 Clinic + House Call: 52%  

Black  
 Clinic only: 77%  
 Clinic + House Call: 48%  

Rodrigue JR et al., AJKD. 2008
More LDKT Access Strategies

Strategies for Increasing Knowledge, Communication, and Access to Living Donor Transplantation: an Evidence Review to Inform Patient Education

Authors

A Scoping Review for Strategies to Increase Living Kidney Donation

Liamo Ramleh,1 David Collier,2 Braden Manns,3 Ngiem N. Lam,4 Soroosh Shojaie,4 Diane Lorenzo,1,4 John S. Gill,1 and Scott Kovesdy*

Abstract
Background and objectives The literature on strategies to increase the number of potential living kidney donors is extensive and has yet to be characterized. Scoping reviews are a novel methodology for systematically assessing a wide breadth of a given body of literature and may be done before conducting a more targeted systematic review.

Design, setting, participants, & measurements We performed a scoping review and summarized the evidence for existing strategies to increase living kidney donation.

Results Our review identified seven studies that tested interventions using rigorous methods (i.e., randomized, controlled trials) and outcome measures, all of which focused on using education targeted at potential recipients to increase living donation. Of these, two studies that targeted the potential recipients’ close social network reported statistically significant results. Other interventions were identified, but their effect was assessed through quasi-experimental or observational study designs.

Conclusions We identified an important gap in the literature for evidence-based strategies to increase living kidney donation. From the limited data available, strategies directed at potential recipients and their social networks are the most promising. These results can inform transplant programs that are considering strategies to increase living kidney donation and highlight the need for conduct of high-quality study to increase living donation.

Conclusions & Reflections

• Much brighter spotlight on KT disparities and inequities in last two decades
• Early research focused on identifying disparities and correlates (1\textsuperscript{st} Generation)
• More recent research addressing causal explanations for KT disparities and inequities (2\textsuperscript{nd} Generation)
• Major gap in solutions to attenuate inequities in KT (3\textsuperscript{rd} Generation)
Conclusions & Reflections

• Promising patient and system-level interventions
  – Limited in scope (program = common, regional = rare, national = none)
  – No sustainability beyond grant funding

• Limited use of potentially relevant cross-over interventions from other fields

• Focused largely on improving outcomes for populations affected (e.g., blacks), versus improving outcomes relative to reference group (e.g., whites)
Conclusions & Reflections

• Attenuating inequities is difficult and time-consuming
• Requires substantial funding, national engagement, and sustained focus
• Adopt KT equity as a strategic priority
  – OPTN has done this, but we need to do this at a program level
• Continue to develop partnerships among key stakeholders
What’s Next?

• KT Equities Task Force?
  – Collaborative venture with key stakeholders
  – 5 core goals to establish a roadmap for reducing disparities and increasing equity in KT access
KT Equities Task Force

1. Review evidence of inequities in KT
2. Review evidence of effective interventions to attenuate inequities in KT
3. Identify barriers to deploying effective interventions to reduce KT inequities
4. Provide recommendations to reduce KT inequities
5. Work with stakeholders to issue RFAs for implementation development, evaluation, dissemination, and adoption
“Of all of the forms of inequality, injustice in health is the most shocking and the most inhumane.”

Martin Luther King, Jr.