

Where do we go from here?

A path to reduce the demand for transplant tourism

BC Kidney Days 2012
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Reality #1: Organ trafficking is bad



Vendor Characteristics

Table 1: Demographics of vendors and control donors

Parameter	Kidney vendors (n = 104)	Control donors (n = 184)	p-Value
Nephrectomy duration (Months)	33.89 ± 30.0	32.01 ± 29.71	0.601
Age (years)	30.55 ± 8.17	30.65 ± 7.85	0.919
Male:Female	85:19 (4.5:1)	149:35 (4.2:1)	
Age males (years)	30.8 ± 8.0	30.75 ± 7.2	0.895
Age females (years)	29.2 ± 8.9	29.98 ± 8.6	0.660
Occupation			
White collar job	0 (0%)	20 (11.0%)	0.0001
Self-employed	12 (11.5%)	36 (19.5%)	0.079
Skilled worker	10 (9.6%)	89 (48.3%)	0.0001
Housewife	10 (9.6%)	20 (11.0%)	0.738
Student	0 (0%)	2 (1.0%)	0.286
Laborer	0 (0%)	9 (4.8%)	0.020
Bonded labor	67 (64%)	0 (0%)	0.0001
Unemployed	5 (4.8%)	8 (4.3%)	0.857
Monthly income \$ US			
< 50	89 (85%)	0 (0%)	0.0001
50–100	10 (10%)	6 (3%)	0.020
100–200	4 (4%)	97 (53%)	0.0001
> 200	1 (1%)	81 (44%)	0.0001

- Vendors' self-reported co-morbidities
 - jaundice 7.8%
 - malaria 5.7%
 - stone disease in 2%
 - UTI in 5%

Vendor outcomes

Table 2: Postnephrectomy complaints and complications

Complaint	Kidney vendors (n = 104)	Control donors (n = 184)	p-Value
Physical weakness	71 (68.3%)	4 (2.1%)	0.0001
Fatigue	11 (10.5%)	0 (0%)	0.0001
Fever	35 (33.7%)	4 (2.1%)	0.0001
Pain at site of surgery	61 (58.7%)	20 (11%)	0.0001
Urinary tract symptoms	50 (48.1%)	6 (3.2%)	0.0001
Dyspepsia	14 (13.4)	4 (2.1%)	0.0001
Loss of appetite	10 (9.6%)	0 (0%)	0.0001
Depression	5 (4.8%)	1 (0.5%)	0.010

Table 5: Laboratory findings in vendors and controls

Parameter	Kidney vendors (n = 104)	Control donors (n = 184)	p-Value
Hemoglobin gm / dL	14.09 ± 1.8	14.21 ± 1.36	0.268
PCV	41.96 ± 6.0	41.4 ± 3.5	0.351
Leukocyte count / cmm	8684 ± 1867	8327 ± 2137	0.52
Platelets × 10 ⁹ /L	223.2 ± 62.7	227.1 ± 177.2	0.0001
Creatinine mg/dL	1.17 ± 0.21	1.02 ± 0.27	0.0001
Random blood glucose mg/dL	93.02 ± 20.6	99.0 ± 14.2	0.0005
GFR by Cockcroft-Gault mL/min	70.94 ± 14.2	95.4 ± 20.44	0.0001
< 60	27 (23.9%)	5 (2.7%)	0.0001
60 – 90	68 (65.4%)	69 (37.5%)	0.0001
91 – 120	9 (8.7%)	110 (59.8%)	0.0001
Urine protein/creatinine ratio	0.15 ± 0.11	0.10 ± 0.10	0.0001
0–0.1	37 (36.3%)	136 (73.9%)	0.0001
0.1–0.2	49 (47.1%)	33 (18.0%)	0.0001
0.2–0.3	10 (9.6%)	11 (5.9%)	0.25
>0.3	8 (7.7%)	4 (2.1%)	0.02
ALT IU/L	26.6 ± 21.3	28.17 ± 17.0	0.01
AST IU/L	38.2 ± 18.4	27.0 ± 12.34	0.0001
Deranged liver functions	14 (13.4%)	5 (8.7%)	0.02
Anti-HCV positive	25 (24%)	2 (1.0%)	0.0001
HbSAg reactive	4 (3.8%)	1 (0.5%)	0.04
Anti-HCV + HbSAg positive	2 (1.9%)	0 (0.%)	0.059

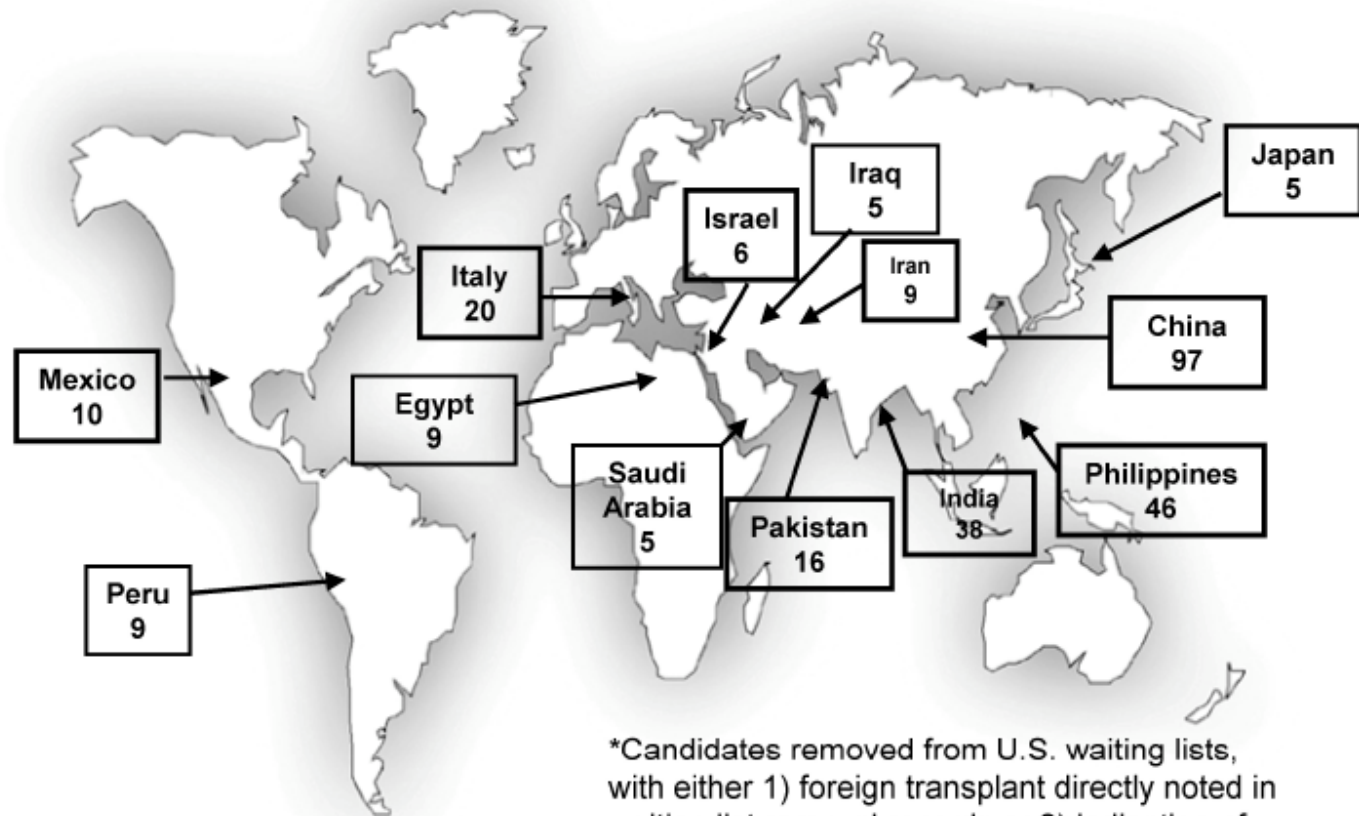
Compared to living related kidney donors

Vendors had:

- More symptoms
- Higher creatinine
- More proteinuria
- More HCV
- More HBV

Reality #2

Travel for transplantation usually involves organ trafficking..it should not be lumped with medical tourism



*Candidates removed from U.S. waiting lists, with either 1) foreign transplant directly noted in waiting list removal records or 2) indication of transplant at other than the listing center with confirmation of foreign transplant by listing center

Source: SRTR Analysis, August 2007

Reality #3

Transplant tourism is NOT the best therapy for our patients

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Short communication

Invasive filamentous fungal infections associated with renal transplant tourism

Outcomes of Commercial Renal Transplantation: A Canadian Experience

G.V. Ramesh Prasad,^{1,2} Ashutosh Shukla,¹ Michael Huang,² R. John D'A Honey,^{2,3}
and Jeffrey S. Zaltzman^{1,2,4}

52% had opportunistic infections, with 2 deaths from fungal related infections

Transplant Tourism: Outcomes of United States Residents Who Undergo Kidney Transplantation Overseas

Muna T. Canales,^{1,3} Bertram L. Kasiske,^{1,2} and Mark E. Rosenberg¹

4/10 had “life-threatening” infections, with 1 infectious death

Table 6. Infectious complications after transplantation^a

Complication	Tourist (n [%]; n = 33)	Matched Cohort (n [%]; n = 66)
Total	17 (52.0) ^b	32 (48.5) ^b
Viral	12 (36.0)	9 (13.6)
CMV	10 (30.0)	8 (12.1)
HBV	1 (3.0)	0
HSV	1 (3.0)	0
EBV	0	0
VZV	0	1 (1.5)
Bacterial	7 (21.0)	21 (31.2)
pneumonia	1 (3.0)	5 (7.6)
UTI	4 (12.0)	14 (21.2)
wound	2 (6.0) ^c	2 (3.0)

^aEBV, Epstein-Barr virus; HBV, hepatitis B virus; HSV, herpes simplex virus; VZV, varicella zoster virus.

^bTotal number of patients with at least one infection (includes patients with multiple infections).

^cPerinephric abscess and peripancreatic abscess.

Graft outcomes

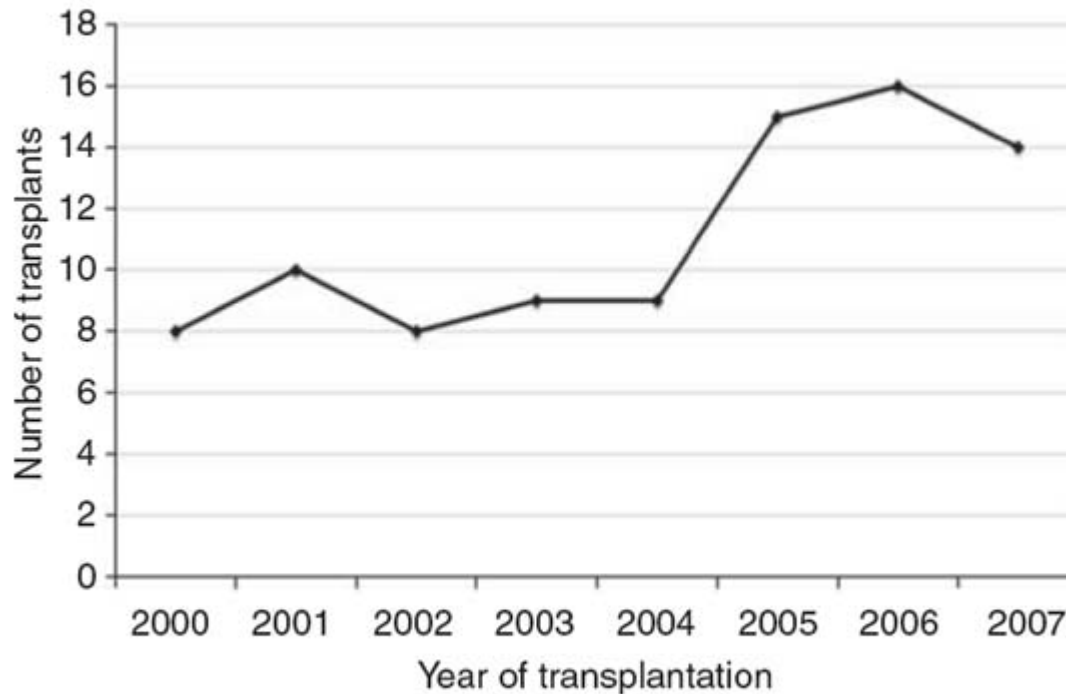
Table 4. Graft and patient outcomes of tourists and all patients who underwent transplantat

Parameter	Tourist (<i>n</i> = 33)	UCLA (<i>n</i> = 2507)	<i>P</i>
Acute rejection at 1 yr (%) ^c	30	15.4	0.019
Serum creatinine level after transplantation (mean ± SD)			0.183
1 mo	1.57 ± 1.10	N/A	
6 mo	1.43 ± 0.63	N/A	
1 yr	1.27 ± 0.38	1.45 ± 0.57	
Graft survival at 1 yr (%)	89.3	94.0	0.754
Patient survival at 1 yr (%)	100.0	96.4	0.466

Reality #4

Some of our patients perceive TT as a legitimate option

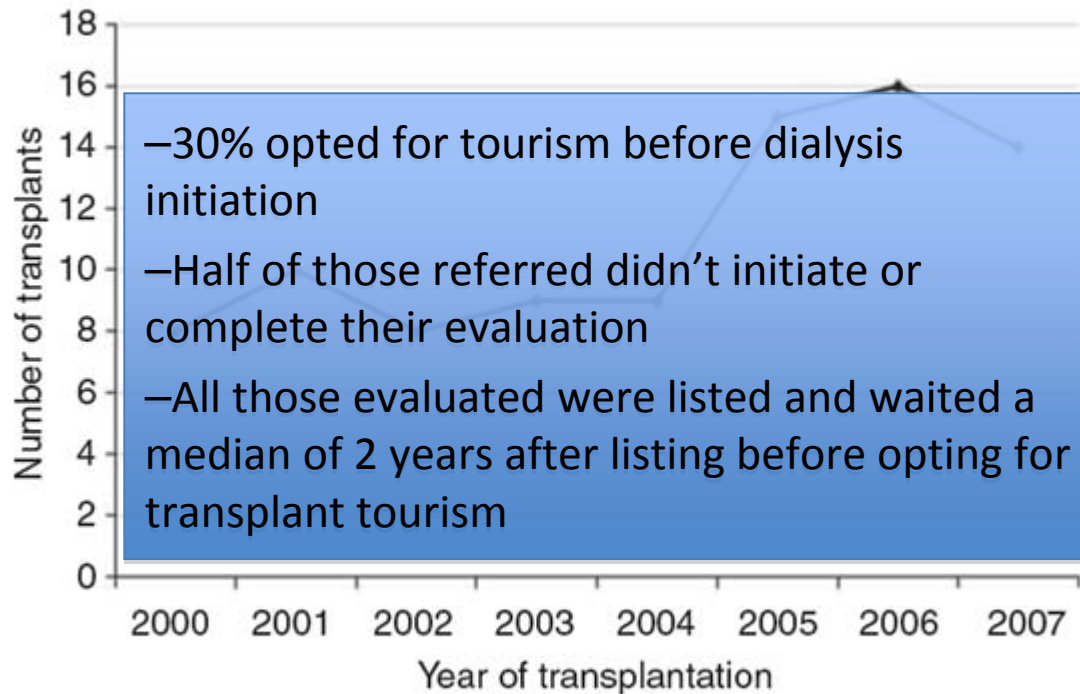
Vancouver (2000-2008), n=93



Reality #4

Some of our patients perceive TT as a legitimate option

Vancouver (2000-2008), n=93



Reality #5

- This is a problem the renal community has to address

Challenge

- What is our goal?
- What are the responsibilities of the renal community?
- Can we really change our patients' behaviours?
- How do we move this discussion forward to meet these goals?

What is the goal?

- To eliminate transplant tourism

What is the goal?

- To eliminate transplant tourism
- To eliminate the demand for transplant tourism

Responsibilities of the renal community

- Identify patients at risk
- Be proactive in reducing the impetus to opt for transplant tourism
 - Bring this up with patients
 - Reinforce the down sides (and our objection)
 - Highlight legitimate alternatives
 - Help facilitate alternatives

Who is at risk?

Table 1 | Characteristics of transplant tourists and comparison with adult first kidney only transplant recipients in BC during the study period

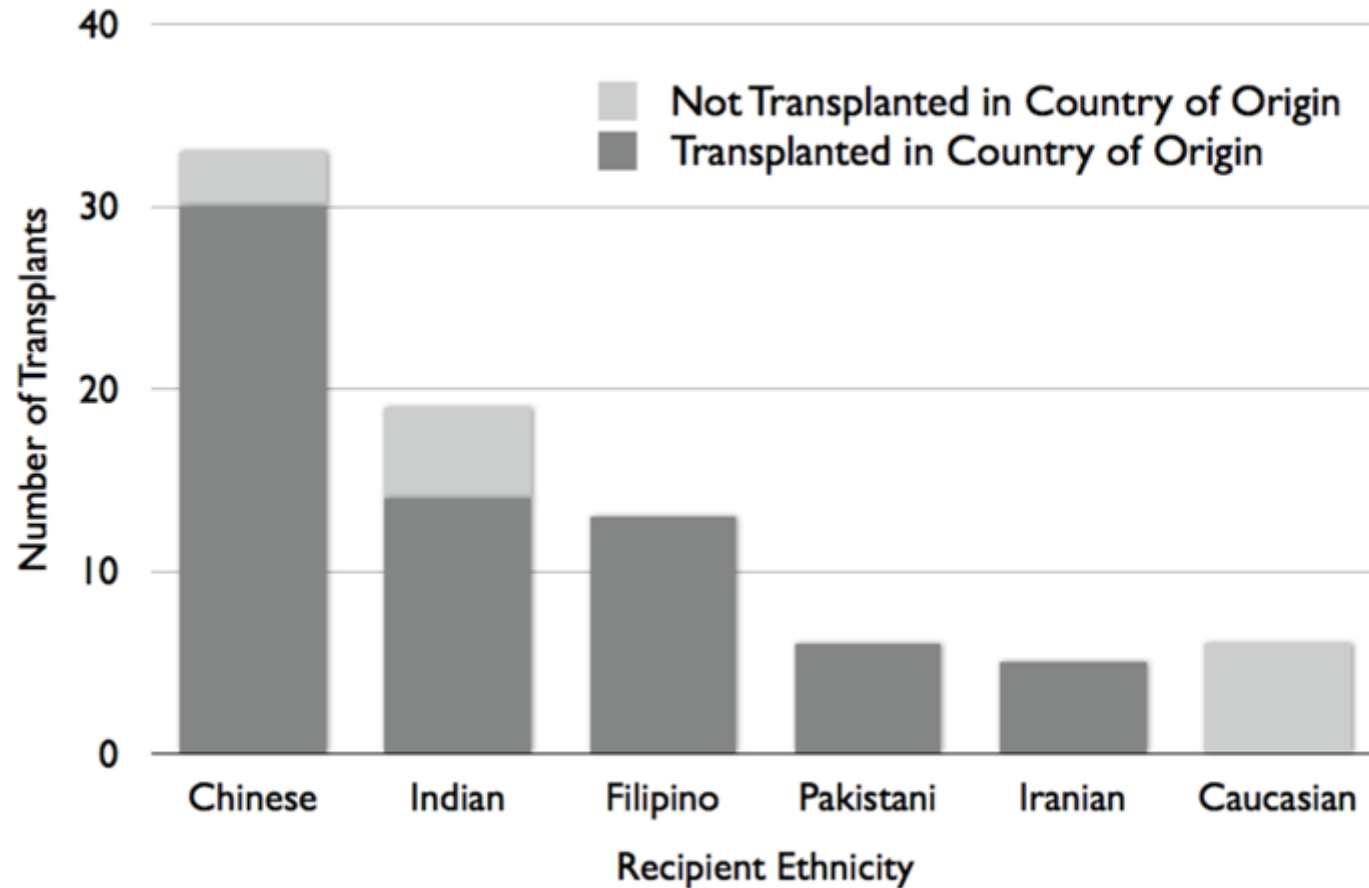
	Tourists (n=93)	Transplanted in BC (n=1217)	P-value
Mean age (years)	53 ± 11.3	49 ± 6.8	<0.01
Female gender (%)	43	38	0.09
<i>Donor type (%)</i>			<0.01
Deceased	27	41	
Living	40	59	
Unknown	33	0	
Mean dialysis exposure (months)	27 ± 20	65 ± 34	<0.01
Preemptive transplantation (%)	29	21	
ESRD because of diabetes (%)	26	13.3	<0.01
<i>Ethnicity</i>			<0.01
Caucasian	9.7	67.3	
East Asian ^a	43.0	13.6	
South Asian ^b	26.9	9.0	
Filipino	14.0	4.8	
Black	0	0.8	
Other	6.5	0.4	

Abbreviations: BC, British Columbia; ESRD, end-stage renal disease.

^aEast Asian (Chinese, Japanese, Korean, and Taiwanese).

^bSouth Asian (Indian, Pakistani, Sri Lankan, and Bangladeshi).

Most transplant tourists are from ethnic minority populations



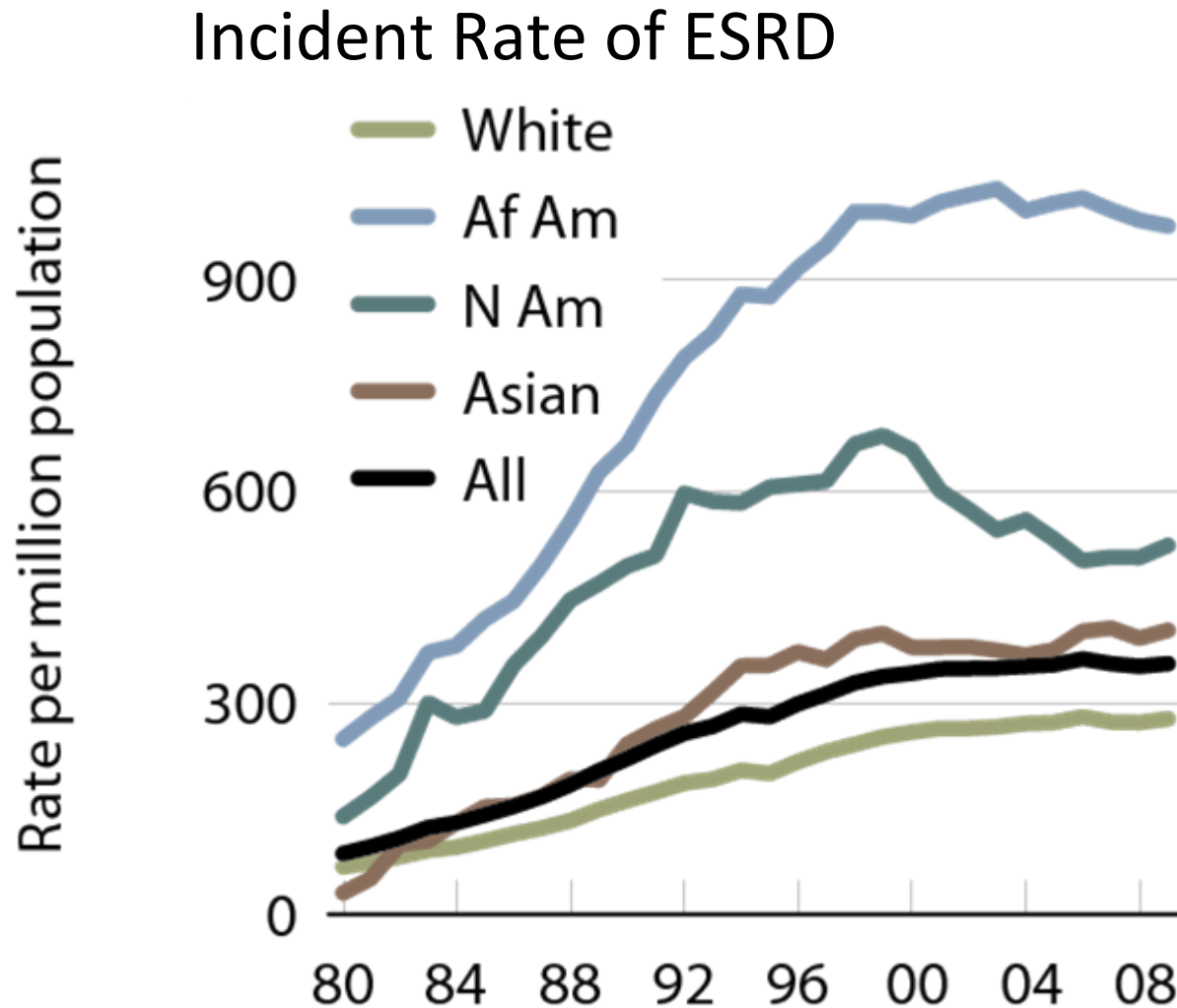
Immigrant populations are at higher risk for transplant tourism

TABLE 2. Region of birth of recipients and countries where transplants were performed, January 1998 to February 2005

Region of birth (n=20)		Region of transplantation (n=22)	
Middle East	5	South Asia	12
South Asia	5	East Asia	5
Africa	4	Middle East	4
East Asia	3	Southeast Asia	1
Southeast Asia	2		
North America	1		

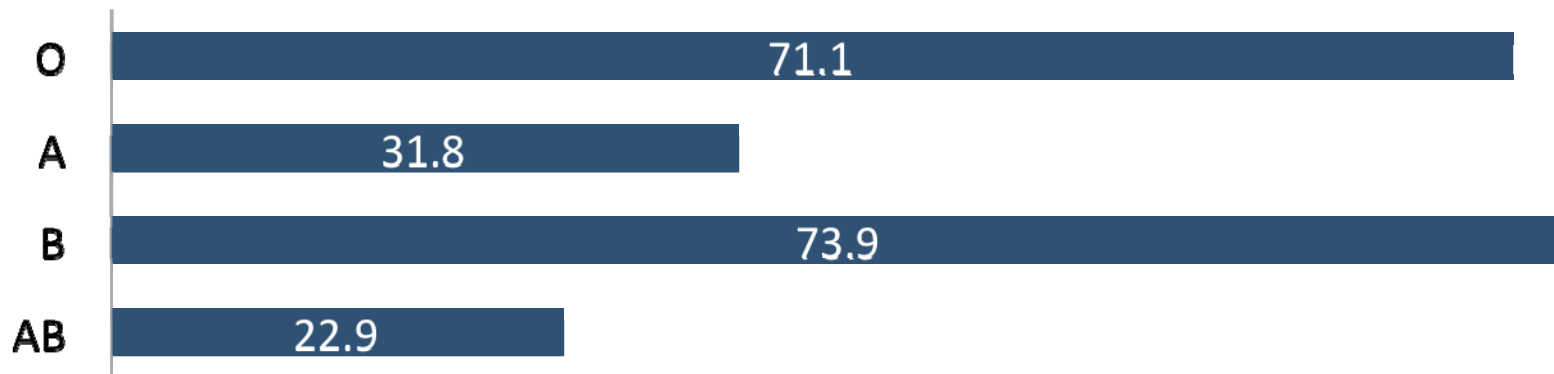
Why are ethnic minorities at higher risk?

The demand for transplant is greater



Wait-times are longer

Median Wait (months) for 1st DDK transplant in BC*



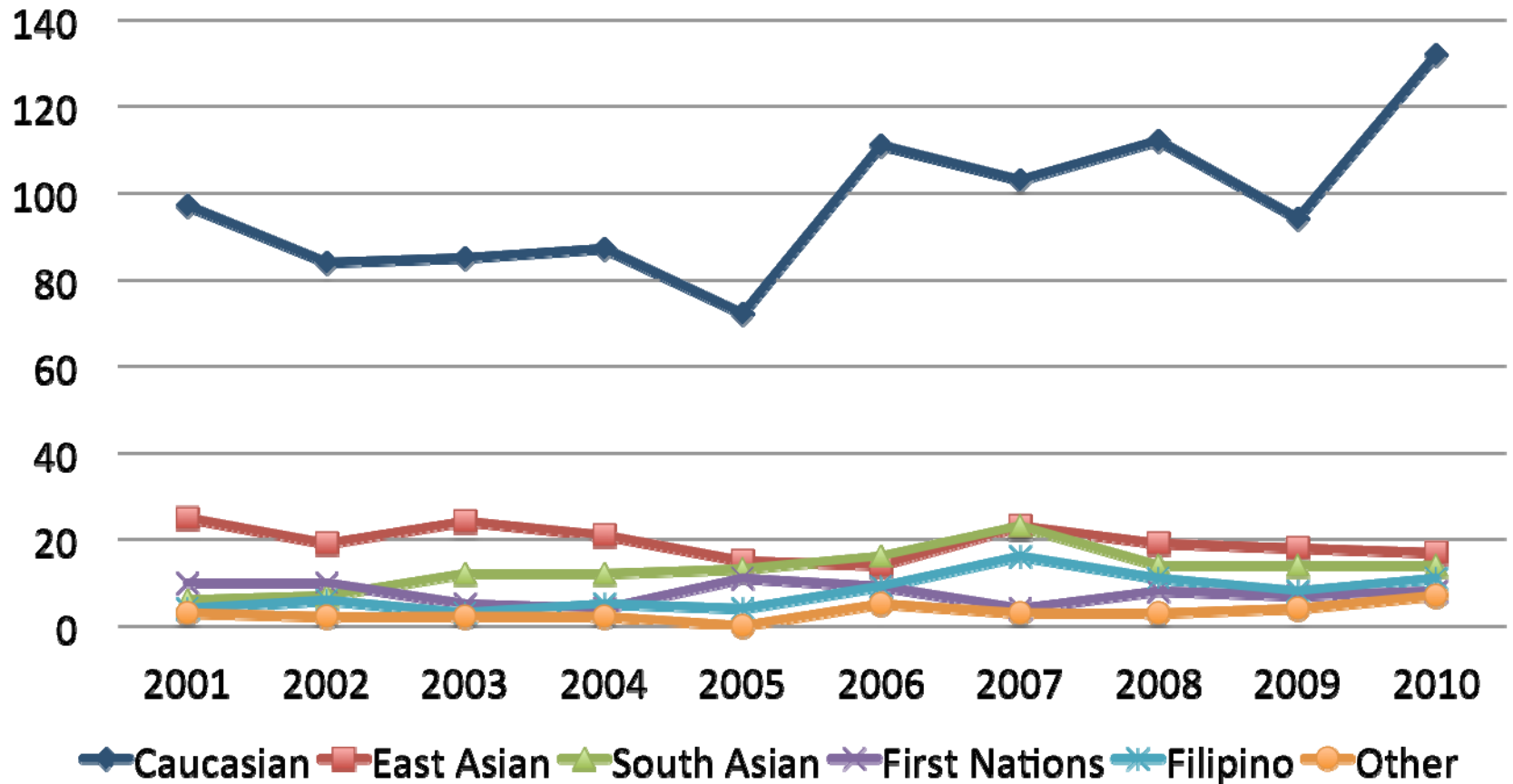
Cohort of incident dialysis patients in Canada *n* (%)

	East Asian	Indo Asian	White	<i>P</i> -value
<i>Blood group type</i>				
O	312 (41)	157 (35)	5948 (45)	< 0.0001
A	212 (28)	113 (25)	5405 (41)	< 0.0001
B	178 (23)	150 (33)	1436 (11)	< 0.0001
AB	58 (8)	35 (8)	536 (4)	< 0.0001

*Data Source: BCT - WT reflects median duration of dialysis prior to transplantation among transplanted patients in 2011
Tonelli et al. KI 2007

No increase in transplantation

Number of transplants, by ethnicity

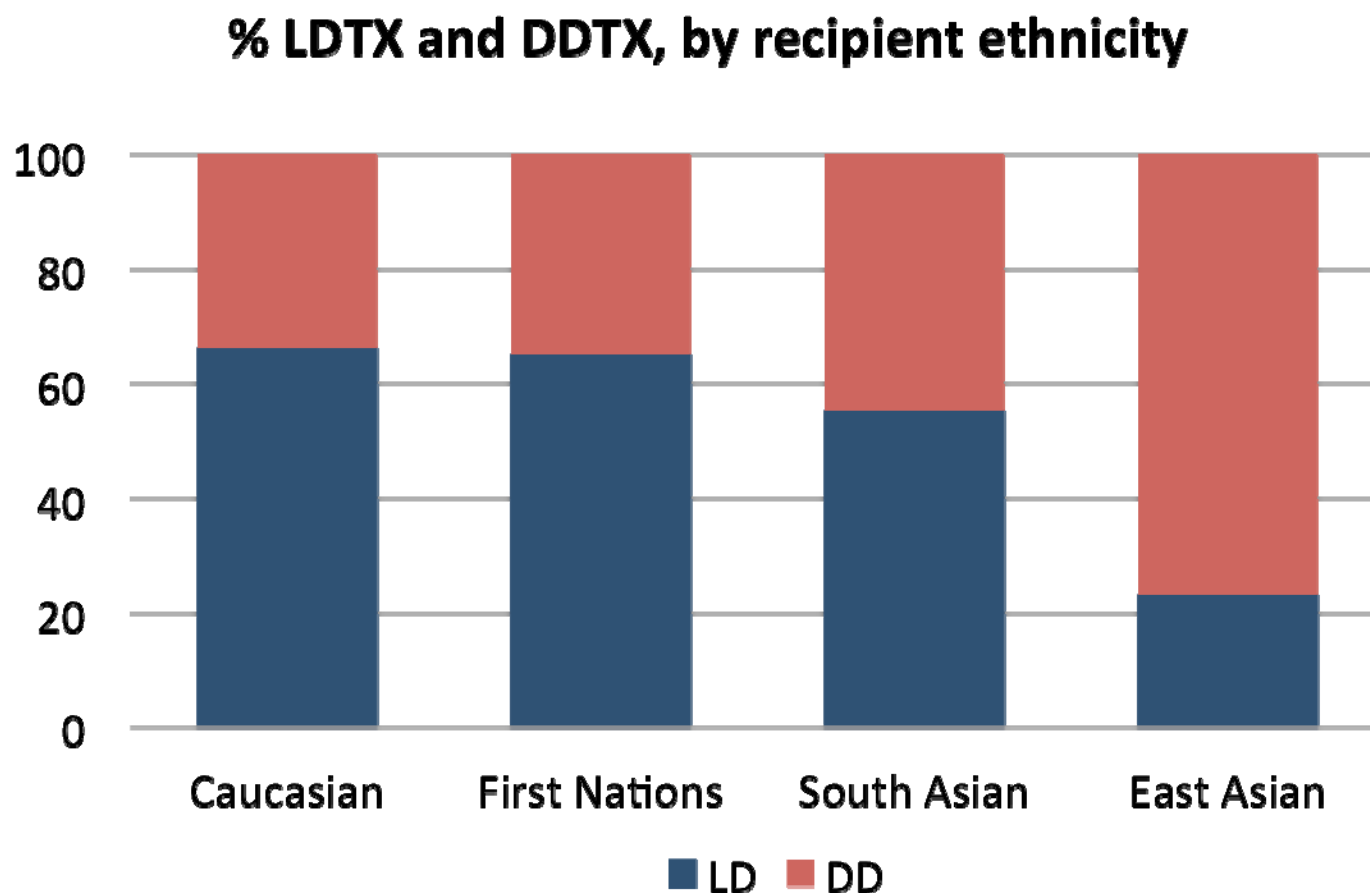


Asian ESRD patients have reduced access to deceased donor transplantation

Table 2 | Transplantation by race

	Any transplant		
	<i>N</i> (%)	Age-adjusted HR (95% CI)	Adjusted ^a HR (95% CI)
East Asian	380 (31)	0.88 (0.79, 0.97)	0.71 (0.63, 0.79)
Indo Asian	203 (28)	0.69 (0.60, 0.80)	0.69 (0.60, 0.80)
White	4841 (25)	1.0	1.0

LD transplants are less common in Asians



*Based on SPH transplants 2000-2008

Ethnic disparities most marked for access to Living donor transplantation

Table 2 | Transplantation by race

	Any transplant			Deceased donor transplant only			Living donor transplant only		
	N (%)	Age-adjusted HR (95% CI)	Adjusted ^a HR (95% CI)	N (%)	Age-adjusted HR (95% CI)	Adjusted ^a HR (95% CI)	N (%)	Age-adjusted HR (95% CI)	Adjusted ^a HR (95% CI)
East Asian	380 (31)	0.88 (0.79, 0.97)	0.71 (0.63, 0.79)	335 (27)	1.03 (0.92, 1.15)	0.90 (0.80, 1.01)	45 (3.6)	0.42 (0.31, 0.56)	0.27 (0.20, 0.37)
Indo Asian	203 (28)	0.69 (0.60, 0.80)	0.69 (0.60, 0.80)	163 (22)	0.74 (0.63, 0.87)	0.82 (0.70, 0.97)	40 (5.4)	0.55 (0.40, 0.75)	0.42 (0.31, 0.58)
White	4841 (25)	1.0	1.0	3576 (18)	1.0	1.0	1265 (6.5)	1.0	1.0

East Asians are 73% less likely to undergo LDKT

South Asians are 58% less likely to undergo LDKT

We need to better characterize patients at risk for transplant tourism

- Identify patients with a high willingness to consider transplant tourism
 - Detailed sociodemographic characteristics
 - Understand their knowledge/perception on the risks of transplant tourism
 - Understand their barriers to local transplantation
 - Understand barriers to pursue living donor transplantation locally

There are multiple opportunities to intervene

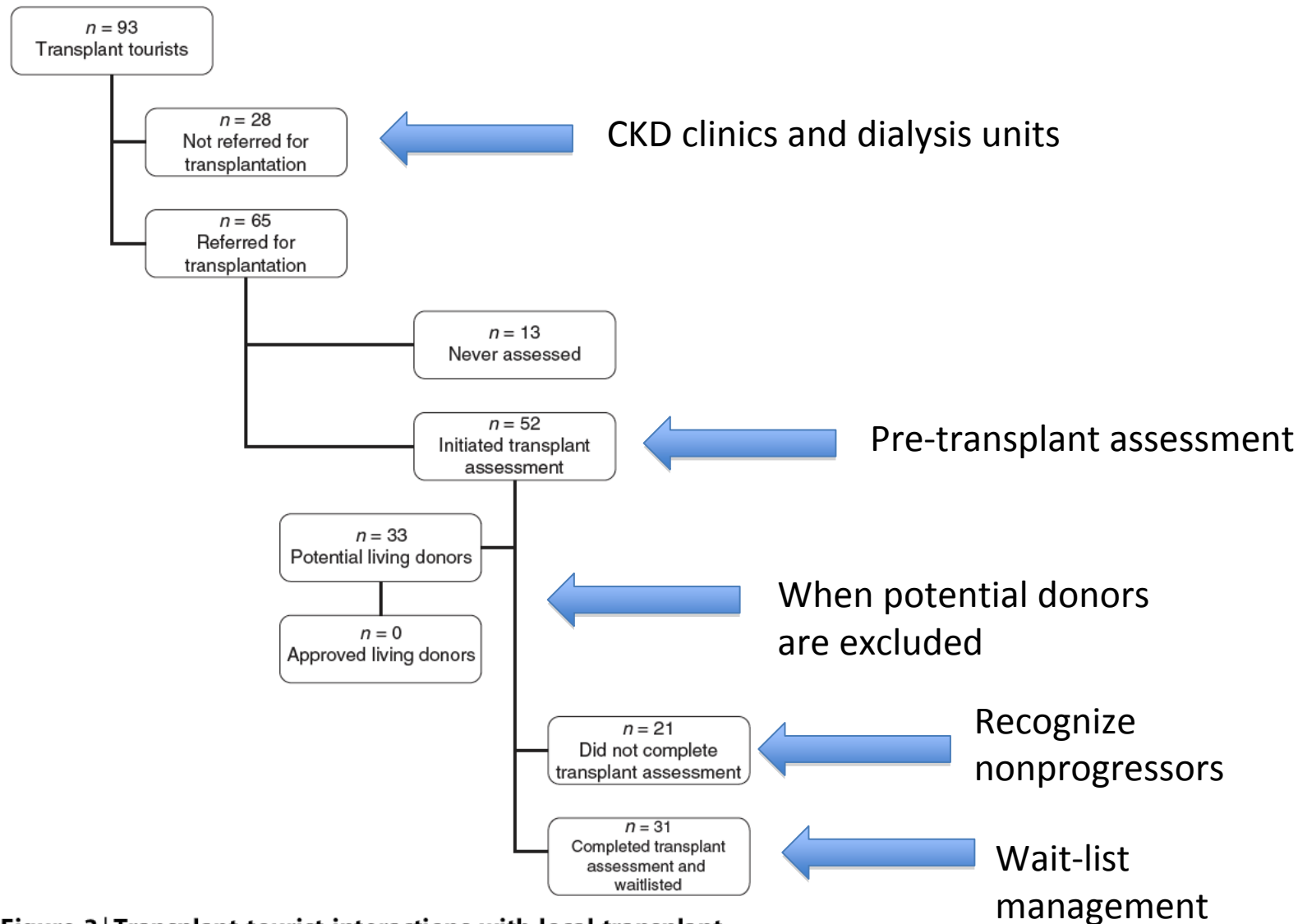


Figure 3 | Transplant tourist interactions with local transplant program and potential living donors.

What is the intervention?

- Focused on increasing the pursuit of living donor kidney transplantation
 - This is where the greatest ethnic disparities exist
 - It is most amenable to patient-level intervention
 - It is the best therapy available

Interventions to increase the pursuit of LDKT have been effective in other marginalized populations

*American Journal of Transplantation 2007; 7: 394–401
Blackwell Munksgaard*

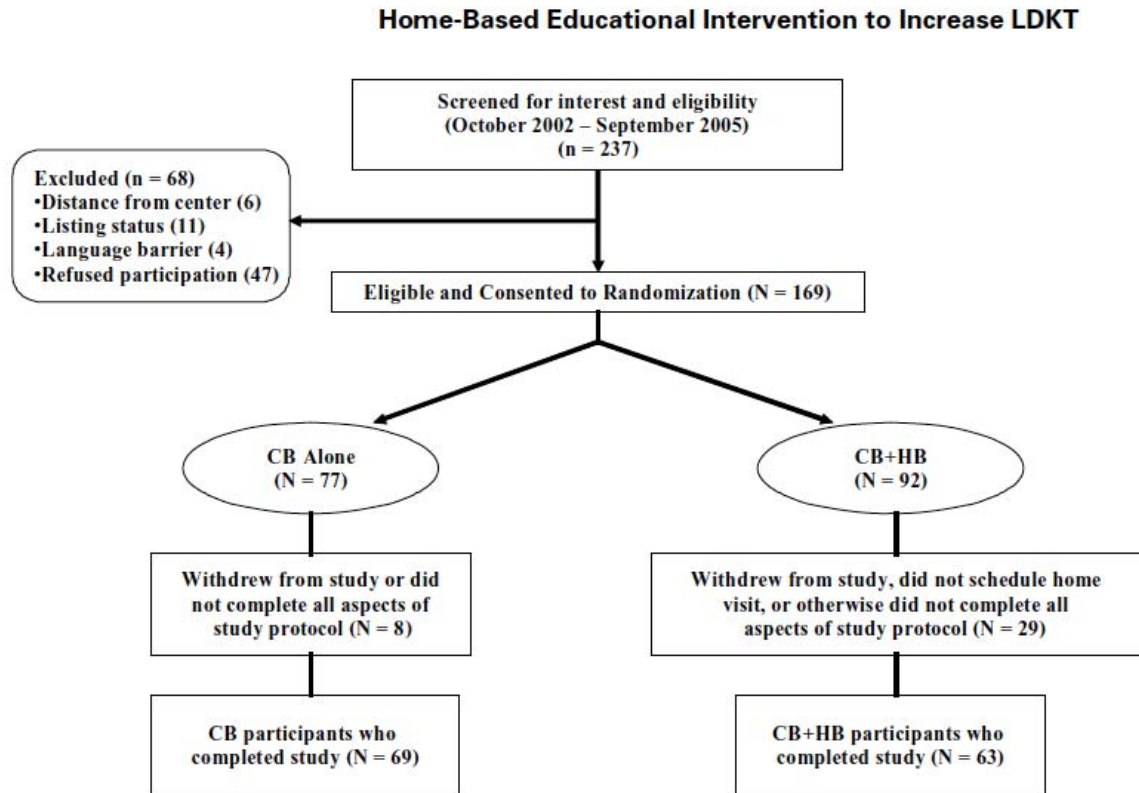
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doi: 10.1111/j.1600-6143.2006.01623.x

Increasing Live Donor Kidney Transplantation: A Randomized Controlled Trial of a Home-Based Educational Intervention

J. R. Rodrigue^{a,*}, D. L. Cornell^b, J. K. Lin^c,
B. Kaplan^d and R. J. Howard^e

Single Center prospective randomized trial at the University of Florida



Clinic Based

- brief discussion with MD
- 60 minute group education session
- Written materials

Home Based

- ‘guest list’ generated at the CB visit
- Written materials on the HB intervention
- 60-90 minute interactive session by 1-2 nurse educators within 6 weeks

Table 1: Primary content of the HB education session

Benefits of transplantation before dialysis (or as soon as possible after dialysis)
Relationship between dialysis time and transplant outcomes
Average waiting times for transplantation
Transplant evaluation process
Types of transplant and donors (deceased donor, including standard criteria, expanded criteria, and donation after cardiac death; living donor)
Transplant outcomes
Current deceased donation rates
Differences in donation rates (living and deceased) by race
Living donor evaluation process
Living donor eligibility criteria
Living donor surgery (open, laparoscopic)
Typical donor recovery
Risks of living donation
Benefits of living donation
Common donor concerns
Common recipient concerns
Possible indirect costs
Helpful resources for transplant patients
Helpful resources for living donors
Transplant center contact information

More donor inquiries, donor evaluations, and LDKT with HB education

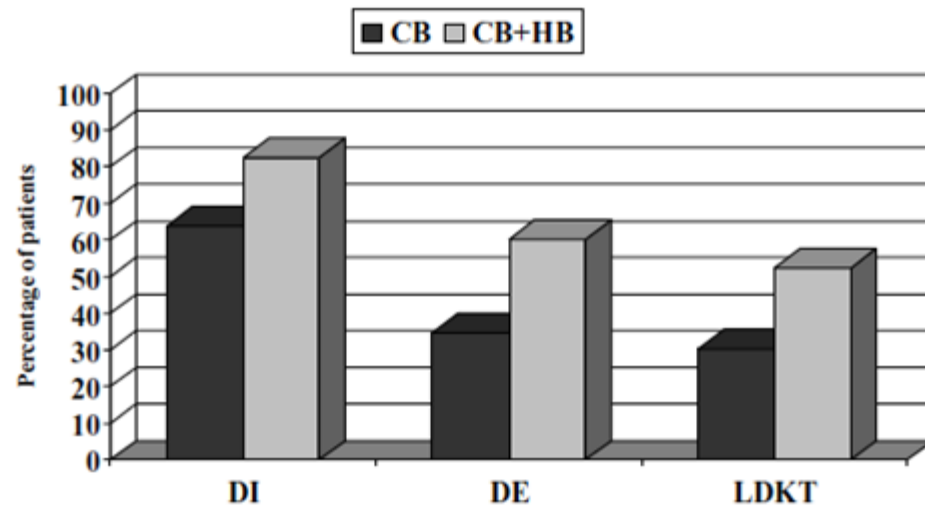


Figure 2: Percentage of patients with living donor inquiries (DI), living donor evaluations (DE) and live donor kidney transplant (LDKT).

African Americans: %LDKT 13.8% in CB vs 45.2% in CB+HB

The interventions need to target culture-specific barriers

- Potential barriers to LDKT in South and East Asian populations
 - Concern about donor safety (lack of knowledge on safety of kidney donation)
 - Lack of knowledge on benefits of LDKT
 - Discomfort discussing their illness within their community
 - Less willing to approach certain potential donors (eg. children)
 - Fear/presumption that no one will come forward
 - Mistrust of the health care system
 - Viewing transplant tourism as a safe and viable alternative to LDKT

Protocol of a Randomized Controlled Trial of Culturally Sensitive Interventions to Improve African Americans' and Non-African Americans' Early, Shared, and Informed Consideration of Live Kidney Transplantation: The talking about Live Kidney Donation (TALK) study

L Ebony Boulware^{1,2,3*}, Felicia Hill-Briggs^{1,3,4}, Edward S Kraus⁵, J Keith Melancon⁶, Raquel McGuire⁷, Bobbie Bonhage⁷, Mikiko Senga³, Patti Ephraim^{2,3}, Kira E Evans³, Brenda Falcone⁷, Misty U Troll^{1,3}, Nicole Depasquale⁴ and Neil R Powe⁸

Abstract

Background: Live kidney transplantation (LKT) is underutilized, particularly among ethnic/racial minorities. The effectiveness of culturally sensitive educational and behavioral interventions to encourage patients' early, shared (with family and health care providers) and informed consideration of LKT and ameliorate disparities in consideration of LKT is unknown.

Methods/Design: We report the protocol of the Talking About Live Kidney Donation (TALK) Study, a two-phase study utilizing qualitative and quantitative research methods to design and test culturally sensitive interventions to improve patients' shared and informed consideration of LKT. Study Phase 1 involved the evidence-based development of culturally sensitive written and audiovisual educational materials as well as a social worker intervention to encourage patients' engagement in shared and informed consideration of LKT. In Study Phase 2, we are currently conducting a randomized controlled trial in which participants with progressing chronic kidney disease receive: 1) usual care by their nephrologists, 2) usual care plus the educational materials, or 3) usual care plus the educational materials and the social worker intervention. The primary outcome of the randomized controlled trial will include patients' self-reported rates of consideration of LKT (including family discussions of LKT, patient-physician discussions of LKT, and identification of an LKT donor). We will also assess differences in rates of consideration of LKT among African Americans and non-African Americans.

Discussion: The TALK Study rigorously developed and is currently testing the effectiveness of culturally sensitive interventions to improve patients' and families' consideration of LKT. Results from TALK will provide needed evidence on ways to enhance consideration of this optimal treatment for patients with end stage renal disease.

Trial Registration: ClinicalTrials.gov number, NCT00932334

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Helpful resources for living donors
Transplant center contact information
Risks of transplant tourism

Moving forward

- Transplant tourism is not an abstract practice that impacts a small group of people
- It highlights our inability to meet the needs of our patients
- Eliminating disparities in access to transplantation is critical to eliminate the demand for transplant tourism
- Deterring transplant tourism is critical to increasing the pursuit of LDKT

Thank you

