Disclosure

I have no disclosures related to this presentation

Thought Experiment

Japan

- Life expectancy of general population = <u>83.7 years*</u>
- Average educational attainment = 13.6 yrs
- #1 cause of death = Alzheimer's disease
- #2 cause of death = ischemic heart disease
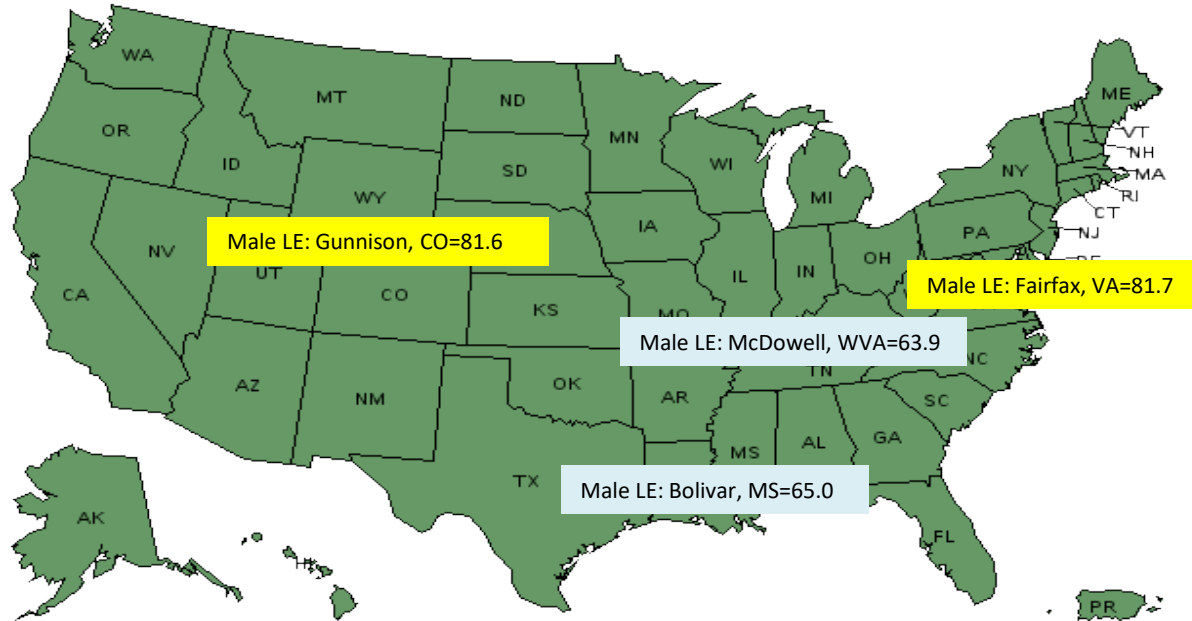- #1 risk factor for death and disability = dietary risks

Congo

- Life expectancy of general population = <u>64.7 years*</u>
- Average educational attainment = 8 yrs
- #1 cause of death = HIV/AIDS
- #2 cause of death = malaria
- #1 risk factor for death and disability = malnutrition

* source: Institute for Health Metrics

Life Expectancy by US County

Male LE: Gunnison, CO=81.6

Male LE: Fairfax, VA=81.7

Male LE: McDowell, WVA=63.9

Male LE: Bolivar, MS=65.0

US Male Life Expectancy = 76.1
US Female Life Expectancy = 80.8

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CEOT CUTTING EDGE of **TRANSPLANTATION**
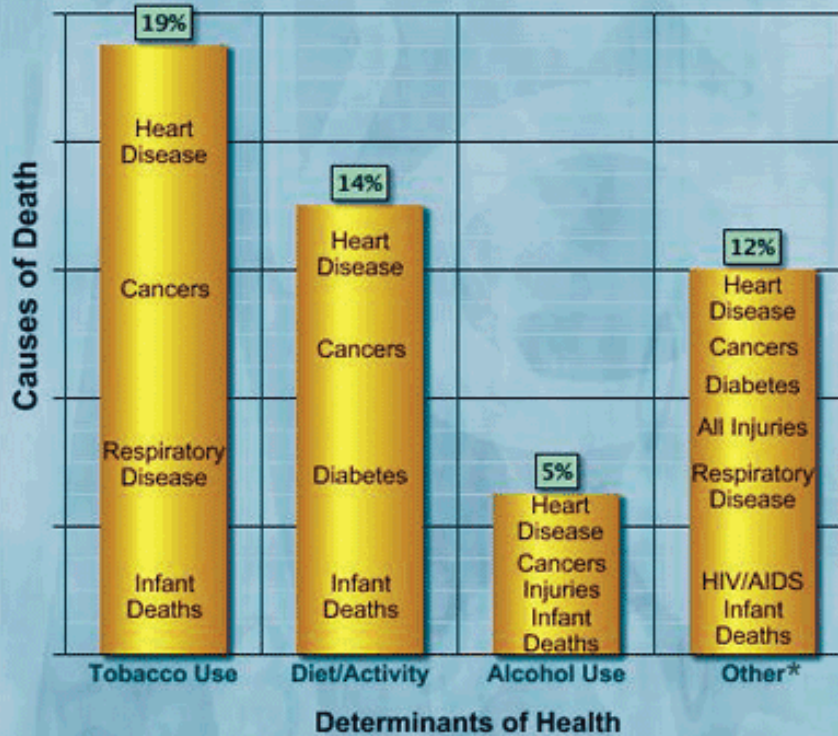
Source: McGinnis, J.M & Foege, W.H. Actual causes of death in the United States. JAMA., 270(18), 2207-2212

Determinants of Health

~10%
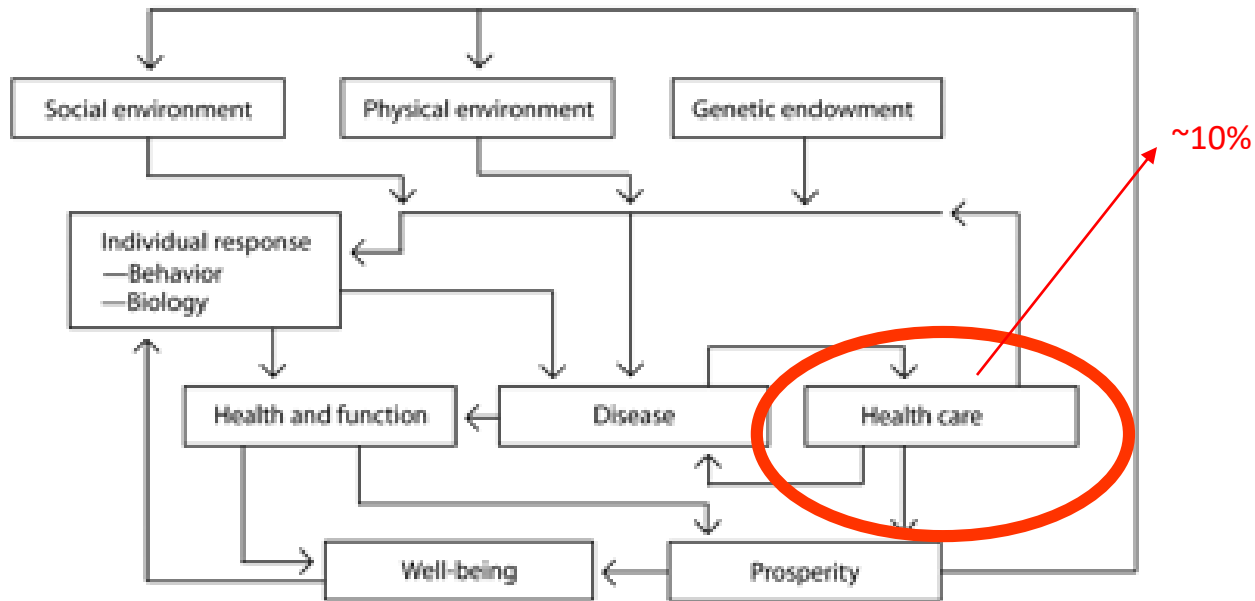
Source: Evans RG, AJPH, 2003 Mar

Neighborhoods, Obesity and Diabetes

5301 Families volunteered

803 Were excluded
693 Were not eligible
4 Were duplicate families
106 Were not headed by women

4498 Underwent randomization

1788 Were assigned to receive low-poverty voucher
852 Used voucher to move
936 Did not use voucher

1312 Were assigned to receive traditional voucher
796 Used voucher to move
516 Did not use voucher

1398 Were assigned to control group

Ludwig J et al. N Engl J Med 2011;365:1509-1519.

Body-Mass Index (BMI) and Glycated Hemoglobin Level at Follow-up, According to Study Group.

Table 3. Body-Mass Index (BMI) and Glycated Hemoglobin Level at Follow-up, According to Study Group.*

Variable	Control	Low-Poverty Voucher			Traditional Voucher		
	Prevalence (%)	Intention-to-Treat Estimate (95% CI)†	P Value	Prevalence (%)	Intention-to-Treat Estimate (95% CI)†	P Value	Prevalence (%)
BMI‡							
≥30	58.6	−1.19 (−5.41 to 3.02)	0.58	57.5	−0.14 (−6.27 to 5.98)	0.96	58.4
≥35	35.5	−4.61 (−8.54 to −0.69)	0.02	31.1	−5.34 (−11.02 to 0.34)	0.07	30.8
≥40	17.7	−3.38 (−6.39 to −0.36)	0.03	14.4	−3.58 (−7.95 to 0.80)	0.11	15.4
Glycated hemoglobin§							
≥6.5%	20.0	−4.31 (−7.82 to −0.80)	0.02	16.3	−0.08 (−5.18 to 5.02)	0.98	20.6

* The analysis sample consisted of women with a valid BMI measurement (for the BMI analysis) or a valid glycated hemoglobin measurement (for the glycated hemoglobin analysis) in the long-term follow-up data collection. See the Supplementary Appendix for the sample sizes used.
† Intention-to-treat estimates compare the average outcomes for all participants assigned to an intervention group with the average outcomes for controls, with adjustment for the set of baseline covariates shown in Table 1 and indicators for survey-sample release and random-assignment periods. The effects are calculated with the use of logistic regression and are presented as average marginal effects.
‡ BMI (the weight in kilograms divided by the square of the height in meters) was calculated from measured height and weight for most adults as part of the long-term follow-up data collection. Self-reported values were used for 23 observations in the low-poverty–voucher group, 22 observations in the traditional-voucher group, and 21 observations in the control group.
§ Glycated hemoglobin (HbA$_{1c}$) was assayed from dried blood spots collected as part of the long-term follow-up data collection.

Life Expectancy of a Prison Guard

- "Life expectancy of a prison guard is 16 years shorter than the general population…"

- Reducing Staff and Inmate Stress (Corrections Today)

Risk Adjustment for Socioeconomic Status or Other Sociodemographic Factors

NATIONAL QUALITY FORUM

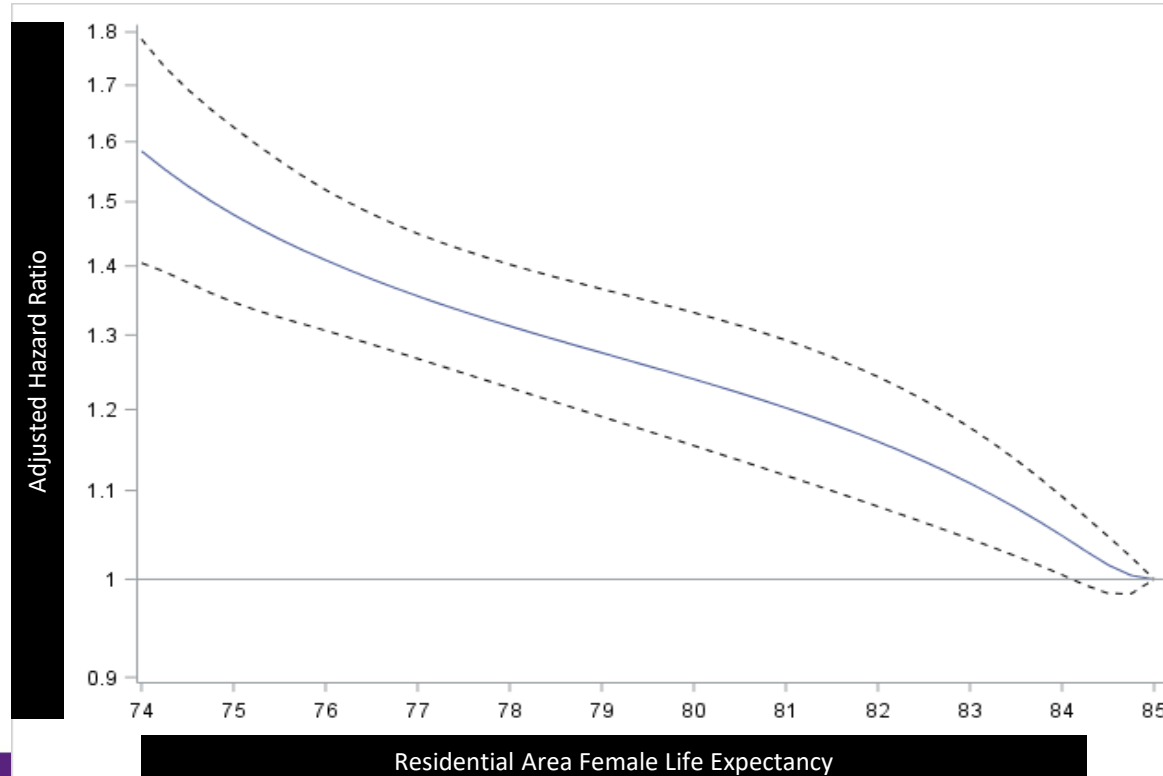AST | AMERICAN SOCIETY OF TRANSPLANTATION
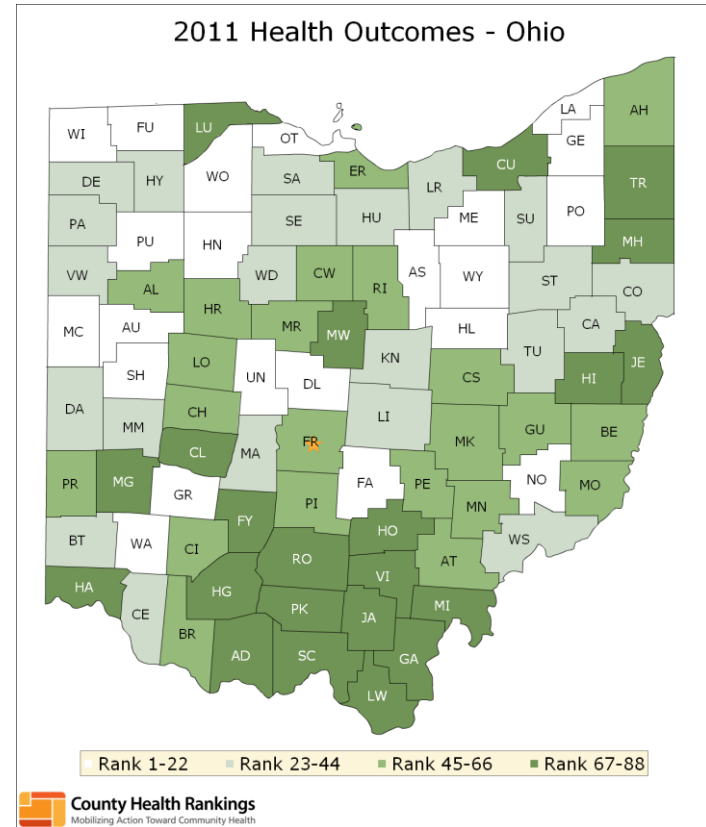
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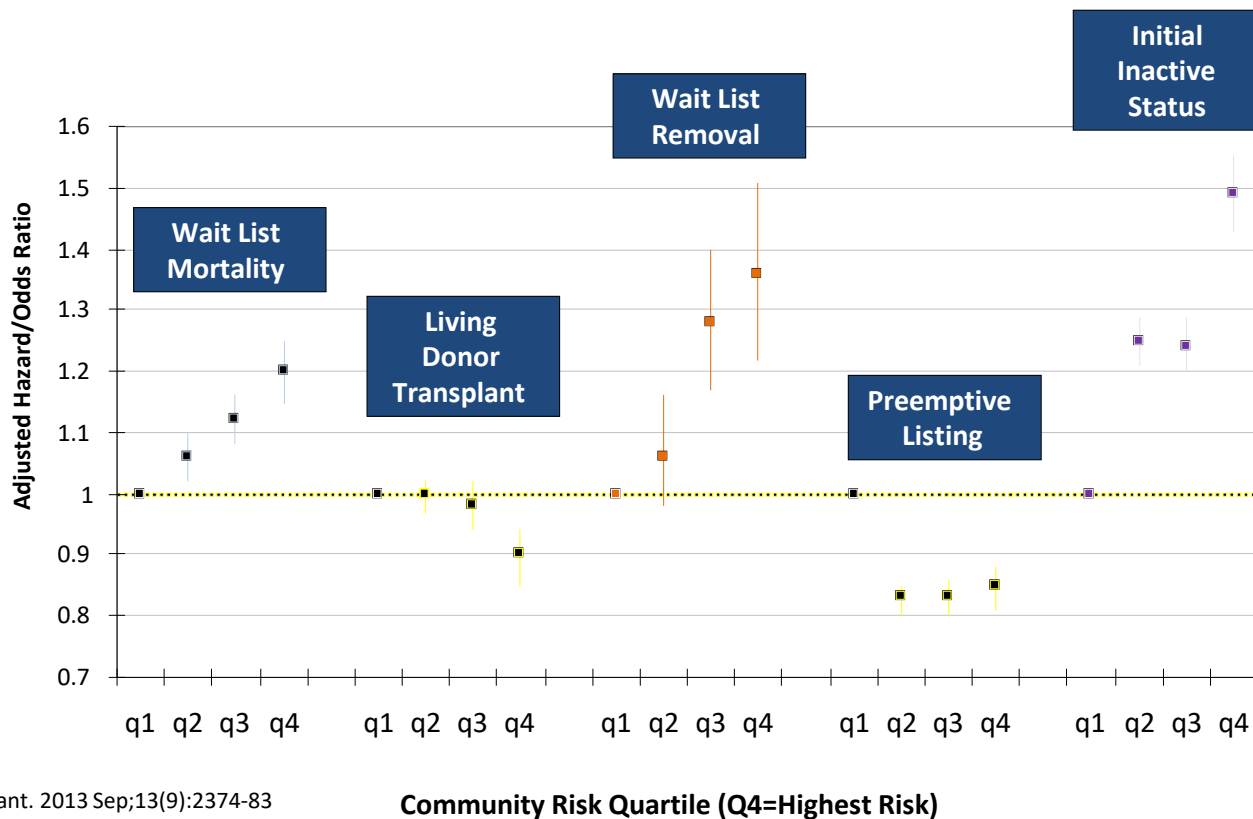
Residential Life Expectancy and ESRD Mortality

Schold et al, American Journal of Kidney Diseases, June, 2018

Impact of Risk Factors in the Community

Health Factor	Focus Area	Measure
Health behaviors (30%)	Smoking (10%)	Adult smoking rate (10%)
	Diet and exercise (10%)	Adult obesity rate (10%)
	Alcohol use (5%)	Excessive drinking (2.5%) Motor vehicle crash death rate (2.5%)
	Unsafe sex (5%)	Sexually transmitted infection rate (2.5%) Teen birth rate (2.5%)
Clinical care (20%)	Access to care (10%)	Adult uninsured rate (5%) Primary care providers (5%)
	Quality of care (10%)	Hospitalization rates for ambulatory-sensitive conditions (5%) Diabetic screening rate (2.5%) Mammography screening rate (2.5%)
Social and economic factors (40%)	Education (10%)	High school graduation rate (5%) Adults with college degrees (5%)
	Employment (10%)	Unemployment rate (10%)
	Income (10%)	Children in poverty (10%)
	Family and social support (5%)	Social and emotional support (2.5%) Single-parent households (2.5%)
	Community safety (5%)	Violent crime or homicide rate (5%)
Physical environment (10%)	Environmental quality (5%)	Unhealthy air quality due to particulate matter (2.5%) Unhealthy air quality due to ozone (2.5%)
	Built environment (5%)	Access to healthy foods (2.5%) Access to recreational facilities (2.5%

2011 Health Outcomes - Ohio

Rank 1-22   Rank 23-44   Rank 45-66   Rank 67-88

County Health Rankings
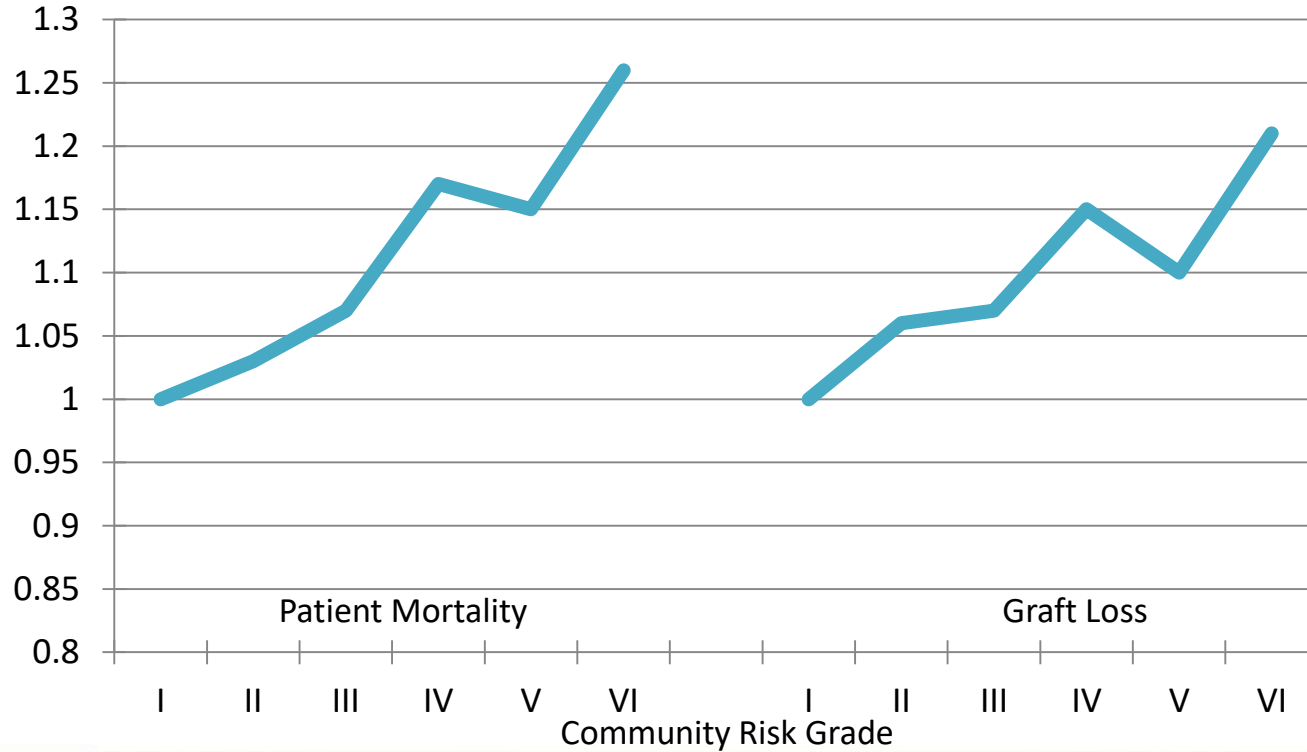Mobilizing Action Toward Community Health

Community Risk is Strongly Associated with Pre-Transplant Processes and Outcomes

Schold JD et al, Am J Transplant. 2013 Sep;13(9):2374-83

Adjusted Hazard for Post-Transplant Outcomes by Cumulative Community Risk Score

Schold et al, Archives of Surgery, 2012

Socioeconomic Status and Kidney Transplant Outcomes in a Universal

Healthcare System: A Population-based Cohort Study

Table 2. Incidence rate for total graft failure, death-censored graft failure, death with a functioning graft, all-cause mortality, and all-cause hospitalization after kidney transplantation by neighborhood income

Outcomes	Income Quintile				
	Quintile 1, lowest (n=979)	Quintile 2 (n=960)	Quintile 3 (n=873)	Quintile 4 (n=838)	Quintile 5, highest (n=764)
Total Graft failure					
No. events (%)	190 (19.4)	178 (18.5)	161 (18.4)	146 (17.4)	121 (15.8)
No. events per 100 person-years† (95% CI)	4.07 (3.52, 4.68)	4.08 (3.51, 4.71)	3.93 (3.36, 4.58)	3.77 (3.20, 4.42)	3.26 (2.72, 3.88)
Death-Censored Graft Failure					
No. events (%)	88 (9.0)	77 (8.0)	87 (10.0)	68 (8.1)	56 (7.3)
No. events per 100 person-years† (95% CI)	1.88 (1.52, 2.31)	1.76 (1.40, 2.19)	2.13 (1.71, 2.61)	1.76 (1.38, 2.21)	1.51 (1.15, 1.95)
Death with a Functioning Graft					
No. events (%)	102 (10.4)	101 (10.5)	74 (8.5)	78 (9.3)	65 (8.5)
No. events per 100 person-years† (95% CI)	2.18 (1.79, 2.64)	2.31 (1.89, 2.80)	1.81 (1.43, 2.26)	2.02 (1.60, 2.50)	1.75 (1.36, 2.22)
All-Cause Mortality					
No. events (%)	127 (13.0)	126 (13.1)	108 (12.4)	94 (11.2)	82 (10.7)
No. events per 100 person-years† (95% CI)	2.58 (2.16, 3.05)	2.75 (2.30, 3.26)	2.48 (2.04, 3.00)	2.31 (1.87, 2.81)	2.12 (1.70, 2.62)
All-Cause Hospitalization					
No. events (%)	651 (66.5)	616 (64.2)	554 (63.5)	521 (62.2)	467 (61.1)
No. events per 100 person-years† (95% CI)	29.57 (27.36, 31.91)	29.27 (27.03, 31.66)	25.74 (23.66, 27.95)	26.83 (24.60, 29.21)	23.94 (21.84, 26.19)

Naylor KL et al
Transplantation (in
press)

The Stanford Integrated Psychosocial Assessment for Transplantation (SIPAT): A New Tool for the Psychosocial Evaluation of Pre-Transplant Candidates

Maldonado et al, Psychometrics, 2012, March, 123-132

Psychosocial Domains and Factors Measured by the SIPAT

(A) PATIENT'S READINESS LEVEL and ILLNESS MANAGEMENT (5 items)

Item 1: Knowledge and understanding of medical illness process (that caused specific organ failure)

Item 2: Knowledge and understanding of the process of transplantation

Item 3: Willingness/desire for treatment (transplant)

Item 4: History of treatment adherence/compliance (pertinent to medical issues)

Item 5: Lifestyle factors (including diet, exercise, fluid restrictions, and habits according to organ system)

(B) SOCIAL SUPPORT SYSTEM LEVEL OF READINESS (3 items)

Item 6: Availability of social support system

Item 7: Functionality of social support system

Item 8: Appropriateness of physical living space and environment

(C) PSYCHOLOGICAL STABILITY AND PSYCHOPATHOLOGY (5 items)

Item 9: Presence of psychopathology (other than personality disorders and organic psychopathology)

Item 10: History of organic psychopathology or neurocognitive impairment (i.e., illness or medication-induced psychopathology)

Item 11: Influence of personality traits vs. disorder

Item 12: Effect of truthfulness vs. deceptive behavior

Item 13: Overall risk for psychopathology

(D) LIFESTYLE AND EFFECT OF SUBSTANCE USE (5 items)

Item 14: Alcohol use, abuse, and dependence

Item 15: Alcohol abuse - risk for recidivism

Item 16: Illicit substance, abuse and dependence

Item 17: Illicit substance abuse - risk for recidivism

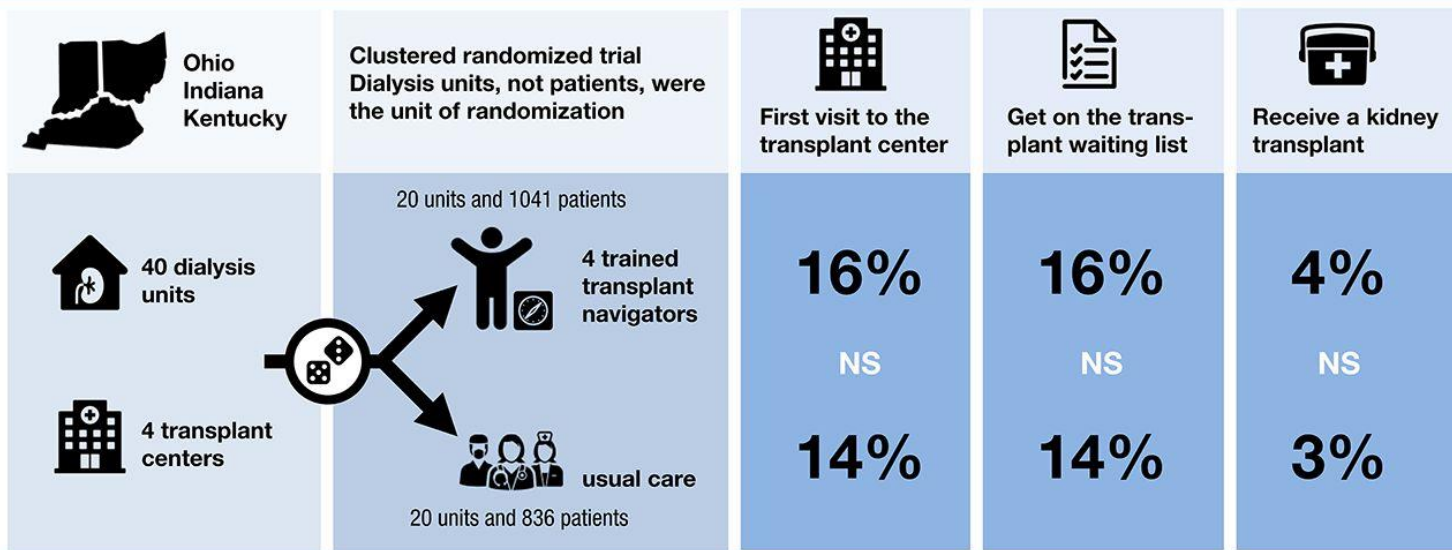Item 18: Nicotine use, abuse, and dependence

Kaplan–Meier analyses and time-dependent Cox proportional hazards model for waitlisting among intervention versus control study participants showed that patients with a navigator were more likely to be placed on the kidney transplant waiting list after 500
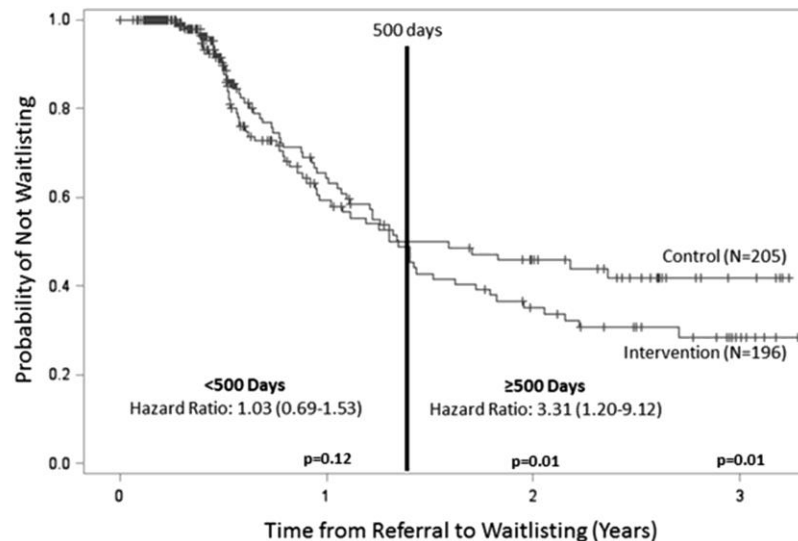
	Year 1		Year 2		Year 3	
	Number at Risk	Number of Waitlisting Events	Number at Risk	Number of Waitlisting Events	Number at Risk	Number of Waitlisting Events
Total Study Population	401	76	325	34	291	6
Intervention	196	35	161	24	137	4
Control	205	41	164	10	154	2

Basu et al. CJASN 2018;13:620-627

Do trained transplant transplant navigators help move patients forward in the kidney transplant process?

CJASN
Clinical Journal of American Society of Nephrology

Ohio
Indiana
Kentucky

Clustered randomized trial
Dialysis units, not patients, were
the unit of randomization

First visit to the transplant center

Get on the transplant waiting list

Receive a kidney transplant

40 dialysis units

4 transplant centers

20 units and 1041 patients

4 trained transplant navigators

usual care

20 units and 836 patients

|	First visit to the transplant center	Get on the transplant waiting list	Receive a kidney transplant
4 trained transplant navigators	16%	16%	4%
	NS	NS	NS
usual care	14%	14%	3%

Conclusions Use of trained kidney transplant recipients as naviga-tors did not increase first visits to a transplant center, waiting list place-ment, and receipt of deceased or living donor transplants.

Catherine Sullivan, Kitty Barnswell, Kate Greenway, Cindy Kamps, Derrick Wilson, Jeffrey Albert, Jacqueline Dolata, Anne Huml, Julie Pencak, John Ducker, Roberto Gedaly, Christopher Jones, Todd Pesavento, and Ashwini Sehgal. *Impact of Navigators on First Visit to a Transplant Center, Waitlisting, and Kidney Transplantation.*
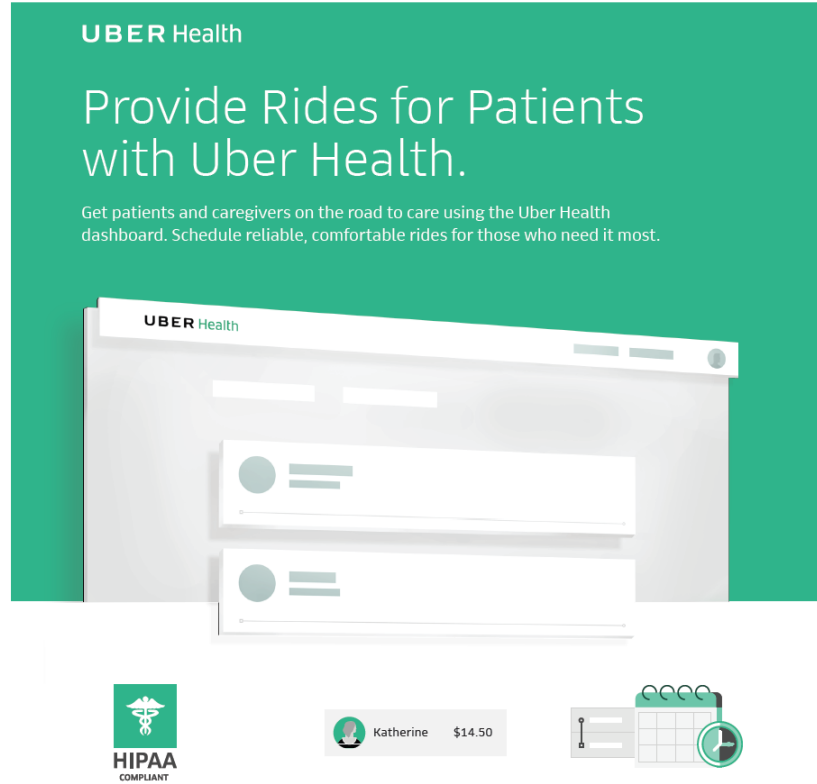
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CJASN of **TRANSPLANTATION**

Summary of the TELEGRAFT study design
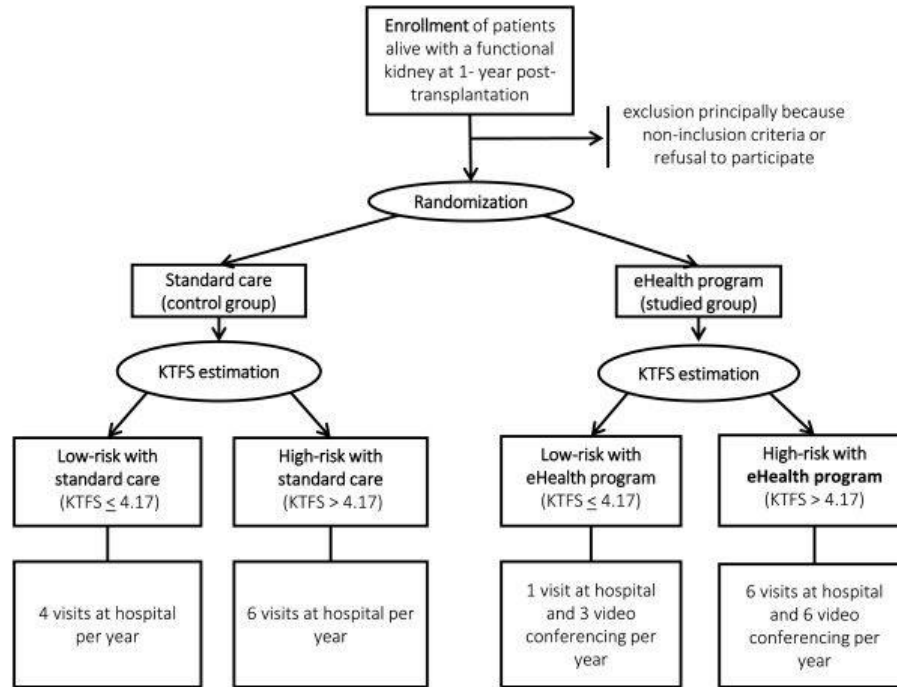
Foucher et al, BMC Nephrology 2015**16**:6

Interventions for Patients with Low Socioeconomic Status

Challenges

- Interventions, policies and systematic data collection addressing access to transplantation for patients with social risk factors
- Recognizing patients at highest risk for non-clinical and traditionally non-codified social factors
- Identifying effective stages to address social risk factors
- Developing interventions that are salient to individual (personalized) social risks
- Considering cost-effectiveness and sustainability of approaches

Conclusions

- Social risk factors are consistently demonstrated to affect patient access to care and outcomes in variety of settings

- These risks are pervasive and have existed throughout the history of transplantation

- The magnitude of these risks are no less than many clinical risk factors that have targeted therapies and interventions

- Developing effective interventions for these populations may improve access to care, improve clinical outcomes and cost-effective care and improve measured center performance