

Social Determinants of Health Among Medicare and Privately Insured Kidney Transplant Candidates in the United States

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Background

In the United States, disparities in access to kidney transplantation persist despite legislative entitlement to Medicare for patients with end-stage renal disease.

We hypothesize that individual- and area-level social determinants of health (SDOH), not collected by the Organ Procurement and Transplantation Network (OPTN), may explain persisting disparities in access to transplant among Medicare compared with privately insured kidney transplant candidates.

Objective: Examine the distribution of individual- and area-level SDOH among Medicare compared with privately insured kidney transplant candidates.

Methods

We merged OPTN data with individual-level SDOH and address data from LexisNexis, a commercial data vendor. Patient addresses from LexisNexis were linked with the area deprivation index (ADI) and the social vulnerability index (SVI).

Our study cohort included 89,820 adult kidney-alone transplant candidates on the kidney waiting list in 2022.

Results

Table 1. Demographic Characteristics of Medicare and Privately insured adult kidney transplant candidates on the waiting list in 2022

	Medicare (N=44,081)	Private (N=45,739)	P-value
Age (years), Median (IQR)	59 (48-67)	53 (44-60)	<0.001
Sex			
Male	26814 (61)	28345 (62)	0.002
Race/Ethnicity			
White, non-Hispanic	17070 (39)	20231 (44)	<0.001
Black, non-Hispanic	16439 (37)	13243 (29)	
Hispanic/Latino	6800 (15)	6838 (15)	
Other, non-Hispanic	3772 (9)	5427 (12)	
Body mass index			
<30	24289 (55)	23957 (52)	<0.001
≥30 to <35	11986 (27)	12770 (28)	
≥35	7806 (18)	9012 (20)	
Time on Dialysis			
Preemptive	9041 (21)	15360 (34)	<0.001
Less than 2 years	7511 (17)	10782 (24)	
2-4 years	10646 (24)	9666 (21)	
4+ years	16883 (38)	9931 (22)	
Primary Cause of End-Stage Renal Disease			
Diabetes	17983 (41)	15581 (34)	<0.001
Highest Education Level			
College degree or higher	11164 (25)	16887 (37)	<0.001
Derogatory Public Records			
No derogatory record	21412 (49)	25057 (55)	<0.001
History of Voter Record			
Yes	24888 (56)	24911 (54)	<0.001
Census Region			
Northeast	8351 (19)	8619 (19)	<0.001
Midwest	7903 (18)	8261 (18)	
West	8655 (20)	11414 (25)	
South	19172 (43)	17445 (38)	
Distance from transplant center (miles)	24 (8.9-71)	22 (9.6-60)	<0.001
Estimated Annual Income	\$61,000 (\$38,000-\$81,000)	\$72,000 (\$45,000-\$92,000)	<0.001
Neighborhood Median Household Income	\$59,000 (\$44,000-\$80,000)	\$69,000 (\$51,000-\$93,000)	<0.001
Area Deprivation Index	54 (29-78)	43 (21-67)	<0.001
Social Vulnerability Index	61 (34-83)	51 (26-75)	<0.001

Results

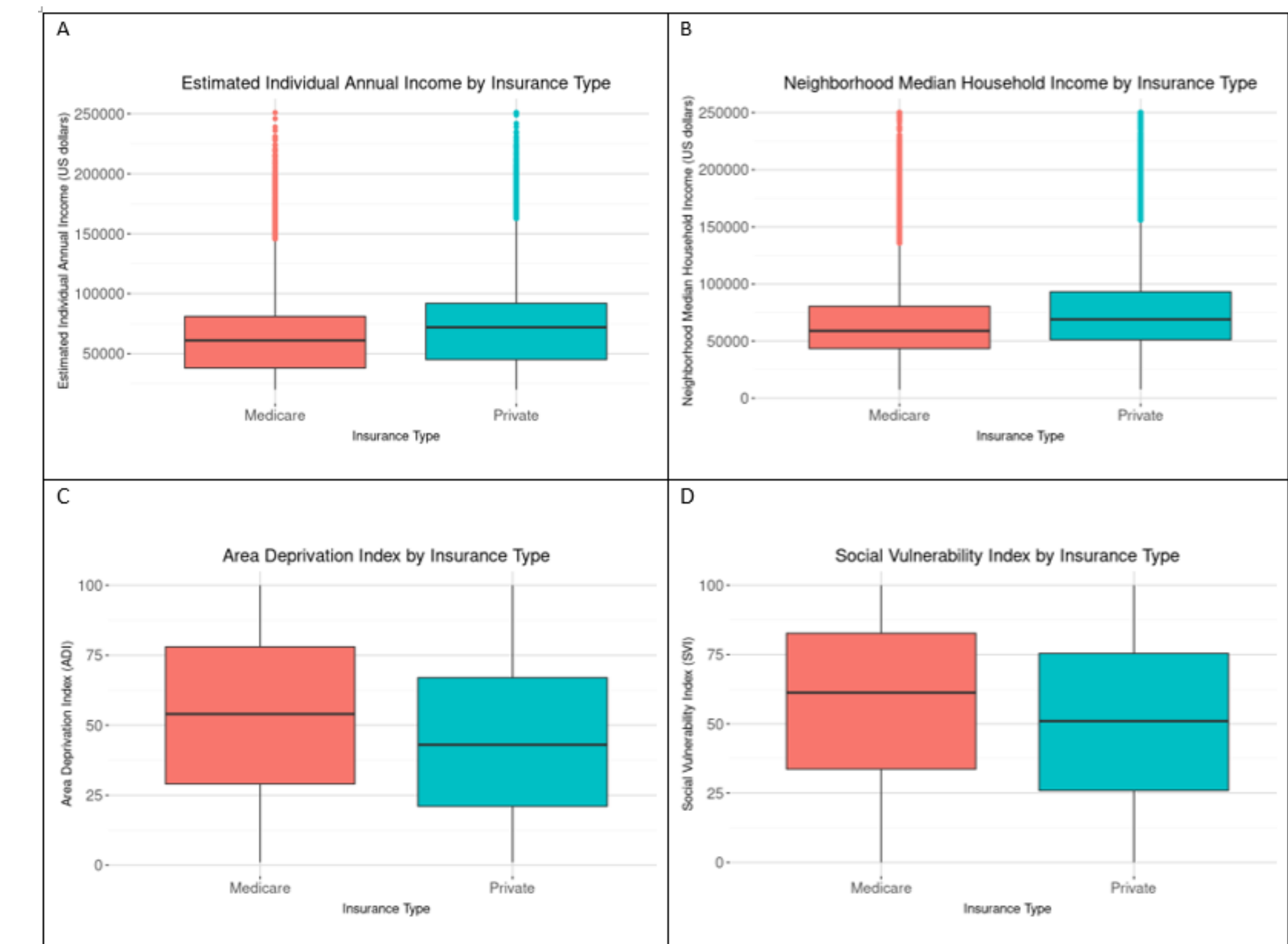


Figure 1. Social determinants of health stratified by insurance type. (A) Distribution of estimated individual annual income by insurance type; (B) Distribution of neighborhood median household income by insurance type; (C) Distribution of area deprivation index by insurance type; (D) Distribution of social vulnerability index by insurance type.

Conclusion

Taken together, we demonstrated that patients on Medicare experienced more adverse individual- and area-level SDOH compared with those with private insurance. Our study findings suggest that the collection of data on SDOH in transplant registries may help researchers and policy makers understand and address the impact of SDOH on persisting health disparities in this patient population.

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