

The 2009 Annual Report of the OPTN and SRTR

Geographic Variation in End-Stage Renal Disease Incidence and Access to Deceased Donor Kidney Transplantation

Overview

- The effect of demand for kidney transplantation, measured by end-stage renal disease (ESRD) incidence, on access to transplantation is unknown.
- Using data from the U.S. Census Bureau, Centers for Medicare & Medicaid Services (CMS), and the Organ Procurement and Transplantation Network/Scientific Registry of Transplant Recipients (OPTN/SRTR) from 2000-2008, DSA and patient-level regression analyses were performed to assess the effect of ESRD incidence on access to the kidney waiting list and deceased donor kidney transplantation.
- In DSAs, ESRD incidence increased with greater density of high ESRD incidence racial groups (African-Americans and Native Americans). Wait-list and transplant rates were relatively lower in high ESRD incidence DSAs, but wait-list rates were not drastically affected by ESRD incidence at the patient level.
- Compared to low ESRD areas, high ESRD areas were associated with lower adjusted transplant rates among all ESRD patients (RR 0.68, 95 percent CI 0.66-0.70). Patients living in medium and high ESRD areas had lower transplant rates from the waiting list compared to those in low ESRD areas (medium: RR 0.68, 95 percent CI 0.66-0.69; high: RR 0.63, 95 percent CI 0.61-0.65).
- Geographic variation in access to kidney transplant is in part mediated by local ESRD incidence, which has implications for allocation policy development.

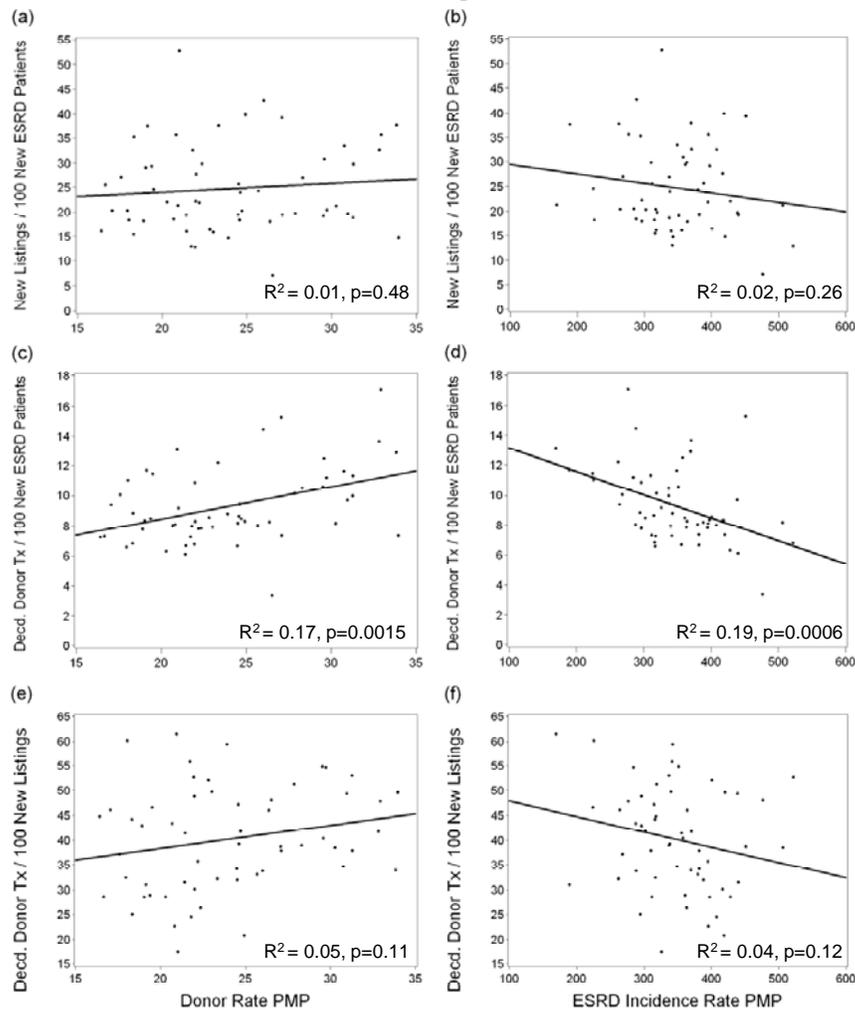
The six panels in the following figure, which is included in Chapter VIII of the report, display the complex relationship between access to transplantation, organ supply, and organ demand in a DSA-level analysis.

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The data and analyses reported in the 2009 Annual Report of the U.S. Organ Procurement and Transplantation Network and the Scientific Registry of Transplant Recipients have been supplied by the United Network for Organ Sharing and the Arbor Research Collaborative for Health under contract with the Department of Health and Human Services. The authors alone are responsible for reporting and interpreting these data; the views expressed herein are those of the authors and not necessarily those of the U.S. Government.

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Figure VIII-5. Donor Organ Supply and Demand for Kidney Transplantation



Source: SRTR Special Analysis, August 2009

Organ supply, as defined by donation incidence per million population, was significantly associated with the transplant rate among 100 ESRD patients. Donation rates were not significantly associated with wait-listing rates or transplant rates from the waiting list. With regards to organ demand, defined as the ESRD incidence PMP, impaired access to kidney transplantation was noted among ESRD patients with increasing concentration of ESRD within a DSA. Wait-list rates among ESRD patients within a DSA declined slightly with increasing incidence, and this trend was also noted in transplant rates from the waiting list. These latter trends were not significant, however. Organ demand and supply significantly affected overall transplant rates from the ESRD population at the DSA level.