Kidney Disease Education: Disparities and Opportunities to Help Increase Kidney Transplants in Patients With ESRD

Kidney disease education (KDE) services, covered by CMS for patients with stage 4 CKD, offer information on kidney disease, diet, managing comorbidities, and treatment options (eg, kidney transplantation and dialysis modalities)[1]

A study evaluated the association of demographics, clinical characteristics, and SDOH with receipt of KDE among patients with ESRD[2,*]

Key patient baseline characteristics associated with **decreased likelihood** of receiving KDE[2,3]:



Not actual patients.

- **Younger adult age**
  (OR: 0.92; 95% CI: 0.86-0.97 for 45-64 vs 65+ years)[†]
- **Black race**
  (OR: 0.92; 95% CI: 0.87-0.97; vs White)[†]
- **Hispanic ethnicity**
  (OR: 0.72; 95% CI: 0.67-0.79; vs non-Hispanic)[†]
- **Higher SDI scores**
  (OR: 0.68; 95% CI: 0.64-0.73 for higher deprivation in Q4 [>81.0] vs Q1 [≤33.0])[†]
- **Public assistance income or food stamps/SNAP**
  (OR: 0.66; 95% CI: 0.62-0.70 for percentage of households in Q4 [>20.83%] vs Q1 [≤7.84%])[†]
- **Unemployment**
  (OR: 0.75; 95% CI: 0.70-0.81; vs retirement due to age/preference)[†]

Compared with patients who did not receive KDE, receipt of KDE **increased the likelihood** of[3]:

- Receiving a **kidney transplant** by **41%** (HR: 1.41, 95% CI: 1.19-1.66)
- Being placed on a kidney transplant **waiting list** by **41%** (HR: 1.41; 95% CI: 1.24-1.62)
- Being **evaluated** for a kidney transplant by **51%** (HR: 1.51; 95% CI: 1.27-1.78)

KDE was associated with increased likelihood of receiving a **kidney transplant** among appropriate patients with ESRD. However, certain **sociodemographic factors** may be associated with **lower KDE uptake** and require targeted interventions to improve KDE utilization[2]

To learn how to increase KDE, please contact **transplant@sanofi.com.**

See reverse side for additional study information and limitations ▶

CI, confidence interval; CCI, Charlson Comorbidity Index; CKD, chronic kidney disease; CMS, Centers for Medicare & Medicaid Services; ESRD, end-stage renal disease; HR, hazard ratio; OR, odds ratio; Q1, quartile 1; Q4, quartile 4; SDI, social deprivation index; SDOH, social determinants of health; SNAP, Supplemental Nutrition Assistance Program.

* Of all eligible patients with ESRD, 1.5% (7,838 of 519,902) received KDE. Most patients (85.6%) had stage 4 CKD with comorbidities (mean CCI score, 7.2) and received individual KDE (75.6% vs 23.1% group KDE).[2]

† Based on bivariate logistic regression analysis.[2]

References: 1. Kidney disease education. Medicare.gov. Accessed January 9, 2025. https://www.medicare.gov/coverage/kidney-disease-education. **2.** Preblick R, et al. *J Am Soc Nephrol.* 2024;35(suppl 10). Kidney Week 2024 abstract TH-PO848. **3.** Data on file. Sanofi; 2025.

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Education on kidney transplantation is one of the required topics included in the KDE services.[1]

1.5% Of all eligible patients with ESRD received **KDE**[2]
(7,838 of 519,902)

>2x **Higher likelihood** of receiving KDE in patients with **moderate comorbidities**[2]
(CCI score of 6-10 vs 0-5 for mild)

Study Design[2,3]

- Retrospective cohort study used data from the Medicare-linked United States Renal Data System (USRDS), which was supplemented with neighborhood-level information from the Agency for Healthcare Research and Quality SDOH database and the American Community Survey
- The study included US patients aged ≥18 years who had a CMS ESRD form (CMS-2728) fill date (index date) between June 30, 2011, and September 30, 2019; an ESRD diagnosis ±30 days of the fill date; and ≥1 year preindex activity, including diagnosis and medication histories
- Patients who received KDE were identified within 2 years before the index date
- Baseline period was defined as within 1 year preindex date
- The study used bivariate logistic regression to generate odds ratio and 95% CIs to assess association of patient characteristics and SDOH with receipt of KDE
- Quartiles (eg, Q1, Q4) presented for certain variables were based on the distribution of the total sample to create clinically meaningful categories
- SDI scores ranged between 1-100, with higher scores indicating higher deprivation

Study Limitations[2]

- Study was a retrospective analysis of the USRDS database
- Health care professionals may perform KDE but not report or bill for it
- Patients could have been offered KDE but declined; determining the proportion of patients to whom this might apply was not possible
- Study could not identify patients who received KDE >2 years before the ESRD diagnosis; consequently, these patients may have been included in the non-KDE cohort
- Results must be interpreted with caution

References: 1. Kidney disease education. Medicare.gov. Accessed January 9, 2025. https://www.medicare.gov/coverage/kidney-disease-education.
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