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Dialysis for Patients With End-stage Renal Disease Who Are Homeless

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End-stage renal disease (ESRD) affects more than 700 000 individuals in the United States and accounts for \$33 billion in annual Medicare spending.¹ Since 1973, the Medicare program has provided health coverage for most individuals with ESRD regardless of their age. About 34% of people with newly diagnosed ESRD live in areas where more than 1 in 5 households are below the federal poverty level.² Although the prevalence of homelessness among patients with ESRD is unknown, such patients would benefit from safe and stable housing. Homelessness imposes substantial barriers to good medical care.³ We highlight the challenges faced by patients with ESRD who are homeless, recommend measures to determine the prevalence and outcomes of homelessness among Medicare beneficiaries with ESRD, and propose approaches, including a federal demonstration project, to potentially improve outcomes through supportive housing.

Providing housing to people with medically complex diseases has the potential to improve their health and decrease spending on acute care.^{4,5} Housing programs targeting individuals with HIV infection, mental illness, and substance use disorders have expanded throughout the United States. Examples include programs that provide housing vouchers, short-term rental assistance, transitional housing, and permanent supportive housing that combines affordable housing with medical, mental health, and social services.^{4,5} Scattered-site permanent supportive housing pairs single apartments in existing buildings with multidisciplinary case management. Single-site permanent supportive housing consists of

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entire buildings dedicated to specific groups of people and offers multidisciplinary services on-site. Analyses of permanent supportive housing programs have shown reductions in hospital admissions, increased engagement in care, improvements in overall survival, and substantial reductions in acute care spending.^{4,5} We are unaware, however, of any such programs in the United States for patients with ESRD. Providing supportive housing with appropriate multidisciplinary services to patients with ESRD who are homeless would be an important advance.

Patients who receive dialysis have complex medical regimens and challenging dietary restrictions. Transportation to and from dialysis centers and coordination with other outpatient appointments are common obstacles.³ An estimated 60% to 70% of patients with chronic kidney disease and ESRD have chronic pain.⁶ The stress from living in homeless shelters, poor sleeping conditions, inability to afford medications, and missed appointments exacerbate pain in patients who are homeless, which can lead to reliance on street drugs and an increased risk of overdose.⁷ The myriad management challenges and logistical barriers lead to missed dialysis sessions and promote heavy reliance on emergency-only dialysis. Stable housing would help patients to store medications and healthy foods, secure transportation, attend appointments, engage with needed services, and adhere to dialysis treatments. Although there is clinical uncertainty about how best to address addiction, mental illness, and interpersonal violence, homelessness renders the treatment adherence required for successful dialysis nearly impossible.⁵

In 2015, the annual cost in the United States of providing chronic hemodialysis was \$88195 per person.¹ The average patient receiving hemodialysis is hospitalized twice per year, and 35% are readmitted within 30 days of a hospitalization.¹ Even without ESRD, people who are homeless are less likely to have consistent primary care, are more likely to use emergency services and have more frequent inpatient admissions, longer hospital stays, and increased mortality compared with people who are not homeless.^{5,8} The reported cost of providing supportive housing to a homeless person in 2015 ranged from \$318 to \$18 600 per year, but program expenses varied depending on the target population, location, and services provided.⁴ Although reports of the effects of supportive housing programs on total health care costs have been conflicting, acute care service use and associated costs are consistently lower in medically complex populations who receive supportive housing.⁴

To better care for patients who are homeless and require dialysis, the prevalence of homelessness among patients with ESRD should be determined. For example, questions about homelessness could be added to existing Centers for Medicare & Medicaid Services (CMS) forms that are completed by all federally approved dialysis units. The CMS-2728 forms capture various demographic and health indicators and are completed by dialysis providers for all individuals when they start dialysis. A section indicating whether an individual is homeless, lacks a fixed nighttime residence, or is at risk of imminent housing loss⁹ could be added. A similar section could also be added to the CMS-2744 forms that are completed annually by dialysis facilities.

The outcomes of patients with ESRD who are homeless should also be evaluated. After such patients are identified, infectious complications, emergency department visits, hospital

admissions, mortality, and health care costs could be tracked using the existing monitoring systems of CMS and the United States Renal Data System.

In addition to prevalence and outcome data being collected, the potential effect of permanent supportive housing for patients with ESRD should be evaluated through a demonstration program. Although the specific approaches could be determined based on community need, the project or projects should be modeled on existing supportive housing programs that have documented efficacy and should include cost-benefit analyses as part of the evaluation. For example, through partnerships between dialysis providers, local agencies, hospitals, and CMS, new single-site buildings specifically designed for patients with ESRD could be created in areas with higher patient concentrations and evaluated for their effect on patient outcomes. In areas with few patients with ESRD who are homeless, the effect of providing them with priority on existing scattered-site housing waiting lists could also be examined.

If a demonstration is successful, a federal program dedicated to the housing needs of patients with ESRD could be established. Examples of programs to draw from include the Department of Housing and Urban Development Veterans Affairs Supportive Housing, a housing program for homeless veterans, and Housing Opportunities for Persons with AIDS, a housing program for people with HIV infection or AIDS. These programs provide funding for population-specific housing and ongoing research. Through ongoing federal funding, such a program for patients with ESRD who are homeless could provide grants to local communities, states, and nonprofit organizations to partner with CMS and other payers to fund housing programs, case management, and patient outreach.

Although housing programs are typically funded through the Department of Housing and Urban Development (HUD) budget, the Department of Health and Human Services (DHHS) and specifically CMS might also be appropriate funders for a housing program for patients with ESRD who are homeless. The ESRD program and ESRD-related costs are the responsibility of CMS. Funding for a demonstration project or new federal housing program would likely require Congressional appropriation of new funds or altering existing budgetary language to allow DHHS or HUD funds to be used for this purpose. The Trump administration has supported policies encouraging community use of permanent supportive housing and other evidence-based interventions to end homelessness.¹⁰

In conclusion, we see no path to alleviating the medical problems of patients with ESRD who are homeless and their logistical barriers to care other than providing supportive housing with appropriate multidisciplinary services. Providing supportive housing to patients with ESRD who are homeless might offset acute care costs and improve health outcomes, as well as more efficiently allocate health care resources.

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