Patients with end-stage kidney disease (ESKD) incur substantial costs for the Medicare program while experiencing high rates of adverse outcomes. Substantial racial, ethnic, and socioeconomic disparities also persist among patients with ESKD. Consequently, improving ESKD care has been a key focus for the US Centers for Medicare & Medicaid Services. A recent major initiative focuses on increasing home dialysis (peritoneal dialysis and home hemodialysis), kidney transplant waitlisting, and living donor transplant rates through Medicare's End-Stage Renal Disease (ESRD) Treatment Choices (ETC) Model. In this issue of JAMA Health Forum, Ji and colleagues report what is to our knowledge the first peer-reviewed evaluation of a key outcome in the ETC model. Their study found that financial incentives in the ETC model's first year (2021) had no significant effect on the percentage of patients initiating treatment with home dialysis. Results were consistent across patient characteristics, dialysis facility size, and facility profit status.

The ETC model and this evaluative study are important for several reasons. First, the ETC model is one of the largest health care policy experiments in US history and randomizes 30% of hospital referral regions to receive financial incentives. Its randomized design with mandatory participation overcomes issues with selection bias that are typically seen with voluntary models. Second, the policy design tests a meaningful shift in financial incentives through pay-for-performance elements. The ETC model focuses on a parsimonious set of performance measures and uses sizeable payment incentives to motivate changes in practice patterns (up to 8% bonus or −10% penalty in the final year). Third, the ETC model has taken a novel step forward by adding an equity incentive in 2022 to reduce socioeconomic disparities in home dialysis and transplant.

Ji and colleagues have provided timely, actionable findings to inform policy implementation of the ETC model. Their evaluation is exemplary in its use of a prespecified analysis plan, power calculations to inform detectable effect sizes, and rigorous sensitivity analyses. Their finding that home dialysis use increased in ETC and non-ETC regions (from 16.5% in 2018 to 20.6% in 2021) is promising because home dialysis is associated with clinical benefits compared with in-center hemodialysis, including improved quality of life and better preservation of residual kidney function. Home dialysis use has been increasing since 2008, so interrupted time series could examine if the increases reported by Ji and colleagues represent a departure from prior trends.

This study raises several opportunities for further inquiry. First, rates of home dialysis use in the study sample (patients with incident ESKD 66 years or older) are higher than estimates from the US Renal Data System (16.5% vs 9.1% in 2018) and analyses of prevalent patients. Differences in inclusion criteria and/or outcome definitions may explain these discrepancies and will be important to reconcile, although they may affect ETC and non-ETC regions similarly. Second, investigating the ETC model's effect across age groups will be important because patients with ESKD are eligible for Medicare coverage regardless of their age, and most prevalent home dialysis patients (62%) are younger than 65 years. Third, the study period (January to October 2021) occurred during the COVID-19 pandemic, which had a profound effect on patients with ESKD and dialysis care, including nursing shortages, supply chain disruptions, delays in dialysis initiation, and a relative increase in home dialysis early in the pandemic. It will be important for researchers to disentangle how COVID-19 continues to affect patient preferences for home dialysis and the ability to implement changes in care delivery.
What could account for the ETC model’s null findings related to home dialysis in its first year? First, care redesign to shift dialysis into the home is complex and time-consuming, and many frontline nephrologists may still be unaware of the ETC model. In addition, growing a home dialysis program requires investments in physical space and changes in staffing, training, and organizational culture. In contrast, other mandatory models that have demonstrated rapid shifts in practice patterns within their first year, such as the Comprehensive Care for Joint Replacement Model, involved the care of relatively healthier patients than those with ESKD (in fact, those with ESKD were expressly excluded from the Comprehensive Care for Joint Replacement Model) and may have required less complex care redesign.

Second, since the Trump Administration announced the Advancing American Kidney Health Executive Order in 2019, many educational interventions to boost home dialysis have been disseminated nationally via nephrology conferences, which may have dampened effects in the ETC Model because changes could occur in ETC and non-ETC regions. Similarly, large dialysis chains spanning ETC and non-ETC regions may implement protocols to promote home dialysis across their entire chain. This is particularly problematic for ETC Model evaluation because dialysis is heavily consolidated, with more than 70% of dialysis facilities belonging to the 2 largest dialysis chains, so rapid widespread adoption and program spillovers are more likely than in other less consolidated health care sectors.

Third, ETC incentives may not have been strong enough to make home dialysis more profitable for dialysis facilities because of underappreciated operational costs, particularly for small programs that lack economies of scale. Addressing patient-related barriers with funding for housing and utility improvements, caregiver support, and staff assistance programs may also be necessary to drive further increases in home dialysis.

Given these multiple factors, it may be too early to draw firm conclusions about the ETC model’s future success. Randomized payment models like the ETC model are a major step forward to rigorously evaluate new policies. The ETC model may still be effective over time because dialysis facilities are predominately for profit (89% of facilities) and have been highly responsive to previous payment policy changes. Other ESKD-focused policies, including the ESRD Prospective Payment System and specialty-oriented accountable care organizations (the Comprehensive ESRD Care Model) have shown promise in improving quality and constraining costs for this population. The ETC model also incorporates innovative policy elements, such as an equity incentive and stratified benchmarks, that are designed to reduce disparities between patients with lower incomes (those dually eligible for Medicaid or who received the low-income subsidy) and those with higher incomes. These are key reasons to continue ongoing evaluations of this ambitious policy experiment, particularly along the several dimensions of the ETC model, including use of kidney transplant.

Subsequent evaluations should consider that randomized payment models operate pragmatically in real-world settings that are not fully controlled. In 2022, the Center for Medicare and Medicaid Innovation is implementing another alternative payment model, the voluntary Kidney Care Choices, which includes Medicare beneficiaries with chronic kidney disease and ESKD. It will be important to account for differential participation in the Kidney Care Choices model between ETC and non-ETC regions because both models share design elements, such as incentivizing optimal dialysis starts and transplantation. Similarly, if COVID-19 affected ETC and non-ETC regions to varying extents, pandemic-related factors could differentially affect home dialysis care. Another relevant consideration is enrollment of patients with ESKD into Medicare Advantage. Through the 21st Century Cures Act, patients with ESKD became eligible to enroll in Medicaid Advantage starting in 2021; a growing share are choosing this option and thereby excluded from the ETC model. Accounting for simultaneous interventions and potential confounding factors when evaluating the ETC model will be important in this rapidly shifting landscape.

Several other policy and research directions could be important to inform ETC implementation and refine interventions. First, mixed-methods evaluations using surveys and interviews may elucidate how nephrologists and dialysis facilities are attempting to redesign care and assess their
perceptions of the ETC model. Analyzing high performers in positive deviance studies could reveal nuanced, contextual information about facilitators of home dialysis. These strategies could be disseminated by the ETC Learning Collaborative, which currently fosters quality improvement in kidney transplant and could be expanded to support home dialysis. Second, longer-term analyses of home dialysis complication rates and hospitalizations can assess unintended consequences and ensure that patients less suitable for home dialysis are not being ushered toward these therapies. Third, understanding the effect of the ETC Model on disparities in home dialysis and transplant will be critical, especially after equity incentives begin in 2022.

The null findings of Ji and colleagues on home dialysis use in an early evaluation of a large-scale randomized payment model serve as a reminder of the complexity facing Medicare and policy makers in policy implementation and evaluation. Nevertheless, the ETC model remains a promising, ambitious experiment aiming to improve the care and outcomes for patients with ESKD. Further evaluation and monitoring will be key to assess US progress in advancing kidney health.

ARTICLE INFORMATION

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