

Border Health: State-Level Variation in Predialysis Nephrology Care

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For over four decades, Americans have enjoyed near universal access to treatment for ESRD irrespective of age, lack of qualifying disability, or their ability to pay. However, the health insurance benefits of the Medicare ESRD program do not extend to individuals in earlier stages of CKD, even to those for whom ESRD is imminent. Timely nephrology care before ESRD onset (predialysis nephrology care) has been linked not only to fewer biochemical abnormalities and increased use of an arteriovenous fistula or graft as initial vascular access, but more importantly, higher rates of kidney transplantation and lower rates of hospitalization and death compared with its absence (1–4). However, for many Americans, access to timely nephrology care remains elusive, particularly for members of vulnerable or traditionally underserved groups, such as racial-ethnic minorities, persons of severely limited socioeconomic means, and those who lack or churn in and out of health insurance coverage (1–3,5). Over one half of patients initiating ESRD treatment every year are estimated to belong to at least one of these underserved groups (6).

On March 23, 2010, President Barack Obama signed into law the Patient Protection and Affordable Care Act (ACA), which was enacted to increase the availability, quality, and affordability of health insurance by expanding public and private insurance coverage. Key features of the ACA include Medicaid expansion to households with incomes up to 138% of the federal poverty level, and subsidized private coverage from insurance marketplaces for households with incomes between 100% and 400% of the federal poverty level (Medicaid currently covers 70 million people in the United States at an average annual cost of \$475 billion) (7). In June of 2012, the US Supreme Court upheld the constitutionality of the ACA's individual insurance mandate while also ruling to allow states to opt out of Medicaid expansion. Before the first enrollment phase of the ACA, the nation's 43 million uninsured nonelderly residents were equally divided between the 31 states that have (to date) adopted the expansion and the 20 states that have not (8).

In this issue of the *Clinical Journal of the American Society of Nephrology (CJASN)*, Yan *et al.* (9) analyze registry data from the US Renal Data System to examine determinants of state to state variation in receipt of predialysis nephrology care (defined as nephrology care for 12 or more months before ESRD onset) among 373,986

adults who initiated ESRD treatment in the United States during 2005–2009. Leveraging patient-level data from the Centers of Medicare and Medicaid 2005 Medical Evidence Form (Form 2728-U3) on the presence and duration of nephrology care before ESRD treatment, Yan *et al.* (9) observed large interstate variation (10th–90th percentiles, 19%–42%) in receipt of predialysis nephrology care. Approximately one half to two thirds of this variation was attributable to state-level differences in general health care access, delivery of preventative care, and proxies of socioeconomic status. Among these indices, measures of general health care access, primarily the state's fraction of uninsured nonelderly adults and the scope and performance of its Medicaid program, accounted for roughly one third of the total interstate variation.

The findings by Yan *et al.* (9) align with and extend the observations of prior reports, which have linked predialysis nephrology care with area-based proxies of health insurance penetration, socioeconomic status, and racial-ethnic composition (10–13). Moreover, this study reinforces earlier observations by Kurella-Tamura *et al.* (12) that states with broader Medicaid coverage had smaller insurance-related gaps in predialysis nephrology care access and lower incidence of ESRD. In a large national survey of American adults, Sommers *et al.* (14) recently observed significant improvements in trends for self-reported coverage, access to a personal physician and medications, and health after the ACA's first and second open enrollment periods. Combined with the study by Yan *et al.* (9), these reports generate considerable optimism for timely improvements in nephrology care access for patients with advanced CKD, most importantly for those who reside in states that bear a disproportionate burden of ESRD but where relatively low levels of predialysis nephrology care were observed (*e.g.*, California, Illinois, and Pennsylvania). However, state-level delays in health insurance expansion are clearly bad news for many patients with progressive CKD and may further disadvantage vulnerable groups residing primarily in the South, where ESRD incidence is relatively high and access to predialysis nephrology care low compared with other regions of the nation.

The study by Yan *et al.* (9) also highlights deficiencies in the surveillance of health care provided to nonelderly adults with CKD in the United States. On the basis of their results, approximately 70% of adults initiating

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ESRD treatment were not in the care of a nephrologist during the 12 months preceding ESRD onset. Access was lowest for nonelderly blacks, only one quarter of whom received nephrology care 12 months before initiating ESRD treatment. For many nonelderly United States citizens or residents, the period leading up to ESRD represents a blind spot in CKD surveillance (15). This knowledge gap is particularly large for members of traditionally underserved groups who disproportionately receive their ambulatory care from charitable or publicly funded health clinics (*i.e.*, the health care safety net), where CKD metrics are not routinely measured or reported (16). Moreover, despite the central role of Medicaid in covering vulnerable populations, timely standardized encounter data, such as diagnoses, procedures, and measures of utilization, are largely unavailable for its enrollees (17).

Although the scope of state-level programs and socioeconomic health undoubtedly provides a platform for timely nephrology care, other factors likely play an equally important role in care access and delivery. For example, factors such as the supply, training, and availability of health care providers, as well as physical determinants, such as the proximity and resources of health care facilities, have been associated with care access and delivery before and after ESRD onset (18–20). The study by Yan *et al.* (9) did not adequately assess these issues. It is unsurprising that the study's proxies of health care resources, such as the number of primary care physicians or nephrologists per population within each state, were not associated with predialysis nephrology care (9); these measures assume equal within-state distribution (and access) and were likely too crude to yield meaningful information. Geographic properties, such as population density, similarly do not adequately capture spatial or physical barriers to care, such as travel distance or public access to health care facilities or facility-level health resources. Moreover, the study's estimates of nephrology care were solely on the basis of patients who lived to initiate treatment for ESRD (9). Most patients with CKD die before reaching ESRD, and differences in health policy and health care access likely play similarly important roles in determining premature mortality. Lastly, the study did not address interstate variation in the uninsured case mix (9): some states may need to focus particularly on constituents who are eligible for the subsidized plans, whereas other states will need to concentrate instead on reducing the Medicaid churning that results from economic fluctuations (21).

Despite these limitations, the study by Yan *et al.* (9) provides timely estimates of whether and to what extent variation in state-level policy and resources might influence access to predialysis nephrology care. In the wake of the ACA implementation, the nephrology community eagerly awaits additional studies investigating area- and individual-level changes in access to and quality measures of both primary and specialty care. As evidenced by the Medicaid expansion experiment in Oregon, better access to health insurance and services may not necessarily translate into immediate improvements in health or cost savings (22). Additional programs to optimize the management of CKD risk factors among high-risk, low-income populations, such as those instituted in the 1990s by the Indian Health Service, will likely be needed to successfully translate care access into measurable, population-level declines in ESRD (23). However, realizing high-value and -quality care for

low-income populations will require substantial reform and modernization of Medicaid, particularly its managed care programs, which collectively account for 70% of Medicaid beneficiaries (24). Standardizing data collection and reporting within and across state Medicaid programs will provide the foundation for identifying actionable items and sharing of promising innovations. Moreover, although we may learn much from the ACA about the effects of state-level changes in health insurance coverage on preparing patients for ESRD, we will need to encourage broader population health initiatives supported by updated, reliable data and systematic health promotion to reduce the excess morbidity, mortality, and costs associated with CKD. For the foreseeable future, states are likely to continue to vary in terms of not only nephrology care access and ESRD incidence but also, their willingness to step back from health policies that undermine their ability to achieve greater value and quality in caring for our nation's most vulnerable constituents.

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