

# Public Policy and Equal Access to Home Dialysis

Kerri L. Cavanaugh<sup>1,2</sup>

CJASN 14: 1128–1130, 2019. doi: <https://doi.org/10.2215/CJN.07560719>

The variation in home dialysis use at the local, regional, and even country levels has been widely recognized and attributed to differences in patient factors, clinician attributes, health care organizational access, and government policies (1). The use of home dialysis in the United States, which is 98% peritoneal dialysis (PD), has been increasing over the past decade after a nadir of 6% in 2006 (2). Beginning in 2009 and ultimately implemented in 2011, the ESKD Expanded Prospective Payment System (PPS) is a policy of the Centers for Medicare & Medicaid Services (CMS) that increased economic incentives for home dialysis by improving payment for home training and a relatively lower cost of bundled provision of care compared with in-center hemodialysis. Several observational studies since 2013 have reported an increase in the uptake of home dialysis to 8%–10%, although some of the studies focused on Medicare patients exclusively or acknowledged the lack of adjustments for potential associated patient, clinician, or regional factors. Few of these studies provide direct evidence in support of the mechanisms by which the increase in use is predominantly driven, although most hypothesize an investment in expansion by the dialysis organizations. Wang *et al.* (3) examined the US Renal Data System (USRDS) facility characteristics and did identify that, between 2011 and 2013, there were approximately 400 more dialysis facilities, that 42% offered PD (compared with 40%), and that those offering PD grew by approximately 1.5 patients. Indeed, PD program growth tended to be from larger programs affiliated with chain dialysis organizations, although a raw accounting of the proportion treated with home therapies within each organization by Golper (4) in 2013 found a wide range from 6.5% to nearly 20%. Recent remarks by Health and Human Services Secretary Alex Azar at the National Kidney Foundation Kidney Patient Summit highlighted that other countries deliver home dialysis to 56%–80% of their patients on dialysis and put forth a call to action to resolve its suboptimal use in the United States (5).

As the dialogue and actions specific to home dialysis expand, it is most important to ensure that any innovative resources, education, and strategies are inclusive of all patients with kidney disease. Disparities by race and ethnicity have been consistently recognized in nearly all areas of kidney disease, and

this includes that black and Hispanic patients are less likely to use home therapies compared with white patients (6). Although there are few studies examining potential mechanisms, the disparity is thought to be related to access to home therapies due to lack of provision by the dialysis organization in that area, educational and socioeconomic barriers, and low confidence by patients, perhaps due to the lack of a strong therapeutic alliance with their clinician, among others.

In this issue of CJASN, Shen *et al.* (7) address the important question of if implementation of the expanded PPS affected the previously observed disparities in home dialysis use by race and ethnicity. They too use the USRDS data to answer this question, but they go a step further and attempt to characterize regional neighborhood variables, such as the proportion of people in the zip code living in poverty or with less than a high school education, by linking to the American Community Survey (<https://www.census.gov/programs-surveys/acs>). They also characterize Medicare reimbursement, density of nephrologists, and number of dialysis facilities by hospital service area defined by the Dartmouth Atlas (<https://www.dartmouthatlas.org/>). In addition to this innovative multilevel characterization by combining trusted data sources, they also examine outcomes, including transfer to in-center hemodialysis, mortality, and kidney transplantation, among those who received home therapies by race and ethnicity. This was equally important to determine if health outcomes have changed over time after implementation of the expanded PPS. This study confirmed prior findings and observed during this period (2005–2013) that the use of home dialysis (98% PD) among incident patients increased overall from 7% to 10%. The use rose for all race and ethnicity groups, including nearly a 70% increase among Hispanic (5.7%–9.6%) patients, a 59% increase among black (5.2%–8.3%) patients, a 54% increase among Asian (9.2%–14.2%) patients, and a 32% increase among white (8.0%–10.6%) patients. Compared with white patients, differences were less over time for black and Hispanic patients, and they actually expanded for Asian patients. Importantly, these trends persisted in spite of rising prevalence of diabetes and obesity in adjusted analyses using the many unique variables derived from the linked databases or if evaluated 90 days after dialysis initiation. The trends in transfer to in-center hemodialysis, mortality, and kidney transplantation by each of the

<sup>1</sup>Division of Nephrology and Hypertension, Department of Medicine and <sup>2</sup>Center for Effective Health Communication, Vanderbilt University Medical Center, Nashville, Tennessee

#### Correspondence:

Dr. Kerri L. Cavanaugh, Vanderbilt University Medical Center, Center for Health Services Research, 2525 West End Avenue, Suite 450, Nashville, TN 37203. Email: [kerri.cavanaugh@vumc.org](mailto:kerri.cavanaugh@vumc.org)

racial/ethnic groups did not change over time. All minority groups demonstrated a lower risk for death compared with that in white patients, even in adjusted analyses, with the greatest among the most recent cohort of Asian patients (odds ratio, 0.58; 95% confidence interval, 0.48 to 0.70;  $P < 0.01$ ). The disparity in kidney transplantation (with less likelihood among black and Hispanic patients) persisted.

This study is important, because it suggests that broad-based initiatives, including implementation of policy not specific to health equity, may indeed be effective at improving opportunities for all patients to participate in the full spectrum of care options. In this context, there are not likely any potential mechanisms for the disparity by race or ethnicity that cannot be successfully addressed. Interestingly, the most recent ESKD PPS final rule acknowledges that >20 stakeholders submitted suggestions for ways to evaluate and hold accountable the practice of shared decision making to in part address health disparities in home dialysis use. No response was provided in this ruling, but it is likely that it will be represented in future years.

Shared decision making is an important process to align the preference, values and goals of a patient with their available treatment options. There is increasing recognition of the importance of this fundamental part of person-centered care, and it is now recognized in CMS policy as a condition of coverage for implantable cardioverter defibrillators, lung cancer screening with computed tomography, and left atrial appendage closure for stroke prophylaxis in atrial fibrillation (8). Although integration into clinical practice has been challenging in these contexts, it is likely that policy specific to shared decision making will expand to other conditions. This is especially relevant to discussions regarding treatment options for ESKD, where various educational programs, decision aids, and tools (both as paper versions and online portals) are emerging as resources to facilitate these conversations (9). Few studies to date have compared the effectiveness of these new innovations in subgroups by race or ethnicity. However, many include patient stakeholder input in their development, testing, and use, and furthermore, lessons learned from tools to support kidney transplant decision making and evaluation that are culturally sensitive will be useful to adapt to decisions about home dialysis.

An interesting observation is the higher prevalence of home dialysis use among Asian patients. It has been hypothesized that this may be a situation whereby familiarity with the modality due to friends or family within a social network may then lead to an increase in its uptake. Although this indeed may be an important factor, another consideration may be the trusted alliance between the patient and their nephrologist. The proportion of new patients on dialysis who were not under the care of a nephrologist before initiation remains unacceptably high; however, it is important that the patient trust the nephrologist and their other clinical providers to best engage in the shared decision-making process. Race/ethnicity concordance between the patient and the physician has been shown to affect visit adherence, medication adherence, and other health behaviors (10). Although physician communication style can attenuate trust barriers, this observation may also be a call to shore up our collective efforts to

diversify our nephrology workforce. The most recent report from the American Society of Nephrology (ASN) characterizing nephrology fellows shows that the most common racial group is Asian at approximately 40%, and this is closely followed by white nephrology fellows ([https://www.asn-online.org/education/training/workforce/Nephrology\\_Fellow\\_Survey\\_Report\\_2018.pdf](https://www.asn-online.org/education/training/workforce/Nephrology_Fellow_Survey_Report_2018.pdf)). Of the 394 respondents, only 6% identified as black. Dedicated efforts, such as those by the ASN, need to be continued to elevate our collective nephrology care efforts.

The authors acknowledge limitations, including potential unmeasured variables. They did exclude nearly 15% of the USRDS cohort, because they were missing information about nephrology care; however, they addressed this with statistical modeling. This is an informative study but one that should not lead to feeling at ease, because there is still much work to be done to achieve the ultimate goal of health equity in kidney disease.

Fortunately, there is much excitement in kidney disease care at the moment, with many private companies investing in the development of new technology and strategies inclusive of home dialysis. Policy continues to favor home dialysis with the recent change that permits use of telehealth for home dialysis care visits not limited to a rural setting. Telehealth has also been demonstrated to be a feasible mode of carrying out shared decision making (11), perhaps easing the path for its adoption into practice in advanced kidney disease in the future. Thus, although disparities remain in the use of home dialysis by race/ethnicity in the United States, there is optimism that this will be a statistic of the past as we keep it front and center and show that health equity is an achievable outcome when the many talents, resources, and compassion of the nephrology community come together.

#### Disclosures

Dr. Cavanaugh has nothing to disclose.

#### References

1. Briggs V, Davies S, Wilkie M: International variations in peritoneal dialysis utilization and implications for practice. *Am J Kidney Dis* 74: 101–110, 2019
2. United States Renal Data System: *2018 USRDS Annual Data Report: Epidemiology of Kidney Disease in the United States*, Bethesda, MD, National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases, 2018
3. Wang V, Coffman CJ, Sanders LL, Lee SD, Hirth RA, Maciejewski ML: Medicare's new prospective payment system on facility provision of peritoneal dialysis. *Clin J Am Soc Nephrol* 13: 1833–1841, 2018
4. Golper TA: The possible impact of the US prospective payment system ("bundle") on the growth of peritoneal dialysis. *Perit Dial Int* 33: 596–599, 2013
5. US Department of Health & Human Services: Remarks to the National Kidney Foundation, 2019. Available at: <https://www.hhs.gov/about/leadership/secretary/speeches/2019-speeches/remarks-to-the-national-kidney-foundation.html>. Accessed June 30, 2019
6. Mehrotra R, Soohoo M, Rivara MB, Himmelfarb J, Cheung AK, Arah OA, Nissenson AR, Ravel V, Streja E, Kuttykrishnan S, Katz R, Molnar MZ, Kalantar-Zadeh K: Racial and ethnic disparities in use of and outcomes with home dialysis in the United States. *J Am Soc Nephrol* 27: 2123–2134, 2016
7. Shen J, Erickson K, Chen L, Vangala S, Leng L, Shah A, Saxena A, Perl J, Norris K: Expanded prospective payment system and use of and outcomes with home dialysis by race and ethnicity in the United States. *Clin J Am Soc Nephrol* 14: 1200–1212, 2019

8. Merchant FM, Dickert NW Jr., Howard DH: Mandatory shared decision making by the Centers for Medicare & Medicaid services for cardiovascular procedures and other tests. *JAMA* 320: 641–642, 2018
9. Davis JL, Davison SN: Hard choices, better outcomes: A review of shared decision-making and patient decision aids around dialysis initiation and conservative kidney management. *Curr Opin Nephrol Hypertens* 26: 205–213, 2017
10. Ma A, Sanchez A, Ma M: The impact of patient-provider race/ethnicity concordance on provider visits: Updated evidence from the medical expenditure panel survey [published online ahead of print June 24, 2019]. *J Racial Ethn Health Disparities* doi: 10.1007/s40615-019-00602-y
11. Metz M, Elfeddali I, Veerbeek M, de Beurs E, Beekman A, van der Feltz-Cornelis C: Effectiveness of a multi-faceted blended eHealth intervention during intake supporting patients and clinicians in shared decision making: A cluster randomised controlled trial in a specialist mental health outpatient setting. *PLoS One* 13: e0199795, 2018

Published online ahead of print. Publication date available at [www.cjasn.org](http://www.cjasn.org).

See related article, “Expanded Prospective Payment System and Use of and Outcomes with Home Dialysis by Race and Ethnicity in the United States,” on pages 1200–1212.