

ESKD Treatment Choices Model: Responsible Home Dialysis Growth Requires Systems Changes

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The Advancing American Kidney Health (AAKH) initiative has four major goals: early detection of CKD, preventing CKD progression, promoting kidney transplants, and increasing home dialysis (1). The AAKH has undoubtedly increased excitement among the nephrology community, specifically as it relates to home dialysis. Because the initiative has the potential to dramatically change the face of nephrology care in the United States, it is critical that all steps be taken to ensure its success. Poorly executed efforts to rapidly increase home dialysis without promoting and funding a robust infrastructure may result in suboptimal outcomes, thus having an unintended, prolonged negative effect on home dialysis. Herein, we evaluate the feasibility of the proposed payment model to support the growth of home dialysis and its associated infrastructure, potential unintended consequences of rapid home dialysis growth, the importance of maintaining patient choice in modality selection, and propose adjunctive programs to ensure a safe and sustainable growth in home dialysis.

The AAKH initiative proposes a mandatory payment model, the End Stage Kidney Disease Treatment Choices Model (ETC), which will randomize new ESKD starts during 2020–2022 into one of two treatment arms (Figure 1). Centers allocated to the ETC arm will receive a financial incentive or penalty on the basis of performance metrics, in particular the fraction of total dialysis beneficiary years that are on home dialysis. Specifically, there will be 3%, 2%, and 1% Home Dialysis Payment Adjustment in calendar years 2020, 2021, and 2022, respectively. Furthermore, there will be a Performance Payment Adjustment with a possible upward adjustment of 5% and downward adjustment of 8% to the facility and a possible upward adjustment of 5% and downward adjustment of 6% to the provider in periods 1 and 2, with subsequent adjustments in future periods. Furthermore, those in the ETC model would receive an incentive payment for kidney transplant up to \$15,000 over the first 3 years of transplant. Those randomized to the Conventional Payment Model will continue to be paid under the existing payment model. The proposed primary end point is the proportion of patients with ESKD on home dialysis or receiving a kidney transplant (<https://www.kidneynews.org/kidney-news/policy-update/the-advancing-american-kidney-health-initiative-payment-models-public-awareness-initiative>).

This is not the first government attempt to increase peritoneal dialysis (PD) utilization using incentives (Table 1). The 1983 composite rate provided the same reimbursement for hemodialysis and home dialysis. Next, the 1990 Omnibus Budget Reconciliation Act further incentivized PD by paying 130% of the median composite hospital rate of in-hospital hemodialysis. Most recently, the 2011 ESKD Prospective Payment System (PPS) provided additional incentives for home dialysis. Previously, although per treatment Medicare payments were identical for both dialysis modalities, there was a large incentive for in-center hemodialysis due to separate reimbursement for dialysis medications, such as erythropoietin, iron, and vitamin D. The PPS pays a single bundled rate for dialysis treatments and drugs; because patients on PD used fewer dialysis medications, profit margins increased substantially for dialysis providers, but it was relatively cost neutral for physicians (2). In the first 3 years after the PPS implementation (2011–2013), early initiation of home dialysis (within 90 days of ESKD) increased modestly from 9.4% to 12.6% (3). In summary, multiple payment incentive plans have produced fairly limited increases in PD (Figure 2).

The ETC model, similar to previous models, provides significant financial incentives to improve home dialysis utilization. However, although the adjustments for the nephrologist and the dialysis provider are proportionally similar, the absolute value of incentives is far greater for the dialysis provider given the greater total reimbursement for treatments. Although the ETC incentivizes the dialysis provider and nephrologists, it does little to incentivize key non-nephrologist components of a successful home dialysis program, which could be detrimental given the aggressive timeline of 80% incident home dialysis or transplantation by the end of 2025.

A successful PD program requires a comprehensive infrastructure that, at a minimum, includes operators trained in PD catheter insertion and revision, a key omission from the ETC incentives. Many centers struggle to find one operator to place these accesses, let alone a group capable of placing the volume of catheters needed for this initiative. Revision of PD catheters is just as concerning a problem as placement because this requires primarily urgent surgical interventions to ensure technique survival. Incentives for operators with

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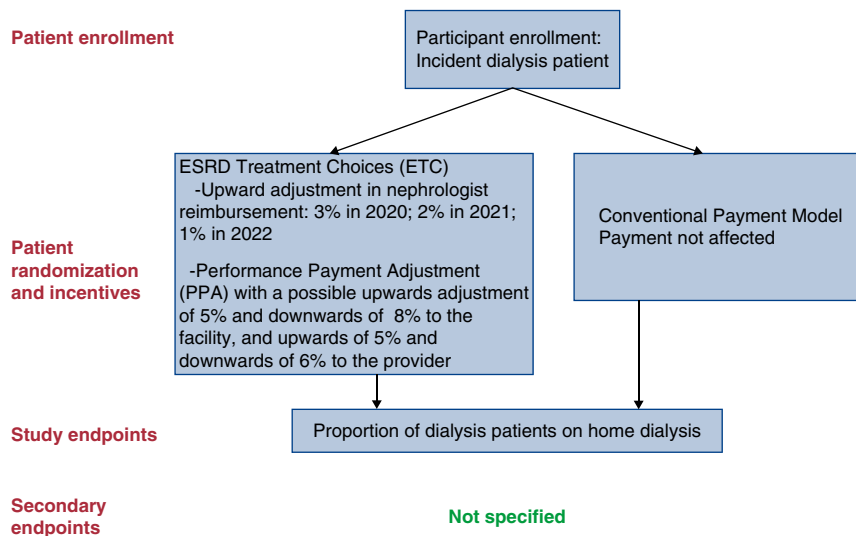


Figure 1. | Key features of the ESRD Treatment Changes (ETC). ESRD, ESKD.

performance bonus would be highly advisable to ensure the success of the ETC. Currently, numerous hospitals lack the ability to care for patients on home dialysis, including trained staff, nephrologists, and stocked home dialysis supplies. Incentives for these hospitals to care for patients on home dialysis would also help ensure the success of the ETC. Patients on home dialysis needing rehabilitation or skilled nursing facilities are often transitioned to in-center hemodialysis due to lack of this service. There is no provision for nursing facilities to offset costs of nurse training required to care for patients on PD. Assisted PD makes PD possible in many patients with mental or social barriers, thereby increasing the pool of potential patients on home dialysis (4). It is currently offered in Canada and several European countries (4,5), but it is not offered in the United States. Assisted PD adds substantial costs for the personnel who visit the patients’ homes twice daily to initiate and terminate PD sessions. The annual cost of assisted PD was about \$17,000 in France and Denmark and \$9000 in Canada in 2006. Although introduction of assisted PD may substantially increase PD use (6), there is no provision in the AAKH to pay for assisted PD.

There is concern that a rapid rise in the use of home dialysis may lead to increased technique failure rates. An initial study that looked at the effect of the PPS on technique failure rates showed no change in these rates from 2011 to 2013, indicating an early success for the PPS (3). However, a more rapid increase in home dialysis utilization in a health care system not ready for this influx may lead to poor outcomes. United States nephrology fellows undergo limited PD training (7). Not surprisingly, nearly half of United States nephrologists do not feel competent to care for patients on PD (8). Accommodating a dramatic increase in PD starts will require training nephrologists not just in initiation but also, in the long-term maintenance of home dialysis. Awaiting new nephrologists with better training will be too late, however, to achieve the desired home dialysis growth. Outcomes in larger home dialysis centers are superior to those in smaller home dialysis centers in terms of lower technique failure rates and mortality (9–13). Strategies to improve the success of the ETC include the funding of Project Extension for Community Healthcare Outcomes (ECHO) to disseminate expertise from centers of excellence to smaller sites (14). Furthermore, support for home dialysis fellowships through postgraduate funding could go a long way to increase home dialysis expertise in this country.

Although most nephrologists believe that PD offers improvements in quality of life and autonomy and that it should be offered to every patient on dialysis, there may be valid reasons that patients decline PD. These include concerns about social isolation, reluctance to do daily dialysis, feeling overwhelmed by having to do it all by themselves, or fear of an emergency. There is a critical need to increase access to such education by allowing the Kidney Education Benefit to be provided over telehealth in the patients’ home and payment of peer mentors. Development and adoption of appropriate and standardized education are necessary for all dialysis modalities. It is crucial to ensure patient choice in modality selection and ensure transparency in dialysis education to avoid coercion due

Table 1. History of government policies to increase home dialysis use in the United States

Policy (Year)	Key Features
Composite rate (1983)	Same reimbursement for HD and home dialysis
Omnibus Budget Reconciliation Act (1990)	PD payment =130% of median composite payment for in-hospital HD
Prospective Payment System (2011)	Bundled payment for dialysis treatment and medications
Advancing American Kidney Health (2020)	Up to 3% increase in reimbursement for home dialysis

HD, hemodialysis; PD, peritoneal dialysis.

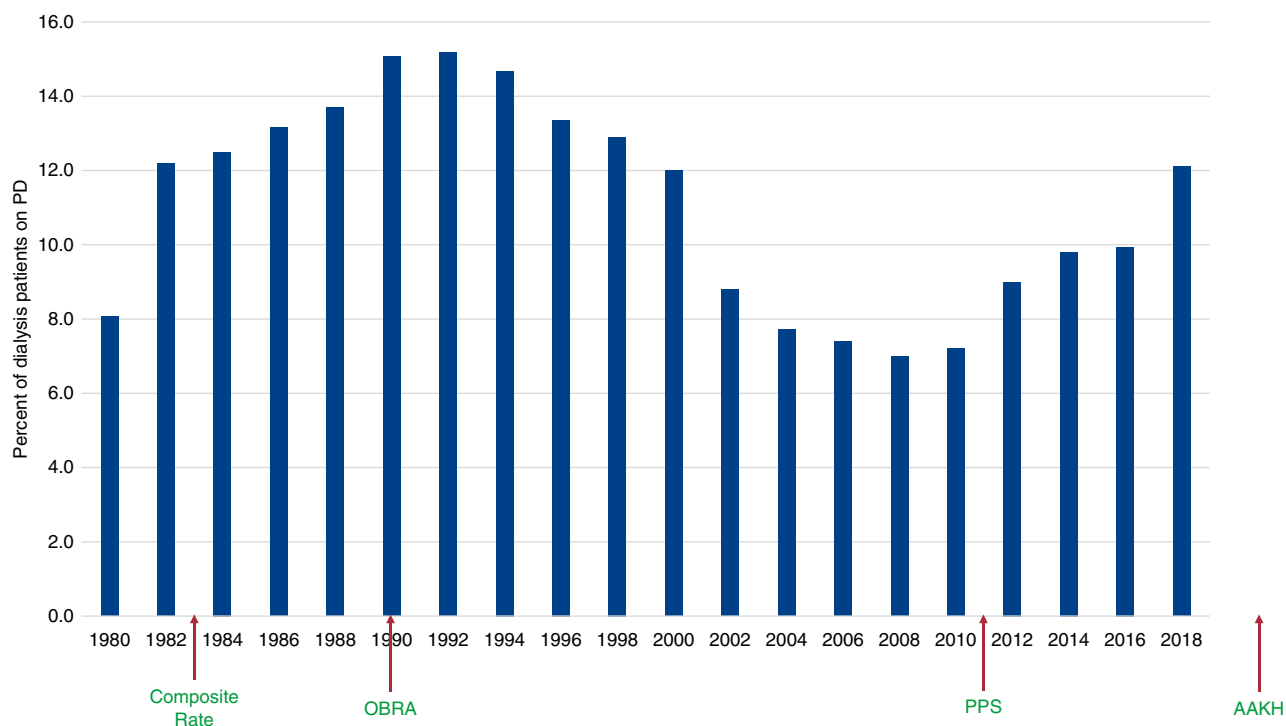


Figure 2. | Peritoneal dialysis (PD) utilization has remained fairly constant over the past decades, despite policy initiatives intended to increase its use. AAKH, Advancing American Kidney Health; OBRA, Omnibus Budget Reconciliation Act; PPS, Prospective Payment System. Modified from ref. 15 with permission.

to financial gain. Because the AAKH initiative is revenue neutral, any increase in payments for patients starting home dialysis will be counterbalanced by penalties to underperforming sites. These incentives underscore the need for patient advocacy to ensure patient choice and transparency in joint ventures.

To maximize the success of the AAKH, we urge the government to increase funding for initiatives to build the requisite infrastructure and track multiple clinical outcomes (Table 2). We recommend (1) systematic complementary incentives for operators who place and revise PD catheters, (2) systematic complementary incentives for

hospitals that provide home dialysis, (3) systematic complementary incentives for nursing facilities that care for patients on home dialysis, (4) removal of the originating site restrictions for the kidney disease education and transplantation care for telemedicine, (5) funding of Project ECHO related to home dialysis, (6) development of standard education for all patients with CKD stage 4, and (7) funding of assisted PD. These steps are critical to achieve the desired goal of increasing home dialysis while at the same time, ensuring that patient outcomes are not jeopardized.

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M. Allon wrote the original draft, and E.L. Wallace reviewed and edited the manuscript.

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Table 2. Additional features that may enhance the success of Advancing American Kidney Health

Additional Features
Payment for assisted PD Subsidizing telemedicine for patients on PD in remote locations Training of nephrologists for PD Training of surgeons for PD catheter procedures Training of PD nurses
Collection of secondary end points Death Hospitalization Catheter infections Overall health care costs Quality of life
PD, peritoneal dialysis.

References

1. Patel S, Boehler A, Uehlecke N: A vision for advancing American kidney health: View from the US department of health and human services. *Clin J Am Soc Nephrol* 14: 1789–1791, 2019
2. Weiner DE, Watnick SG: The 2009 proposed rule for prospective ESRD payment: Historical perspectives and public policies—bundle up! *Am J Kidney Dis* 55: 217–222, 2010
3. Sloan CE, Coffman CJ, Sanders LL, Maciejewski ML, Lee SD, Hirth RA, Wang V: Trends in peritoneal dialysis use in the United States after Medicare payment reform. *Clin J Am Soc Nephrol* 14: 1763–1772, 2019
4. Oliver MJ, Quinn RR, Richardson EP, Kiss AJ, Lamping DL, Manns BJ: Home care assistance and the utilization of peritoneal dialysis. *Kidney Int* 71: 673–678, 2007
5. Dratwa M: Costs of home assistance for peritoneal dialysis: Results of a European survey. *Kidney Int Suppl* 73: S72–S75, 2008
6. Oliver M, Salenger P: Making assisted peritoneal dialysis a reality in the United States: A Canadian and American viewpoint [published online ahead of print December 18, 2019]. *Clin J Am Soc Nephrol* doi:10.2215/CJN.11800919
7. Mehrotra R, Blake P, Berman N, Nolph KD: An analysis of dialysis training in the United States and Canada. *Am J Kidney Dis* 40: 152–160, 2002
8. Berns JS: A survey-based evaluation of self-perceived competency after nephrology fellowship training. *Clin J Am Soc Nephrol* 5: 490–496, 2010
9. Schaubel DE, Blake PG, Fenton SS: Effect of renal center characteristics on mortality and technique failure on peritoneal dialysis. *Kidney Int* 60: 1517–1524, 2001
10. Guo A, Mujais S: Patient and technique survival on peritoneal dialysis in the United States: Evaluation in large incident cohorts. *Kidney Int Suppl* 88: S3–S12, 2003
11. Huisman RM, Nieuwenhuizen MG, Th de Charro F: Patient-related and centre-related factors influencing technique survival of peritoneal dialysis in The Netherlands. *Nephrol Dial Transplant* 17: 1655–1660, 2002
12. Mehrotra R, Khawar O, Duong U, Fried L, Norris K, Nissenson A, Kalantar-Zadeh K: Ownership patterns of dialysis units and peritoneal dialysis in the United States: Utilization and outcomes. *Am J Kidney Dis* 54: 289–298, 2009
13. Afolalu B, Troidle L, Osayimwen O, Bhargava J, Kitsen J, Finkelstein FO: Technique failure and center size in a large cohort of peritoneal dialysis patients in a defined geographic area. *Perit Dial Int* 29: 292–296, 2009
14. Zhou C, Crawford A, Serhal E, Kurdyak P, Sockalingam S: The impact of Project ECHO on participant and patient outcomes: A systematic review. *Acad Med* 91: 1439–1461, 2016
15. US Renal Data System: *USRDS 2016 Annual Data Report: Atlas of Chronic Kidney Disease and End-Stage Renal Disease in the United States*, Bethesda, MD, National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases, 2016