1 INTRODUCTION

In 1972 an amendment to the Social Security Act made nearly all patients in the United States with end-stage renal disease (ESRD) eligible for Medicare regardless of their age and disability status.1 In July 1973, when the new law was implemented, Medicare coverage was extended to more than 90% of individuals with ESRD requiring dialysis or transplantation. In the four decades since Medicare’s ESRD program began, policy makers have periodically adjusted the mechanism of reimbursement for nephrologists providing maintenance dialysis care. Yet, there are opportunities for further improvements.

2 EARLY PHYSICIAN REIMBURSEMENT MECHANISMS

Perhaps due to the federal government’s prominent role in financing and bearing the high costs of ESRD care, and an associated interest in cost containment, payments for dialysis services in the United States have frequently deviated from the traditional fee-for-service reimbursement used in most other areas of US healthcare delivery. In the case of dialysis facilities, departure from fee-for-service reimbursement began with enactment of a Composite Rate payment “bundle” for dialysis services in 1982, followed by its expansion in 2011. In the case of physician reimbursement, departure
from fee-for-service payment began in 1973 at the very start of Medicare's ESRD program.

Physicians supervising outpatient dialysis at the time were reimbursed through what was described as the "Initial" payment method. Under the Initial payment method, Medicare reimbursed dialysis facilities for physician services, and nephrologists negotiated fees separately with dialysis facilities. Many nephrologists were dissatisfied with the negotiation process and argued that they were unfairly singled out as the only physician specialty that Medicare did not pay directly. The Healthcare Finance Administration (HCFA)—which would later become the Centers for Medicare and Medicaid Services (CMS)—subsequently added the option of an "Alternative" reimbursement method (ARM). The ARM provided nephrologists a direct fixed monthly payment per patient for routine outpatient dialysis care. Under the ARM, payment was slightly less for home dialysis compared to in-center dialysis due to the presumption that home dialysis was less time intensive.²

From the perspective of Medicare, both of these early payment mechanisms for physician services represented a form of capitated payment, where nephrologists (or dialysis facilities in the case of the Initial payment method) received the same monthly reimbursement regardless of the quantity of services that physicians provided.

### 3 | Transition to the MCP and Physician Fee Schedule

In 1983, HCFA replaced the Initial and ARM payment mechanisms for physician services with the Monthly Capitation Payment (MCP) payment model.² The MCP continued to reimburse all outpatient dialysis services provided in a given month in one payment and eliminated the reimbursement discrepancy between in-center and home dialysis.

The next major shift in reimbursement for nephrologists occurred following passage of the Omnibus Budget Reconciliation Act of 1989, which mandated that Medicare transition to a Physician Fee Schedule that derived physician fees using a resource-based relative value scale (RBRVS).³ This was part of a broader effort to link physician reimbursement to resource use and to decrease long-term Medicare spending for physician services.

In 1991, the American Medical Association created the Relative Value Scale Update Committee (RUC) in order to give clinicians an opportunity to participate in the RBRVS system. The RUC comprises approximately 30 voting physician members and more than 300 physician and staff advisors from multiple specialties. This committee is tasked to make recommendations to CMS on resource use and periodically reviews codes for medical procedures and services, including newly created codes and codes deemed potentially misvalued.⁴ Its assessments of resource use focus on three areas: physician work, practice expenses, and professional liability. This process involves reviewing surveys administered to specialty society members on how physicians view the effort for a given service relative to others. Historically, CMS has accepted approximately 90% of RUC recommendations.⁴,⁵

The shift to using a RBRVS and involvement of the RUC in recommending reimbursement rates applied to physicians in nearly every area of healthcare delivery, including physicians providing dialysis care. Prior to 1992 (the year that the RBRVS system was implemented), reimbursement rates were derived from surveys of local charges and could vary widely across regions for identical services. Application of the RBRVS system to the MCP standardized the process of determining payment for dialysis services provided by physicians⁶ (Figure 1).

### 4 | Evaluating a Move to Tiered Fee-For-Service Reimbursement

In 2004, CMS once again reformed physician reimbursement for outpatient dialysis (the MCP), this time moving from monthly capitated rates to a tiered fee-for-service system. Under the new system, monthly payments to physicians for outpatient dialysis care varied...
According to how many times a nephrologist saw a patient in a given month, up to four times per month. Advanced Practitioners (physician assistants and nurse practitioners) could see patients for all but one of the monthly visits without affecting the reimbursement amount. According to statements by CMS at the time, the decision to move toward fee-for-service reimbursement reflected—in part—hopes that economic incentives to see patients more frequently would, “align the payment incentives,” and “improve the quality of care and outcomes.”

Temporary “G” codes for the ESRD MCP were established to reflect these changes, which were later replaced by more permanent CPT codes in January 2009 following the standardized review process by the AMA RUC. These CPT codes are used today for monthly physician and advanced practitioner outpatient dialysis services.

Compared to MCP reimbursement rates prior to 2004, under the tiered fee-for-service reimbursement system physicians could increase their professional fee revenues by seeing patients receiving in-center hemodialysis four or more times per month. No documentation of medical necessity was required in order to justify frequent face-to-face visits. The frequency of monthly visits appears to have increased following the policy change. In one analysis of 12 dialysis facilities in Ohio, mean face-to-face visits from nephrologists doubled immediately after the reimbursement reform. At a national level, the proportion of patients seen four or more times per month continued to increase in the first 3 months of 2004. Nephrology practices also began hiring Advanced Practitioners to assist with outpatient dialysis visits. Between 2004 and 2013, approximately 76% of nephrology practices nationwide reported working with one or more Advanced Practitioner.

Among nephrology physician assistants surveyed in 2008, more than 90% of respondents reported treating dialysis patients and approximately 40% performed daily hemodialysis rounds.

Prior to the policy change, evidence linking more frequent face-to-face nephrologist visits with health outcomes was limited and inconsistent. One small cross-sectional study conducted prior to 2004 suggested increased survival among patients seen more frequently by their nephrologist. A second study observed increased satisfaction among patients when seen more frequently but did not demonstrate significant differences in overall ratings of care, hospitalizations rates, quality of life, or mortality.

Since the 2004 reimbursement change, analyses of face-to-face visit frequency based on Medicare claims have highlighted some instances where more frequent practitioner visits are associated with improved health outcomes. Increased frequency of face-to-face visits were associated with reduced 30-day hospital readmissions, with one additional provider visit in the month following hospital discharge predicting a 3.5% lower absolute probability of a 30-day hospital readmission. Among patients starting dialysis, those seen more frequently in the first 3 months of dialysis were also more likely to undergo earlier placement of arteriovenous fistulas and grafts.

Despite some instances where more frequent visits may lead to improved health outcomes, the benefits of increased face-to-face practitioner visits in the overall dialysis population are limited. An analysis of health outcomes at the national level in 2003 through 2006 that included nearly all Medicare patients receiving dialysis did not find any association between practitioner visits and mortality and only observed small reductions in the relative risk of hospitalizations among patients seen four or more times per month.

To the extent that patients seen more frequently may benefit in certain select settings (eg, following hospital discharge and soon after initiating dialysis), this did not translate into meaningful improvements in health outcomes at the population level, and there is no evidence that the policy of paying physicians to see patients more frequently yields any benefits. While practitioner visits increased following the 2004 reimbursement reform, increased visits that occurred as a result of the reimbursement reform were not associated with a change in overall survival or listing of patients for kidney transplant. Similarly, a survey of dialysis facilities administered before and after the policy reform indicated that, despite a doubling in the frequency of practitioner visits after January 1, 2004, there was no significant change in clinically important parameters related to quality of care or health-related quality of life. Finally, in an analysis of hospitalization trends before and after January 1, 2004, there was no change in adjusted rates of hospitalization or 30-day hospital readmission among prevalent dialysis patients following reimbursement reform.

The discrepancy between observed benefits from more frequent face-to-face visits in certain settings in cross-sectional analyses and the absence of any meaningful benefits at the population level and in the context of reimbursement reform suggests that not all visits are the same. In particular, paying for a “process” (ie, physician visit) may not yield the same benefits that are observed when this activity occurs for other reasons, such as clinical need. An international survey found that duration of time spent with patients receiving hemodialysis was more closely associated with improved patient health outcomes than the frequency of visits.

Descriptions of dialysis care after 2004 as primarily “checking off boxes” are consistent with the notion that more frequent visits may not always provide additional value. In fact, an analysis of visit frequency variation following 2004 indicates that many patients who would most likely benefit from more frequent visits (eg, patients who spend more time in the hospital and those who are new to dialysis) are in fact seen less frequently. Thus, paying for more visits may not have led to more attention devoted to caring for patients who would benefit from it.

The transition to a tiered fee-for-service payment system in 2004 may have also had unintended consequences. Patients seen more frequently had more interventions aimed at fixing vascular access without any change in overall access survival. A relative decline in payment to physicians for home dialysis (compared to 4 or more visits/month in-center) may have discouraged home dialysis use. One analysis found that patients living in areas where it was easiest for clinicians to increase revenue through four monthly in-center hemodialysis visits experienced decreased likelihoods of being assigned to peritoneal dialysis compared to those living in remote areas where physicians were less able to increase revenues through more frequent in-center visits. For example, patients living in areas with smaller dialysis facilities (where the cost of frequent
face-to-face visits is higher) had a 5.8% probability of initiating peritoneal dialysis both before and after the 2004 reform. In contrast, patients living in areas with larger dialysis facilities (where physicians could more easily see patients four times per month on dialysis) had a 6.6% probability of home dialysis in the 3 years prior to 2004 and a 5.6% probability of home dialysis in the 3 years following the reform. This is consistent with findings based on provider interviews included in a US Government Accountability Office (GAO) report. The GAO describes a general decline in the percentage of dialysis patients receiving home dialysis between 1988 and 2008, reaching a low of 9% in 2008. Among a variety of factors contributing to this decline, the GAO notes relatively lower Medicare monthly payments to physicians for managing patients on home dialysis compared to in-center dialysis (Table 1).23

The 2004 reforms to the MCP likely came with an economic cost. One estimate based on reported nephrologist and Advanced Practitioner wages suggested that increased time spent providing outpatient dialysis visits cost between $13 to $87 million per year in time and effort that could have been devoted to more productive activities. The variation in estimated costs depended upon how much additional time was spent providing outpatient dialysis care and how much of the additional time and effort involved physicians versus Advanced Practitioners. Unfortunately, the absence of data on visit frequency prior to policy reform makes this difficult to assess in detail.

While the manifestations of these economic costs are not always easy to detect, two areas where they could appear are: (a) through decreased quality and quantity of nephrology care in other settings (eg, chronic kidney disease clinic, hospital care) and; (b) declines in job satisfaction among current practitioners as they spend more time to earn the same revenue and subsequent declines in the quality and quantity of practitioners entering the field.

### 5 | FUTURE PAYMENT FOR OUTPATIENT DIALYSIS CARE

In its proposed rules in 2017 and 2018, CMS described MCP-designated reimbursement for home dialysis as “misvalued.” Others have called for a broader revision to the MCP system of fee-for-service payment. Recently, the department of Health and Human Services and Trump Administration announced an initiative to modify reimbursement to nephrologists and nephrology Advanced Practitioners in order to promote home dialysis, transplantation, and optimal transitions to ESRD. The absence of an observed benefit from changes in care delivery associated with the current system of reimbursement, associated inefficiencies in how nephrology practitioners currently allocate their time and effort, and the potential for unintended health and economic consequences, are all reasons to revisit the economic incentives around outpatient dialysis care.

### TABLE 1 Published cross-sectional and policy analyses of health outcomes associated with more frequent practitioner visits to patients receiving maintenance dialysis

<table>
<thead>
<tr>
<th>Study</th>
<th>Population</th>
<th>Time period</th>
<th>Findings associated with more frequent visits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smaller cross-sectional analyses prior to policy reform</td>
<td>McClellan et al, 199812 213 Dialysis facilities in the southeast</td>
<td>1994</td>
<td>Increased survival</td>
</tr>
<tr>
<td></td>
<td>Plantinga et al, 200413 735 Patients at 75 dialysis facilities</td>
<td>From 1995</td>
<td>Increased satisfaction and less nonadherence, but were not associated with survival, overall ratings of care, hospitalizations, or QOL</td>
</tr>
<tr>
<td>National cross-sectional analyses following policy reform</td>
<td>Erickson et al 201414 National cohort</td>
<td>2004-2009</td>
<td>Reduced probability of 30-day hospital readmission</td>
</tr>
<tr>
<td></td>
<td>Erickson et al 201515 National cohort (≥67 years old at the onset of dialysis)</td>
<td>2006-2009</td>
<td>Increased probability of AV fistula creation or graft placement in the first 3 months of dialysis</td>
</tr>
<tr>
<td></td>
<td>Slinin et al 201216 National cohort</td>
<td>2003-2006</td>
<td>No difference in mortality and no meaningful difference in hospitalizations (&lt;4% relative risk reduction from ≥ 4 visits)</td>
</tr>
<tr>
<td></td>
<td>Erickson et al 201521 National cohort</td>
<td>2004-2009</td>
<td>More interventions to preserve vascular access but no change in vascular access survival.</td>
</tr>
<tr>
<td></td>
<td>Erickson et al 201622 National cohort</td>
<td>2001-2007</td>
<td>Decreased likelihood of being assigned to peritoneal dialysis</td>
</tr>
<tr>
<td>Analyses of direct policy effects</td>
<td>Mentari et al 20058 2,043 patients at 12 dialysis facilities in the Midwest</td>
<td>2003-2004</td>
<td>No meaningful changes in: Kt/V, serum albumin, hemoglobin, phosphorus, calcium, catheter use, ultrafiltration volume, missed treatments, hospitalizations, HRQOL, or patient satisfaction.</td>
</tr>
<tr>
<td></td>
<td>Erickson et al 20149 National cohort</td>
<td>2001-2007</td>
<td>No change in mortality or kidney transplantation</td>
</tr>
<tr>
<td></td>
<td>Erickson et al 201717 National cohort</td>
<td>2002-2005</td>
<td>No change in adjusted rates of hospitalization or 30-day hospital readmission among prevalent dialysis patients</td>
</tr>
</tbody>
</table>
The current MCP includes a scope of activities that is broad, but that is not all encompassing. As outlined in the Medicare Benefits Manual this includes: assessing dialysis modality and transplant, facilitating placement of optimal vascular access, oversight of long-term planning, assessment and management of psychological status, and coordinating of multidisciplinary care.27,28 There are ample opportunities for nephrologists to increase the quality of care delivered within this set of activities. A goal of any effort to revise physician incentives around outpatient dialysis care and the MCP should include reallocating clinician effort toward the delivery of high-value services within the MCPs scope of activities.

Evidence supports several areas where clinicians can improve the care of patients receiving dialysis. Ideally, reform of physician reimbursement for maintenance dialysis services would encourage care delivery around these high-value activities. For example, more attention to patients early in the course of dialysis and soon after hospital discharge may lead to improved outcomes.14,29 Evidence suggests that education about different dialysis modalities and transplantation prior to the onset of ESRD can increase the likelihood that patients receive the best form of ESRD treatment for them, including home dialysis and kidney transplant.30,31 These benefits may extend into the early dialysis period, when patients are still in the process of adapting their lives to the chosen form of renal replacement therapy. Care coordination, medication reconciliation, and care planning, are other areas where clinicians can improve the quality of care.32,33 Nephrologists can also improve patients’ quality of life by facilitating palliative and end of life care.34-37

There are three promising mechanisms by which physician reimbursement could be reformed in order to encourage the delivery of higher value care. First, pay-for-performance (P4P) programs currently implemented and piloted in other areas of healthcare could be tailored to dialysis care. For instance, the Merit-based Incentive Payment System (MIPS) ties physician payments to value. Efforts to encourage high-value activities within MIPS could apply to nephrologists providing outpatient dialysis care though dialysis-specific quality and cost measures focused on physicians.

The recently announced Advancing American Kidney Health Initiative is another example of applying P4P to nephrology care.38 Based on the proposed rule the ESRD treatment choices (ETC) model includes financial incentives for home dialysis and transplantation.39 And, the recently announced Kidney Care First (KCF) model eliminates the tiered fee-for-service structure of the MCP in favor of a monthly capitated payment, while simultaneously holding providers accountable to performance on quality and resource utilization metrics. For these efforts to succeed, they will need to address challenges around attribution, risk adjustment, and a need for physician-focused quality metrics that are relevant to advanced kidney disease care.

In 2015, the Comprehensive ESRD Care (CEC) model was introduced as the only alternative payment model (APM) that is specific to ESRD. It was designed to identify and assess innovative methods to improve care for patients with ESRD through improved care coordination. There were 13 participating ESRD Seamless Care Organizations (ESCOs) for the 2016 performance year and 24 more in the second wave in 2017.40 Efforts to build upon this initiative could lead to improvements in physician services. The recently announced Comprehensive Kidney Care Contracting (CKCC) models build upon the ESCO experience by including the care of patients with advanced CKD. While increasing the share of Medicare beneficiaries that are included in Accountable Care Organizations (ACOs) could also lead to improved dialysis care, ACOs are generally focused more on primary care. The development of nephrology-specific quality measures and ESRD-specific benchmarking within ACOs could facilitate a greater focus among ACOs on improving ESRD care and could accelerate participation in the newer KCF and CKCC payment models.

Reform efforts aiming to improve the value of care delivery could also take place within fully capitated payment models, such as Medicare Advantage (MA). In other areas of healthcare, capitated payments systems have introduced incentives to increase the value of care delivered by physicians, including preventative services, immunizations, medications given during office visits, and health education and counseling.41,42 Currently, patients with ESRD are not able to enroll in MA care plans after they have developed ESRD unless they qualify for a Special Needs Plan (if available in their area), and possibly after kidney transplantation. Consequently, patients with MA constitute a relatively small proportion of the ESRD population (approximately 7.1% patients initiating dialysis in the US).43 However, in 2021, per the 21st Century Cures Act, patients with ESRD will have the option of switching to MA plans, which will likely increase the role of MA in dialysis reimbursement.44 MA plans could adapt initiatives directed toward physicians in other areas to encourage high-value care in outpatient dialysis.

Lastly, reform could also focus on the MCP itself, with modification of the current tiered fee-for-service model. Currently, variation in monthly MCP reimbursement depends on the number of visits and the type of practitioner who provides the monthly comprehensive visit. Since this variation does not appear to be closely associated with health outcomes, particularly when the variation has resulted from payment policy, economic incentives could be better aligned with value by enabling reimbursement to vary according to effort spent on other potentially high-value activities that are within the scope of the MCP. This could include varying payment according to effort spent on medication reconciliation, dialysis modality education, assessment of physical and psychological consequences of ESRD, and end of life planning. Activities that appear to be highest value—such as seeing patients in their first dialysis treatment following a hospitalization in order to review any events or changes occurring during the hospitalization and to reconcile those with the orders and documentation in the patient’s record—could be encouraged with an add-on payment. Reimbursing physicians for time spent on these activities could encourage clinicians to reallocate effort toward these potentially higher value services and improve overall care of ESRD patients. It would be important, however, to closely monitor for the expected improvements in outcomes that would result from these activities. As occurred in the case of paying for more frequent...
face-to-face visits, explicitly paying for these activities may not yield the benefits observed thus far in observational studies (Figure 2).

6 | CONCLUSION

Since the beginning of Medicare’s ESRD program, reimbursement for clinicians providing outpatient dialysis has departed from traditional fee-for-service payments. For much of the duration of the ESRD program, physician payments were largely capitated on a monthly basis. In 2004, the transition to a tiered fee-for-service payment system changed nephrology practices substantially by encouraging frequent face-to-face visits but without evidence of improved health outcomes and potential unintended consequences. Efforts to reform reimbursement for nephrologists are underway.

Within the scope of activities included in the MCP, there may be significant opportunities to encourage the delivery of high-value care. This could be done through a combination of new P4P programs including the ETC model, MIPS, and APMs, new incentive programs incorporated within fully capitated payment systems, and revisions to the MCP itself.

In July of 2019, an executive order announced along with the Advancing American Kidney Health Initiative has generated a spotlight on kidney disease care. This is an excellent opportunity to improve many aspects of kidney care, including the method of reimbursement for clinician services in the outpatient dialysis setting. To avoid the pitfalls associated with the 2004 reimbursement reform, it will be critical that future reforms are evaluated in a timely manner in order to ensure that paying for specific processes and outcomes actually translates into meaningful improvements in the health and quality of life of patients receiving dialysis.

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REFERENCES

6. Centers for Medicare & Medicaid Services (CMS). HH5. Medicare program; revisions to payment policies under the physician fee


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