THE POSSIBLE IMPACT OF THE US PROSPECTIVE PAYMENT SYSTEM (“BUNDLE”) ON THE GROWTH OF PERITONEAL DIALYSIS

Peritoneal dialysis (PD) as a treatment was and remains about \$20,000 per year less costly than in-center hemodialysis (1,2). That observation is not unique to the United States (3). In an effort to reduce US Medicare outlays for health care programs and to move away from fee-for-service reimbursement, the US Congress passed the Medicare Improvement for Patients and Providers Act in 2008. The act included a mandate that the Centers for Medicare and Medicaid Services (CMS) build a new prospective payment system (PPS) for the End-Stage Renal Disease (ESRD) Program. The payer (in this case, the government) rationale behind a prospective bundled payment as it broadly applies to other diseases or health settings has recently been well articulated by Feder (4).

Debuting in 2011, the dialysis bundle included a new reimbursement strategy to incent US dialysis providers to place more patients on PD. Under the near 25-year-old fee-for-service payment method for dialysis patients, the dialysis treatment payment had been set at a fixed rate, but injectable drugs [such as iron, erythropoiesis-stimulating agents (ESAs), and vitamin D analogs] and other components of the treatment were paid separately. The new PPS places most costs for dialysis care, especially the injected medications, within a bundle of services.

The CMS plan was openly discussed and debated; by the middle of 2010, its most important features were publicized, giving the dialysis community time to prepare for its implementation on 1 January 2011. To incent providers to place more patients on home dialysis, CMS set the bundled payment equal to that for an in-center treatment and agreed to start such payments as soon as the patient started home therapy.

Here, I detail the financial incentives for home dialysis and describe the impact they might possibly have had on the utilization of PD in the United States.

INCENTIVES

The PPS bundle makes a per-treatment equivalent payment of about \$235 for hemodialysis (HD), with some regional variation. There are some adjustments for case mix and comorbid conditions, and a 1.51 multiplier for

the first 120 days to cover home training (whether used or not), having to initiate an ESA, having to run longer times for access break-in, and so on. For PD, the daily payment is determined using the formula

$$(235 \times 3 \text{ HD equivalents per week}) / 7 \text{ days per week.}$$

If the patient chooses home dialysis after an initial start on in-center HD, and if home training occurs after the first 120 days and the 1.51 multiplier has expired, CMS pays a nominal home training fee. If by virtue of age or disability ESRD patients are not receiving Medicare at the time of dialysis start, ESRD as a condition might make them Medicare-eligible. However, payments for ESRD services would be withheld for 90 days. But if home dialysis training began in the 90-day period, Medicare would cover payments from the start of dialysis. As a result, for a patient starting in-center HD who is Medicare-eligible but not a Medicare participant, the first 90 days of the 1.51 multiplier would be unpaid. The same patient entering a home dialysis program would have the 1.51 multiplier paid from the first day of dialysis. To the dialysis facility, that difference is almost \$8,000 more for starting dialysis at home. For the nephrologist, it is about \$1,300 more for starting patients at home (3 months of lost monthly capitated payments and lost home training fee). Because Medicare is quite aware that PD is \$20,000 less than in-center HD annually, one can see why the incentives were planned as part of the PPS: the dialysis facility and the nephrologist both have financial incentives within the PPS bundle to grow PD.

As mentioned, the major features of the PPS were made public by the middle of 2010. Many organizations implemented strategies to take advantage of the financial incentives promoting home dialysis. In the United States, the growth of home HD had been stagnant until the development of a technically simple system that required the patient to undergo more frequent treatments. Medicare has not made national policy on whether it will pay for more than three HD treatments per week (regional policies exist), and so this form of frequent home HD has grown in a limited manner. But PD is a different story.

IMPACT

Even with the incentives for PD being well known by the middle of 2010 (before the bundle was enacted), a dramatic shift toward PD did not occur—in my opinion, simply based on the utilization history of PD in the United States. Nonetheless, most dialysis providers, especially the larger and more organized companies, clearly initiated systematic policies to encourage and expedite growth in home dialysis and, in particular, PD. To track that growth, I make use of the data directly provided by dialysis organizations to *Nephrology News & Issues* magazine each year as part of that publication's annual ranking of the largest dialysis providers in the United States, based on patient census (5).

The survey, started in 1994, obtains data on the number of patients by modality choice: in-center HD, PD, and home HD. These are prevalent patients as reported by the providers directly to the news magazine. For the 2013 ranking, *Nephrology News & Issues* looked at growth in the home modalities (PD plus HD) from 2011 to 2013 (Table 1). The data show that the growth of home dialysis was substantial in the first two years of the PPS bundle. When PD use in particular is examined pre-bundle (2009) and for 2013, very impressive growth in the prevalent PD population is observed for all the major dialysis providers (Table 2).

DISCUSSION

The US Renal Data System (USRDS) gathers information in many ways, including Medicare billing files, Medicare

eligibility form 2728, detailed facility level data from the ESRD Networks, and death certification. Those data are verified in great detail and are ultimately included in its Annual Data Report two years later. The data in my report come directly from the largest dialysis providers in the United States and represent two thirds of all the dialysis patients in the United States. The details of incident compared with prevalent patients are not known from the data presented here. It is unlikely that mortality rates and technique survival rates have improved enough to explain the growth in home therapies that I am suggesting. Thus, by implication, the growth is in new patients. From personal communication with Dr. Allan Collins of the USRDS, I understand that he expects the USRDS to find such growth when it finishes its analysis.

Many barriers to increasing the utilization of home dialysis in the United States remain (6–8). The financial incentives created by CMS have probably been the stimulus for the growth in home dialysis in general (Table 1) and in PD in particular (Table 2). If a PD program exists and if there are financial incentives for its growth, it will likely grow faster than home HD, for which there are fewer existing programs, regardless of the financial incentives. Furthermore, much of the home HD growth has been in short, frequent dialysis, where the cost savings are the smallest. Growth in home HD is therefore likely to lag the growth in PD.

Unless the barriers to home dialysis are addressed, the full benefit of the financial incentives may fail to materialize. In my opinion, the result will be a very negative and frankly chilling effect on future payment strategies and innovations. Medicare policies often influence

TABLE 1
Home Dialysis Patients by Provider, 2011 and 2013 (1)

Provider	2011 Home patients		2013 Home patients		Home growth
	(n)	(% of total)	(n)	(% of total)	(%)
Fresenius Medical Care North America	10 812	7.9	15 434	9.4	19
DaVita, Inc.	13 700	10.6	18 500	11.8	11
Dialysis Clinics, Inc.	1 252	9.3	1 483	10.6	14
American Renal Associates	565	8.0	884	9.3	16
DSI Renal	592	7.4	671	10.3	39
US Renal Care	390	6.6	603	8.7	32
Innovative Dialysis Systems	392	10.1	724	11.6	15
Satellite Healthcare	1 033	22.2	1 268	22.9	3
Renal Ventures Management	NA	NA	283	12.4	— ^a
Centers for Dialysis Care	NA	NA	NA	NA	NA

NA = not available.

^a Cannot calculate.

TABLE 2
Peritoneal Dialysis Patients by Provider, 2009 and 2013

Provider	2009 Patients			2013 Patients			Growth of PD, 2009 to 2013 (%)
	Total dialysis (n)	Total PD (n)	(%)	Total dialysis (n)	Total PD (n)	(%)	
Fresenius Medical Care North America	123 363	7 595	6.16	164 561	13 242	8.05	31
DaVita, Inc	114 500	9 000	7.86	157 000	15 700	10.0	27
Dialysis Clinics, Inc.	12 980	1 015	7.82	13 954	1 352	9.69	24
American Renal Associates	5 000	370	7.4	9 460	804	8.5	15
DSI Renal	7 692	410	5.33	6 540	585	8.95	68
Satellite Healthcare	4 009	673	16.79	5 537	1 077	19.45	16
Innovative Dialysis Systems	3 385	275	8.12	6 262	576	9.2	13
US Renal Care	3 196	169	5.29	6 910	453	6.56	24

commercial insurance policies and practices. The commercial insurance payer mix for home dialysis patients is typically higher than that for in-center HD by a factor of two or three. Furthermore, the payment rate to the facility is many times higher from commercial insurers than from Medicare. Thus, any negative effects on home dialysis utilization will have a profound effect on the facility's bottom line. The physician revenue situation parallels that of the facility. It therefore behooves the US dialysis community to get more patients into home dialysis so that the cost savings to the payer remain an incentive to the facility and physicians.

There is concern that sending patients into home dialysis may lead to underutilization of in-center HD stations, potentially creating a facility backlash countering the CMS financial incentives generated in the PPS. I think that, among the unenlightened and those biased against home dialysis, such a backlash could occur. That concern is partly addressed in the papers discussing the barriers to home dialysis (6–8). Chui *et al.* (9) tell us that, even when PD technique fails, PD costs less than in-center HD. The reasoning is therefore suspect when based on economics alone.

Just proposed by CMS in the summer of 2013 is a 9% reduction in the bundled payment, in part because ESA use has declined. Should the proposed payment reduction occur, it would further incent providers to look toward a more cost-efficient therapy and a less ESA-dependent therapy such as PD. However, it also establishes a precedent for reducing the bundled payment when CMS recognizes a lower expense to the facility. My concern is that CMS may one day reduce the payment for home dialysis because it costs less than in-center dialysis. The CMS might make the change directly, but taking such action would violate the intention of Congress to incent

home dialysis. I therefore think that CMS will do it subtly, by reducing all payments (in-center and home) under the justification that facility expenses are less than in previous years.

Thus, home dialysis is currently financially incented. A reduced bundled payment should further incent facilities to send patients home, but reduced facility payments may create pressure to fill in-center stations to pay fixed overhead. The precedent of reducing the bundled payment creates many uncertainties. My own view is that home modalities will slowly grow to a commonsense steady-state fraction of the dialysis population and that CMS, dialysis providers, patients, and nephrologists will see the wisdom and practicality of the situation. Time will tell.

DISCLOSURES

The author has no financial conflicts of interests to declare.

Thomas A. Golper

Division of Nephrology and Hypertension
Vanderbilt University Medical Center
Nashville, Tennessee, USA

email: thomas.golper@vanderbilt.edu

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