SECTION 2E

Assessing payment adequacy and updating payments for outpatient dialysis services

R E C O M M E N D A T I O N

The Congress should update the composite rate payment by the projected change in input prices, less 0.9 percent, for calendar year 2004.

***YES: 15 • NO: 0 • NOT VOTING: 1 • ABSENT: 1**

***COMMISSIONERS' VOTING RESULTS**

SECTION 2E

Section 2E: Assessing payment adequacy and updating payments for outpatient dialysis services

Current aggregate Medicare payments for outpatient dialysis services appear to be adequate. Together, payments for composite rate services and injectable drugs exceeded providers' costs by about four percentage points in 2001. We conservatively estimate that the aggregate payment-to-cost ratio will be no lower than 1.01 in 2003. However, aggregate payments relative to costs will probably decline by less than three percentage points between 2001 and 2003 because payments for injectable drugs and their profitability relative to composite rate services will continue to increase during this period. Market conditions—such as continued entry of for-profit freestanding providers, increases in the volume of services provided, lack of evidence of beneficiaries facing systematic problems in accessing care, continued improvements in the quality of dialysis care, and adequate access in providers' access to capital—strongly suggest that Medicare's outpatient dialysis payments are adequate, relative to efficient providers' costs. Based on this evidence, we see no need to adjust the base rate for composite rate services. To account for changes in providers' costs in the coming year, the Congress should update the composite rate for outpatient dialysis services by the change in input prices, currently estimated at 2.5 percent, less an 0.9 percent adjustment for growth in multifactor productivity, for calendar year 2004.

In this section

- Assessing payment adequacy
- Accounting for cost changes in the coming year
- Update recommendation

End-stage renal disease (ESRD) is a chronic illness characterized by permanent kidney failure. Occurring at the last stage of progressive impairment of kidney function, the illness is caused by a number of conditions including diabetes, hypertension, glomerulonephritis, and cystic kidney disease. Persons with ESRD require either chronic dialysis or a kidney transplant to maintain life. Because of the limited number of organs available for transplantation, the majority of ESRD patients receive chronic dialysis. The 1972 amendments to the Social Security Act extended Medicare benefits to people with ESRD, and more than 350,000 patients were enrolled in 2001.[1]

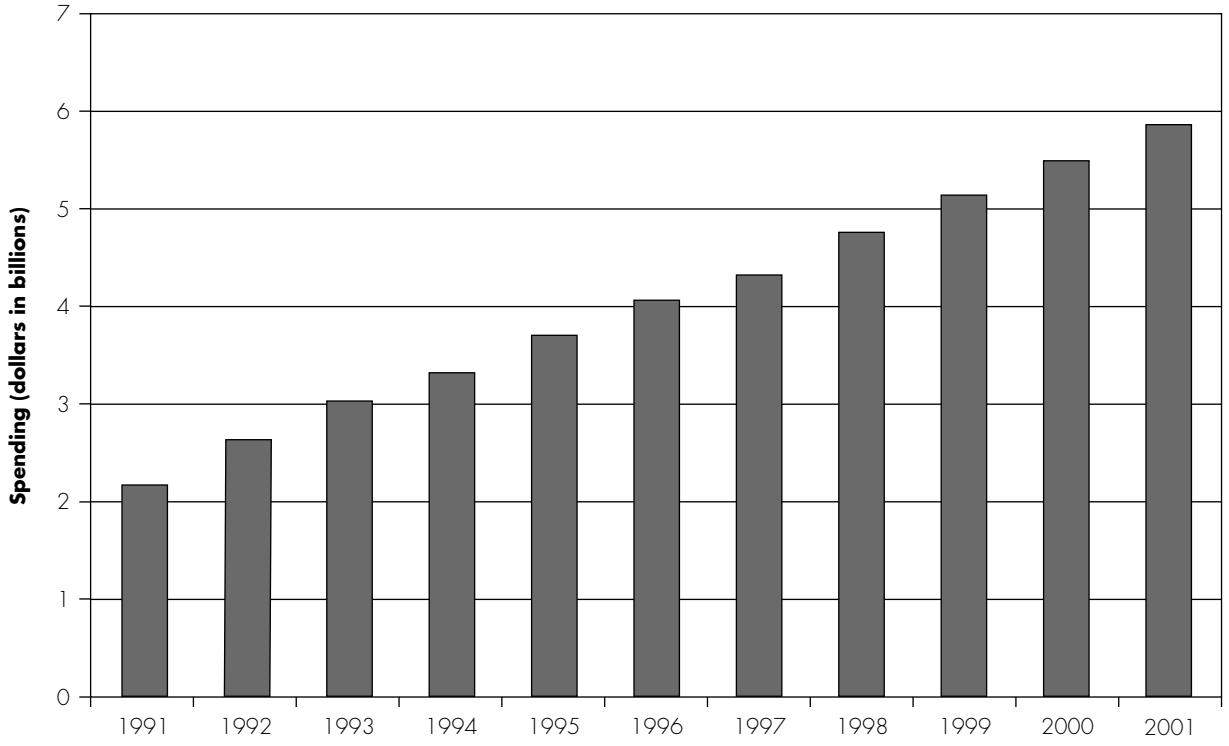
Medicare pays dialysis providers a prospective payment—the composite rate—for each dialysis treatment they provide in dialysis facilities (in-center) or in patients' homes.[2] The average composite rate in 2002 was about $130 for freestanding facilities. Providers receive a separate payment for furnishing certain injectable drugs during dialysis. The Congress has set the payment for erythropoietin, the costliest of these drugs in terms of spending by Medicare and beneficiaries, at $10 per 1,000 units whether it is administered in dialysis facilities or in patients' homes. Providers receive 95 percent of the average wholesale price (AWP) for separately billable injectable medications other than erythropoietin administered during in-center dialysis. Medicare's payments for injectable drugs averaged about $80 per dialysis treatment in 2001.

Medicare spending for outpatient dialysis services furnished by freestanding facilities increased by about 10 percent per year between 1991 and 2001 (Figure 2E-1).[3] Two factors that contribute to the growth in Medicare spending are the increasing size of the ESRD population and the diffusion of new technologies.

- Incident rates per million population have been increasing steadily since 1980 (United States Renal Data System [USRDS] 2002). For example, the number of new ESRD patients increased by about 7 percent annually between 1992 and 2000. Increasing incident rates have been linked to improvements in survival, as well as increases in the number of

FIGURE 2E-1

Medicare spending for outpatient dialysis services furnished by freestanding dialysis facilities, 1991–2001



Source: CMS, Office of the Actuary, 2002.

1 To qualify for the ESRD program, individuals must be fully or currently insured under the Social Security or Railroad Retirement programs, entitled to monthly benefits under the Social Security or Railroad Retirement programs, or the spouse or dependent child of an eligible beneficiary.

2 The composite rate was designed in 1983 to include all nursing services, supplies, equipment, and drugs associated with a single dialysis session.

3 Medicare spending includes program outlays and beneficiary cost-sharing.

people with diabetes, which is a risk factor for ESRD.

- New technologies—particularly injectable drugs, such as erythropoietin, iron supplements, and vitamin D analogues that were not available when the outpatient dialysis payment system was implemented in 1983—have also increased Medicare's spending for dialysis services. MedPAC estimates that spending for injectable drugs increased from $1.3 billion in 1998 to $2.3 billion in 2001.

The growth in spending for all Medicare-covered services for ESRD patients has increased from about $10 billion in 1994 to more than $15 billion in 2001. Because Medicare has kept the nominal price for composite rate services essentially fixed since the inception of the payment rate in 1983, spending for other services—particularly inpatient hospital services and care for vascular access complications and other chronic conditions (e.g., diabetes)—has significantly contributed to the growth in total spending.[4] Thus, it is important also to consider these services when thinking about ways to improve the quality of care and to control total spending for ESRD patients.

In addition, the growth in spending has been fueled by the increase in the number of people in the two most costly ESRD cohorts: (1) older beneficiaries, and (2) beneficiaries with multiple chronic comorbidities such as diabetes, hypertension, and congestive heart failure. The proportion of new ESRD patients who are 75 years and older grew from 18 percent in 1991 to about 25 percent in 2001; the proportion of new ESRD patients with diabetes grew from 36 percent of all new patients to 46 percent in the same period. Both of these cohorts are heavy users of the health care system. The USRDS found that total payments were 23 percent higher for older ESRD beneficiaries (75 years and older) than for younger beneficiaries (0 to 19 years of age). They also found that total Medicare payments were 18 percent higher for dialysis beneficiaries with renal failure caused by diabetes than for beneficiaries without diabetes (USRDS 2002).

Assessing payment adequacy

The first question in applying MedPAC's approach to updating payments is whether the current level of Medicare's payments for outpatient dialysis services is at least adequate. The Commission answers this question by assessing aggregate Medicare payments and costs for both dialysis services and injectable medications administered during dialysis treatment for which providers receive separate payments from Medicare. Our assessment includes the payments and costs for injectable medications because their use has increased significantly throughout the 1990s and their effect on the financial performance of dialysis providers is significant. Including payments and costs for separately billable medications gives a more accurate picture of the financial performance of dialysis providers.

MedPAC concludes that total payments for outpatient dialysis services will be adequate in 2003 and that no adjustment for payment adequacy is needed as part of the 2004 update for outpatient dialysis services. To estimate current Medicare payments and costs, we assessed aggregate 2001 payments and costs for outpatient dialysis services and then projected both to 2003. We adjusted the unaudited 2001 cost data based on our findings that the allowable cost per treatment was about 96 percent of the reported costs in 1996, the most recent year for which audited cost data are available. Current payments for composite rate services and separately billable drugs combined exceeded costs of freestanding facilities by about 4 percentage points in 2001, and our estimate of the payment-to-cost ratio for 2003 is that it will be no more than 3 percentage points lower than the 2001 level (reflecting 2002 to 2004 payment rules).

To further study the question of payment adequacy, we looked at several market indicators, including the growth in the capacity of providers to furnish dialysis and changes in the financial health of dialysis providers. Because Medicare is the largest purchaser of outpatient dialysis services, Medicare payment adequacy should be reflected in these broad indicators. The findings from this analysis strongly suggest that aggregate Medicare payments appear to be sufficient relative to efficient providers' costs. Between 1994 and 2001, the number of facilities and in-center hemodialysis stations increased by about 7 percent annually. There was a net increase of 156 facilities between 2000 and 2001. The number of for-profit freestanding facilities continues to increase, suggesting that furnishing dialysis services to ESRD patients is financially attractive to for-profit providers. Data from the Centers for Medicare & Medicaid Services (CMS) show that providers continued to improve the quality of care furnished to beneficiaries, as assessed by measures of dialysis adequacy and anemia management. Furthermore, the large for-profit, multicenter dialysis companies (chains) that account for 65 percent of all facilities appear to have adequate access to capital, as shown by the continued growth in the number of facilities.

Current payments and costs

The Commission assesses current payments and costs for dialysis services by comparing Medicare's payments for composite rate services and injectable medications with providers' Medicare-allowable costs. Cost reports submitted by providers provide data on the costs they incur to furnish dialysis services and injectable drugs. We use data from cost reports to estimate Medicare's payments for dialysis services and erythropoietin and claims data to estimate Medicare's payments for separately billable injectable

4 In constant dollars, the composite rate has decreased by more than half of its original 1983 base rate of $127 for hospital facilities and $123 for freestanding facilities.

drugs other than erythropoietin. The Commission has traditionally expressed the relationship of aggregate payments to costs as a payment-to-cost ratio.

As described in the opening of this chapter, MedPAC's analysis of current costs uses only Medicare-allowable costs. Each year, CMS's contractors—fiscal intermediaries (FIs)—regularly audit cost reports submitted by certain institutional providers to ensure that the costs reported by providers are Medicare allowable. The Balanced Budget Act of 1997 (BBA) required the Secretary to audit the cost reports of each dialysis provider at least once every three years beginning in 1996. CMS's recent review of the 1996 data resulted in 62 percent of submitted costs reported being reopened and audited. The auditing of more recent cost reports is currently underway but not complete.[5]

MedPAC compared the audited cost report data for 1996 to unaudited 1996 data. Our analysis showed that the allowable cost per treatment for composite rate services and injectable drugs for freestanding facilities was about 96 percent of the reported cost of treatment. As shown in Table 2E-1, all types of facilities were affected by the audit. For example, allowable costs as a percentage of reported costs were 96 percent for medium-sized facilities and 97 percent for small and large facilities. Our finding that allowable costs are less than reported costs is consistent with an audit performed by CMS in 1988 that determined that the allowable cost per treatment for freestanding facilities was 88 percent of the reported cost per treatment (Prospective Payment Assessment Commission 1993).

If history is any guide, a portion of the reported costs for services furnished between 1997 and 2001 will most likely be found nonallowable when these reports are audited by CMS. MedPAC believes it is important to consider the effect of the difference between reported and allowable costs when assessing the relationship between current payments and costs. Consequently, we assessed providers' costs for services furnished between 1997 and 2001 in two ways. First, we used the actual costs reported by providers that have not yet been audited by CMS. Second, we adjusted the actual costs reported by providers by the ratio of allowable costs to reported costs derived from the analysis of the 1996 cost reports, the most recent year for which audited data are available. We calculated the ratio of allowable costs to reported costs in 1996 by each type of facility and applied this adjustment to the 1997 to 2001 costs of the corresponding facility type. Our approach assumes that the ratio of allowable costs to reported costs for 1997 to 2001 will be the same as 1996; this relationship may or may not be the case once the cost reports for this period are audited. However, based on the results of the earlier audits of providers' cost

TABLE 2E-1

Payment-to-cost ratios for composite rate services and separately billable drugs for freestanding dialysis facilities, 1996 and 2001

	1996		2001	
Facility type	**Not audited**	**Audited**	**Not audited**	**Adjusted for audit effect**
		Composite rate services only		
All	1.04	1.09	0.93	0.97
Small	0.94	0.97	0.85	0.89
Medium	1.02	1.08	0.91	0.95
Large	1.08	1.12	0.97	1.01
Nonprofit	1.02	1.04	0.86	0.89
For profit	1.05	1.09	0.94	0.98
Urban, in an MSA	1.04	1.09	0.93	0.97
Rural	1.03	1.07	0.92	0.96
		Composite rate services and injectable drugs		
All	1.10	1.14	1.01	1.04
Small	1.02	1.05	0.96	0.99
Medium	1.09	1.13	1.00	1.03
Large	1.12	1.16	1.03	1.06
Nonprofit	1.07	1.09	0.95	0.98
For profit	1.10	1.14	1.02	1.05
Urban, in an MSA	1.10	1.14	1.01	1.04
Rural	1.10	1.13	1.02	1.05

Note: MSA (metropolitan statistical area). These mean payment-to-cost ratios are weighted by the number of in-center and home dialysis sessions furnished by each facility. The size of the facility is defined in each year based on the 25th and 75th percentiles of dialysis sessions. Small facilities are those reporting dialysis sessions ≤ the 25th percentile of all dialysis sessions; medium facilities are those reporting dialysis sessions between the 25th and 75th percentiles of all dialysis sessions; and large facilities are those reporting dialysis sessions ≥ the 75th percentile of all dialysis sessions.

Source: Data compiled by MedPAC from 1996 and 2001 cost reports and the outpatient institutional file from CMS.

5 For example, the proportion of 1997 to 2001 cost reports that have been reopened or audited range from 0.1 percent in 2001 to 11 percent in 1998. During fiscal year 2003, the FIs will audit one third of facilities with cost report years ending between January 1, 2001 and December 31, 2001. In fiscal years 2004 and 2005, the FIs will audit the remaining ESRD cost reports for this time period (CMS 2002).

reports, we believe that once the cost reports for 1997 to 2001 have been audited, the ratio of allowable costs to reported costs will be less than 1.0.

For 2001, we estimate that Medicare's payments for composite rate services and injectable medications exceeded providers' costs by about 4 percentage points when the effect of the audit is considered (Table 2E-1). There is little variation in the aggregate payment-to-cost ratios for urban and rural facilities. Our finding that the payment-to-cost ratios vary considerably based on a facility's size and profit status stems from differences in the cost per dialysis treatment.

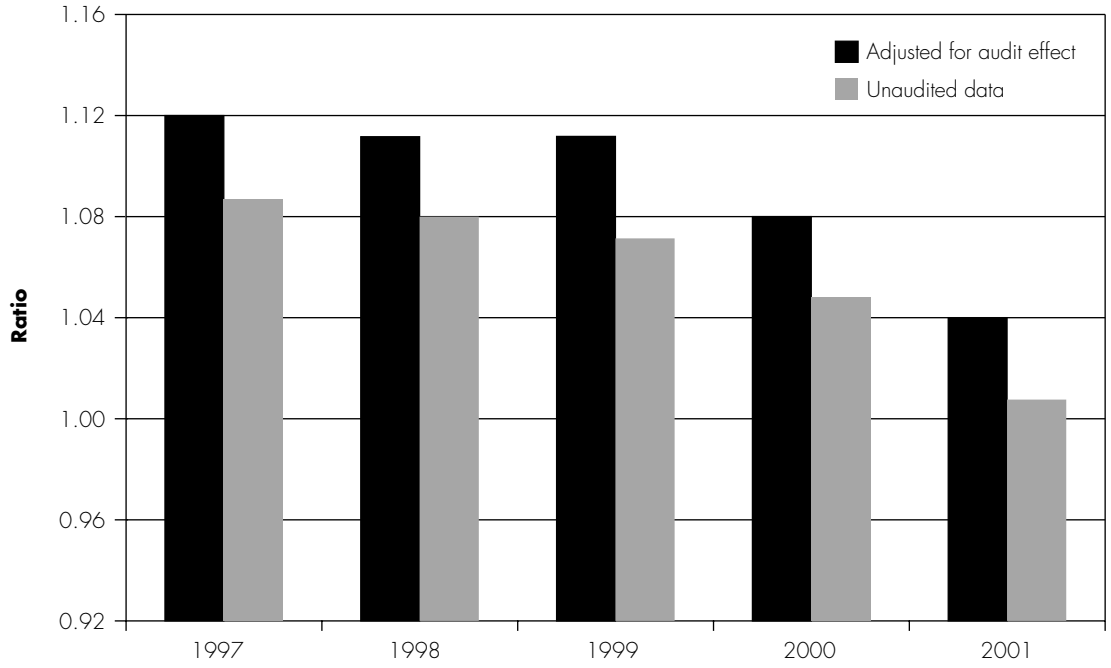
As shown in Figure 2E-2, aggregate payments for composite rate services and injectable drugs relative to providers' costs have steadily declined during the most recent five-year period available, 1997 to 2001. This decline is occurring because the composite rate was updated twice during this time period, 1.2 percent in 2000 and 2.4 percent in 2001. During this time period, providers' costs for composite rate services have increased by about 3.0 percent annually. In addition, the manufacturer of erythropoietin raised the price in 2000 and 2001, while the per unit payment of this injectable drug has remained unchanged by the Congress.

A different picture of financial performance emerges when we isolate composite rate services. In 2001, Medicare's payments for composite rate service costs did not cover the costs of providing dialysis services. This finding, when taken together with the earlier one about the aggregate payment-to-cost ratio, demonstrates that payments for separately billable drugs significantly exceed providers' costs.[6] Additionally, this finding strongly suggests that the profitability of erythropoietin and other separately billable drugs is subsidizing the lower margins under the composite rate.

To estimate the aggregate payment-to-cost ratio for 2003, we assumed that providers' costs will grow at the same rate predicted by MedPAC's dialysis market basket index in 2002 and 2003, less an adjustment for productivity improvements. This assumption seems reasonable given our analysis showing that providers' average per unit costs increased at a rate lower than the increase in the dialysis market basket index between 1997 and 2000. Our payment

FIGURE 2E-2

Aggregate payment-to-cost ratios for dialysis services, adjusted and unadjusted, 1997–2001



Note: The aggregate payment-to-cost ratio includes payments and costs for composite rate services and injectable drugs.

Source: MedPAC analysis of 1997–2001 cost reports and outpatient institutional claims of freestanding dialysis facilities from CMS.

6 Two studies by the Office of Inspector General (OIG) concluded that Medicare's payment rates for these drugs were high relative to providers' costs and the rates paid by the Department of Veterans Affairs and state Medicaid programs (OIG 2000, OIG 1997).

estimate for 2003 reflects current law, which does not provide any update for dialysis services between 2002 and 2004. Based on these assumptions, payments for composite rate services and injectable medications relative to providers' costs in 2003 are likely to be no more than 3 percentage points lower than the 2001 level. This estimate is conservative because we also assumed that revenue from injectable medications relative to that from composite rate services would not change between 2001 and 2003. However, based on historical trends, the percentage of revenue from injectable drugs relative to composite rate services will most likely increase between 2001 and 2003. Assuming the increasing use of injectable drugs and their continued profitability between 2001 and 2003, the average aggregate payment-to-cost ratio will probably decline by less than three percentage points in 2003.

Although the payment-to-cost ratio for composite rate services and injectable medications is the most comprehensive measure we have to assess the financial performance of dialysis facilities, it does not account for the potential profitability of other services associated with outpatient dialysis. For example, several national dialysis chains own laboratories and receive Medicare payments for laboratory tests outside the composite rate payment bundle. In addition, providers have begun to provide diabetes outpatient self-management training services, payment for which was implemented by the BBA. In the future, MedPAC will regularly monitor the extent to which these training services are furnished by dialysis providers.

Appropriateness of current costs

At issue is whether aggregate dialysis costs provide a reasonable representation of the costs that efficient providers would incur in furnishing high-quality care. Because the composite rate is predetermined, providers have an incentive to restrain their costs for composite rate services. In contrast, because injectable medications are paid per unit, providers have little incentive to improve efficiency.

To address this issue, MedPAC assessed the factors explaining the growth in providers' costs for furnishing composite rate services and injectable medications. It is too soon to tell whether the spike in average costs for composite rate services in 2001, which exceeded the increase in providers' costs predicted by the dialysis market basket, will continue in future years. Our analysis of selected productivity measures showed little change in the composite rate services furnished to beneficiaries between 1997 and 2000–2001. MedPAC generally expects average cost growth to approximate the rate of increase in the market basket index given little change in the services furnished to beneficiaries.

Costs for composite rate services

Providers' costs for composite rate services increased by 5.7 percent between 2000 and 2001. This rate of increase exceeded the 3.8 percent increase predicted by the dialysis market basket index for this same time period. MedPAC's analysis shows that two categories of costs spiked in 2001:

- Labor costs increased by about 7 percent, compared with a 2 percent increase between 1997 and 2000.
- General and administrative costs increased by about 9 percent, compared with a 2 percent increase between 1997 and 2000.

Historically, dialysis providers have been able to adopt efficiencies in service delivery, enabling them to keep their costs at or below the dialysis market basket index. It is too soon to tell whether the growth in providers' labor and administrative costs between 2000 and 2001 is an anomaly. Like other health care providers, dialysis providers contend that their labor costs have increased because they face increased competition for recruiting registered nurses and technicians (driven by the possible emergence of labor shortages). In addition, providers claim that recent changes in licensure and scope of practice laws in certain states means that certain services previously furnished by dialysis technicians must be provided by either registered nurses or licensed practical nurses. Finally, providers contend that since 2000 they have faced significant increases in the cost of utilities and of liability and property insurance. Unfortunately, the cost report data do not allow for an analysis of the specific components comprising the costs reported as general and administrative.

Thus, it is too soon to draw conclusions about the appropriateness of the composite rate cost base. To conclude that providers' costs are not appropriate, the Commission would need to see that the long-term growth in cost per case continues to significantly exceed the growth predicted by the market basket. MedPAC will monitor future trends in providers' costs and also changes in the dialysis product, which we discuss in the following section.

Changes in composite rate services

One way to assess whether the cost base for composite rate services is appropriate is to examine changes in the services furnished by providers. MedPAC examined possible changes in the product by looking at changes over time in the staff furnishing in-center hemodialysis care and the productivity of the staff in 1997 to 2000–2001.

From 1997 to 2001, few changes were made in the composition of the staff furnishing in-center dialysis care (Table 2E-2). The proportion of technicians to patient care staff has not significantly changed between 1997 and 2001, and the ratio of patients to registered nurses and technicians has remained relatively constant between these two years. Also, the productivity of patient care staff was fairly stable during this period. For instance, the average duration of hemodialysis sessions slightly increased from 210 minutes in 1997 to 215 minutes in 2000. The productivity of patient care staff, as measured by the number of

TABLE 2E-2

Indicators to assess changes in services furnished during in-center hemodialysis treatments, 1997 and 2001

Indicator	1997	2001
Ratio of:		
Patients to technicians	19.2	18.0
Patients to registered nurses	17.6	15.7
Technicians to patient care staff	0.54	0.54
Length of hemodialysis treatment (minutes)	210	215*
Number of:		
Treatments per in-center hemodialysis station	654	658
In-center hemodialysis treatments per patient care staff member	695	742
In-center hemodialysis shifts per week	12.3	12.0

*The average length of an in-center hemodialysis session in 2000.

Source: MedPAC analysis of 1997, 2000, and 2001 cost reports and data on clinical performance measures from CMS.

in-center hemodialysis treatments per station and the total number of hemodialysis treatments per staff, also remained relatively constant between 1997 and 2001.

The cost of incremental changes in the technologies used during dialysis are probably not significantly contributing to the growth in providers' costs. Data from providers' cost reports show that the two categories that probably include the costs of new technologies, capital and other direct costs, increased by only 2 percent between 2000 and 2001. In comparison, labor costs increased by 7 percent, and general and administrative costs increased by 9 percent during this time period.

Costs for separately billable medications

Based on MedPAC's previous findings, we expect that the costs of separately billable drugs have grown more rapidly than the costs of composite rate services. Costs for separately billable drugs increased by about 12 percent between 2000 and 2001. This change is consistent with the trends between 1998 and 2000. The payment method for separately billable drugs gives providers no incentives to improve efficiency. In contrast, prospective payment methods provide incentives to control costs because payment is based on a predetermined rate unaffected by incurred costs or posted charges. Substituting new, more costly drugs for older, less expensive medications may be another reason why providers' costs for injectable medications per dialysis treatment increased during the 1997 to 2001 period. For example, the price of a vitamin D analogue (paricalcitol) newly approved in 1998 is twice that of the older agent it has displaced (calcitriol). Between 2000 and 2001, spending for paricalcitol increased from $172 million to $386 million; in contrast, spending for calcitriol decreased from $127 million to $67 million during this same time. Finally, a 3.9 percent increase in the price charged by the manufacturer of erythropoietin in 2000 and 2001 also increased providers' costs per treatment.

Relationship of payments to costs

Next we assess the relationship of payments to appropriate costs for outpatient dialysis services and find that aggregate Medicare payments appear to be sufficient. We base this conclusion, in part, on the following evidence about market conditions throughout the 1990s: (1) the average annual growth in the number of hemodialysis treatments has kept pace with the average annual growth in the number of hemodialysis patients; (2) the number of for-profit freestanding dialysis facilities is increasing; (3) there has been no widespread access problem for beneficiaries; (4) the quality of dialysis care has improved; and (5) there has been no change in providers' access to capital, as evidenced by continued growth in the number of providers and their capacity to furnish dialysis.

Changes in volume

Between 1993 and 2001, the growth in the number of in-center hemodialysis treatments generally kept pace with the growth in the number of dialysis patients. The number of dialysis treatments increased, on average, by 8 percent annually; in comparison, the number of dialysis patients increased, on average, by 7 percent during this time period.

The growth in payments for injectable drugs increased more rapidly than the growth in payments for dialysis treatments in the 1990s.[7] Between 1998 and 2001, total payments for erythropoietin furnished by freestanding dialysis facilities increased by about 15 percent per year, and total payments for other injectable drugs increased by about 30 percent per year. In contrast, payments for composite rate services increased by 9 percent per year during this same period. The Commission anticipates that the growth in the use of injectable drugs paid for outside the composite rate will continue to increase. For example, CMS recently made a national coverage

7 We express volume in terms of total Medicare payments because each injectable drug has its own unit of measurement.

decision to cover injections of levocarnitine for patients with ESRD beginning in January 1, 2003.[8]

Use of injectable medications has grown for several reasons. First, many of the agents—including erythropoietin and iron supplements—were only approved by the Food and Drug Administration in the early 1990s. Since their approval, their use has been advocated in clinical guidelines set forth by the National Kidney Foundation (NKF). The use of many of these medications has enhanced the quality of care furnished to dialysis beneficiaries. For example, the increased use of erythropoietin has reduced the proportion of dialysis patients suffering from anemia, which contributes to morbidity if not treated effectively. However, the profitability of certain injectable medications has provided incentives in how they are used. For example, Medicare pays $10 per 1,000 units for erythropoietin administered either intravenously or subcutaneously (under the skin). Paying on a per unit basis promotes the use of the intravenous form of this medication, which requires higher average doses (more units) to achieve target hematocrit levels.[9] The predominant use of intravenous erythropoietin persists despite the publication of the NKF's Dialysis Outcome Quality Initiative Clinical Practice Guideline for the treatment of anemia, which advocated subcutaneous administration (NKF 1997).

Revenue from injectable medications has become more important relative to revenue from composite rate services during the past five years. For freestanding dialysis providers, revenue from injectable medications relative to that from composite rate services has increased from about 33 percent of total payments in 1997 to 40 percent of total payments in 2001. As noted earlier, the positive payment margins for injectable drugs are subsidizing the lower payment margins under the composite rate.

Broadening the payment bundle to include frequently used injectable drugs that are now paid for separately would provide a strong incentive for providers to furnish these services more efficiently. In our March 2001 report, MedPAC recommended that the Congress require the Secretary to: (1) include in the prospective payment bundle services that are frequently used for dialysis but currently excluded from this bundle, and (2) revise the payment system to account for factors that affect providers' costs, including dialysis method, dose, frequency, and patient acuity.

Entry and exit of providers

Reports of facility closings tend to be linked to local issues, such as rising real estate prices in certain areas, shortages of technicians and nurses, and states' certificate of need regulations. MedPAC examined the characteristics of dialysis facilities that closed during 2001 using data from CMS's facility survey. Between 2000 and 2001, there was a net increase of 156 facilities. Facilities that closed were more likely to be smaller, in terms of both the number of patients they treated and the number of in-center hemodialysis stations they maintained, than facilities that remained in business in 2001. In addition, facilities that closed were more likely to be nonprofit and hospital-based. Some providers contend that they are limiting their exposure to Medicare patients. However, our data show little correlation between proportions of facility patient loads attributable to Medicare and facility closings between 2000 and 2001.

Our finding—that facilities that closed were more likely to be small, nonprofit, and hospital-based than facilities that remained open—is consistent with the changes in the characteristics of dialysis providers in the 1990s. As shown in Table 2E-3, freestanding and for-profit facilities grew at the expense of hospital-based and nonprofit facilities. Between 1993 and 2001, freestanding facilities increased from 70 percent to 83 percent of all facilities, while for-profit facilities increased from 61 percent to 79 percent of all facilities. In addition, dialysis chains continue to acquire independently operated facilities. MedPAC estimates that about 65 percent of all facilities were operated by the four national for-profit chains in 2001. Our finding that freestanding facilities have steadily increased as a share of the total throughout the 1990s suggests that dialysis facilities are sufficiently profitable to stand on their own. Our finding that for-profit facilities continue to grow at the expense of nonprofit facilities suggests that furnishing dialysis services to ESRD patients is financially attractive to for-profit providers.

Beneficiaries' access to care

A review of the published literature shows no evidence of beneficiaries facing systematic problems in obtaining needed dialysis care in 2001 and 2002. MedPAC's analysis of data from CMS's facility survey shows that the capacity of providers to furnish care has increased steadily between 1993 and 2001. The total number of dialysis facilities grew by about 7 percent during this time, as did the number of in-center hemodialysis patients (Table 2E-3). With about 25 percent of all facilities located in rural areas between 1993 and 2001, the capacity to furnish dialysis in rural areas appears to have stayed relatively constant during this time period.

The Commission finds that providers have kept up with the demand for dialysis by increasing the number of facilities rather than increasing capacity within facilities.

8 Levocarnitine supplements the loss of carnitine, a naturally occurring body substance that helps transport long-chain fatty acids for energy production by the body. Patients on hemodialysis can suffer carnitine deficiencies from dialytic loss, reduced renal synthesis, and reduced dietary intake. Patients must show improvement from the levocarnitine treatment within six months of initiation of treatment for Medicare to continue to pay for the treatment.

9 Some providers contend that erythropoietin is predominately furnished intravenously because patients experience less discomfort than when it is furnished subcutaneously.

TABLE 2E-3

Characteristics of dialysis facilities, 1993–2001

	1993	1994	1995	1996	1997	1998	1999	2000	2001
Total number of dialysis facilities	2,343	2,502	2,732	2,940	3,172	3,394	3,619	3,805	3,961
					Percent of all facilities				
For profit	60.8%	62.2%	64.6%	67.4%	71.1%	75.0%	77.3%	78.3%	79.4%
Nonprofit	33.4	32.2	30.3	28.1	25.2	21.9	19.8	19.1	18.1
Government	5.8	5.6	5.0	4.4	3.8	3.2	2.9	2.7	2.5
Freestanding	70.0	71.6	73.7	75.1	77.0	78.8	80.7	81.6	82.6
Hospital-based	30.0	28.4	26.3	24.9	23.0	21.2	19.3	18.4	17.4
Urban, in an MSA	77.3	76.8	76.8	76.2	75.6	75.1	75.1	75.1	74.8
Rural, total	22.7	23.2	23.2	23.8	24.4	24.9	24.9	24.9	25.2
Adjacent to an MSA									
Includes a town with at least 10,000 people	6.7	6.8	6.5	6.8	6.7	6.6	6.6	6.5	6.4
Does not include a town with at least 10,000 people	5.0	5.4	5.5	5.8	6.1	6.5	6.6	6.8	7.0
Not adjacent to an MSA									
Includes a town with at least 10,000 people	6.6	6.4	6.4	6.3	6.1	6.1	5.9	5.7	5.7
Does not include a town with at least 10,000 people	4.4	4.5	4.8	5.0	5.5	5.8	5.9	5.9	6.1

Source: MSA (metropolitan statistical area). Data compiled by MedPAC from the 1993–2001 facility survey file from CMS. Numbers may not total exactly because of rounding.

We based this finding on our analysis of trends in the following:

- average hemodialysis stations per facility
- average in-center hemodialysis treatments per facility
- average in-center hemodialysis treatments per dialysis station[10]

The total number of in-center hemodialysis treatments provided by dialysis facilities has increased by about 8 percent per year between 1997 through 2001, but the average number of hemodialysis stations per facility has remained relatively constant at about 21 per facility. Average total dialysis treatments also have remained relatively constant, ranging from 15,500 to 16,000 during this time period. Finally, average hemodialysis treatments per station have remained relatively constant during this time period, ranging from 648 to 658.

Opening new facilities may improve access to care by reducing the time that beneficiaries have to travel to obtain care three times per week. Researchers have noted that transportation to and from the dialysis facility can affect patients' compliance with their prescribed treatment, with some patients shortening their dialysis treatments or skipping treatments (Rocco and Burkart 1993, Sehgal et al. 1998, USRDS 1997). However, the sustained growth in the number of dialysis facilities raises questions about the optimal efficiencies of scale and the tradeoff between opening new facilities versus increasing the capacity of existing facilities.

Quality of care

Clinical performance indicators collected by CMS show continued improvements in the quality of dialysis care, as measured by the percentage of hemodialysis patients receiving adequate dialysis and suffering from anemia (Table 2E-4, p. 130). For example, the proportion of in-center hemodialysis patients receiving inadequate dialysis declined from 26 percent in 1996 to 14 percent in 2000. However, no clinically important changes or improvements were found in the percentage of hemodialysis patients with adequate or optimal serum albumin levels in 2000 compared to previous years.[11]

10 Average hemodialysis stations per facility, treatments per facility, and treatments per dialysis station are weighted by the number of dialysis sessions at each facility.

11 Mean serum albumin levels have been shown to be a marker for diminished patient survival.

TABLE 2E-4

Clinical performance indicators, 1994–2000

Performance indicator	1994	1995	1996	1997	1998	1999	2000
Percent of hemodialysis patients receiving inadequate dialysis	N/A	N/A	26%	22%	20%	16%	14%
Percent of hemodialysis patients with low hematocrit levels	N/A	N/A	N/A	57	41	32	26
Percent of hemodialysis patients who are malnourished	20%	16%	19	16	18	20	20

Note: N/A (not available), Kt/V (urea clearance multiplied by the time normalized by total body water divided by the volume of distribution of urea), gm/dL (grams per deciliter). Patients receiving inadequate dialysis are those with Kt/V < 1.2. Patients with low hematocrit levels are those with hemoglobin levels < 11 gm/dL. Patients malnourished are those with serum albumin levels < 3.5 gm/dL.

Source: MedPAC analysis of 1994–2000 data on clinical performance measures from CMS.

Some providers and researchers contend that increased use of certain types of medical interventions, particularly parenteral nutrition, would improve the outcomes of certain patients. Medicare's coverage policies limit the number of dialysis patients who qualify for these interventions.[12]

A recent study raised important issues about the quality of dialysis care in the United States (Devereaux et al. 2002). The authors reported a death rate 8 percent higher among kidney failure patients receiving dialysis at for-profit centers than among those treated at nonprofit facilities, for an estimated 2,500 additional deaths each year. This conclusion was based on a meta analysis of 8 retrospective studies that examined the risk of mortality for more than 500,000 patients. Seven of these studies used data from 1990 through 1997; one study was based on data from 1973 to 1982.

Past research by CMS, USRDS, and others has shown that many factors, including patients' clinical characteristics and providers' characteristics, affect outcomes of dialysis patients. Studies underway using more recent data are evaluating whether patient outcomes vary by facility profit status and other provider characteristics. Two abstracts recently published using post-1997 data show no significant difference in mortality at for-profit versus nonprofit facilities (Held et al. 2002, Wolfe et al. 2002).

Two MedPAC studies currently underway will partly address the issue of the quality of care furnished to dialysis patients. The first study will explore the use of incentives—both financial and nonfinancial—for Medicare to encourage providers to improve care. Strategies for encouraging more-focused provider attention to improving quality are being discussed in national forums such as the Institute of Medicine and the National Quality Forum and in numerous purchaser coalitions across the country. The second study will examine the relationship between quality of care and providers' costs per treatment. No published information is available regarding the influence of dialysis facility costs on patient outcomes. Previous MedPAC analysis has shown significant variation in the cost per dialysis treatment among freestanding dialysis facilities.

The findings by Devereaux et al. on quality demonstrate the importance of Medicare's continuing efforts to monitor the quality of care furnished by dialysis providers. Beginning in 1993, CMS has annually published information about the quality of care furnished to dialysis patients, including adequacy of dialysis and anemia management. The USRDS also collects, analyzes, and distributes information on different aspects of the care of patients with ESRD, including trends in disease incidence and prevalence, patient survival and causes of death, modality of treatment, and use of hospital services.

Providers' access to capital

Dialysis facilities need access to capital to improve their equipment and to open new facilities to accommodate growth in the number of patients requiring dialysis. About 80 percent of all dialysis facilities are for-profit, and the four largest for-profit chains account for about 65 percent of all facilities. These for-profit chains appear to have adequate access to capital, as demonstrated by growth in the number of clinics, the number of patients they treat, and their earnings. Data from industry sources show that the growth in revenues between 1996 and 2000 for these four chains ranged from 36 to 62 percent. A bond analyst described the sector as having no problems with access to capital and ratings for the bonds of two of the largest chains, although below investment grade, are neutral going forward. In addition, industry reports have stated that revenues for dialysis service are fairly predictable, given the recurring requirement for treatment. However, they also have noted that dialysis providers face potential pressures from private payers, and are highly susceptible to any future changes in Medicare's payment policies. Finally, the stocks of these for-profit chains have in large part enjoyed positive ratings by financial analysts over the last year.

12 Daily parenteral nutrition is limited to patients "with severe pathology of the alimentary tract which does not allow absorption of sufficient nutrients to maintain weight and strength commensurate with the patient's general condition" (CMS 2003).

Accounting for cost changes in the coming year

As noted earlier, the Commission accounts for expected cost changes in the coming year primarily through the forecast of input price inflation. CMS has not developed a market basket index for outpatient dialysis services.[13] Consequently, MedPAC uses an index for dialysis services comprising price indexes for hospitals, skilled nursing facilities, and home health agencies. MedPAC's index indicates that the prices dialysis facilities pay for their inputs included in the composite rate will rise an estimated 2.5 percent between 2003 and 2004.

Another factor considered by MedPAC's update framework that may affect providers' costs in the next payment year is scientific and technological advances. This factor is designed to reflect only those new technologies that are quality enhancing and costly, and have progressed beyond the initial stage of use but have not yet fully diffused into medical practice. Based on our review of the literature, we believe that the costs of most medical advances will be accounted for primarily through payments for separately billable drugs. Therefore, there is no need for an addition to the update for medical advances.

Finally, MedPAC's update framework reflects the expectation that, in the aggregate, providers should be able to reduce the quantity of inputs required to produce a unit of service while maintaining service quality. Prospective payment is designed to promote efficiency, and productivity increases should be expected from providers. To estimate productivity increases, MedPAC uses the 10-year moving average of multifactor productivity in the economy as a whole, which is 0.9 percent.

Update recommendation

Based on our review of the adequacy of payments for outpatient dialysis services and expected cost changes in the coming year, the Commission recommends the following:

RECOMMENDATION 2E

The Congress should update the composite rate payment by the projected change in input prices, less 0.9 percent, for calendar year 2004.

As noted earlier, MedPAC's dialysis market basket projects that input prices will rise by 2.5 percent between 2003 and 2004. The Congress should consider using CMS's dialysis market basket index to update the composite rate payment once it becomes available because it may be a more current projection than the Commission's market basket index.

IMPLICATIONS 2E

Spending

- This recommendation would increase spending between $50 and $200 million in one year. Over 5 years, spending would increase between $250 million and $1 billion.

Beneficiary and provider

- This recommendation would result in a payment increase sufficient to cover expected increases in efficient providers' costs for dialysis services in 2004. Dialysis providers should be able to realize productivity gains to partially offset the increases in input prices reflected in the dialysis market basket index.
- To the extent that adequate payment allows providers to meet beneficiaries' health care needs, beneficiaries will continue to have access to medically necessary care of high quality. ■

13 In our March 2000 report, MedPAC recommended that the Congress instruct CMS to consider a periodic update for outpatient dialysis services. The Medicare, Medicaid, and SCHIP Benefits Improvement and Protection Act of 2000 instructed the Secretary to submit a report on methods to update the outpatient dialysis payment system, including a market basket for dialysis services, by July 2002. This study is currently being reviewed within the agency.

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