CHAPTER 8

End-stage renal disease payment policies in traditional Medicare

RECOMMENDATIONS

8A The Congress should instruct the Secretary to broaden the composite rate payment bundle to include widely used services currently excluded from it. The Secretary should continue to emphasize quality monitoring and quality improvement efforts to ensure that patients have access to high-quality dialysis care.

YES: 14 • NO: 0 • NOT VOTING: 0 • ABSENT: 2

8B The Congress should instruct the Secretary to evaluate whether the composite rate's unit of payment—a single dialysis session—should be revised to reflect better the way dialysis is furnished.

YES: 14 • NO: 0 • NOT VOTING: 0 • ABSENT: 2

8C The Congress should instruct the Secretary to revise the outpatient dialysis payment system to account for factors that affect providers' costs to deliver high-quality clinical care, including dialysis method, dose, frequency, and patient acuity.

YES: 14 • NO: 0 • NOT VOTING: 0 • ABSENT: 2

8D The Congress should instruct the Secretary to develop a wage index based on market wage rates for occupations typically used in furnishing dialysis.

YES: 14 • NO: 0 • NOT VOTING: 0 • ABSENT: 2

8E For calendar year 2002, the composite rate for outpatient dialysis services should remain unchanged.

YES: 14 • NO: 0 • NOT VOTING: 0 • ABSENT: 2

***COMMISSIONERS' VOTING RESULTS**

CHAPTER 8

End-stage renal disease payment policies in traditional Medicare

In this chapter

- Design of the outpatient dialysis payment system
- Updating the composite rate for calendar year 2002

Medicare's prospective payment system for outpatient dialysis services does not pay appropriately for outpatient dialysis services because neither payments for services in the payment bundle nor payments for certain services outside the payment bundle accurately reflect providers' expected costs. Refining the payment system would help Medicare achieve its payment objectives of providing incentives for controlling costs and promoting access to quality services. The Congress should require that the Secretary include in the prospective payment bundle services that are frequently used for dialysis but currently excluded from this bundle and account for factors that affect providers' costs, including dialysis method, dose, frequency, and patient acuity. The Secretary should also consider whether the payment system's current unit of payment—a single dialysis session—would be appropriate with an expanded payment bundle. Finally, the current composite rate payment should remain unchanged for calendar year 2002.

End-stage renal disease (ESRD) is a chronic illness characterized by permanent kidney failure. ESRD occurs at the last stage of progressive impairment of kidney function and is caused by a number of conditions, including diabetes, hypertension, glomerulonephritis, and cystic kidney disease. The 1972 amendments to the Social Security Act extended Medicare benefits to people with ESRD, and more than 300,000 patients were enrolled in the program in 1999.[1]

Since 1990, MedPAC and its predecessor commission have been obligated to evaluate the adequacy of the payment rate for outpatient dialysis services (the composite rate) and recommend updates to this payment. The Balanced Budget Refinement Act of 1999 (BBRA) required the Commission to recommend to the Congress how Medicare should pay for home hemodialysis.[2] Currently, Medicare's payment system for outpatient dialysis does not vary payment rates for different methods of dialysis treatment, and it caps payment to an amount equal to three dialysis sessions per week, although dialysis may be given more frequently. (See text box for additional information on home hemodialysis).

The Commission has considered whether the current payment system for outpatient dialysis meets Medicare's payment policy objectives, which include providing cost-effective, quality care to patients using the most suitable modality in the most suitable setting; promoting access to services; and giving dialysis providers incentives to control costs. This chapter explores these issues in two sections.

The first section discusses how Medicare pays for outpatient dialysis in traditional Medicare, as well as the specific question posed by the BBRA on home hemodialysis payment by considering whether the composite rate adequately accounts for predictable differences in the costs of furnishing dialysis while encouraging the efficient provision of services. As with all prospective payment systems, Medicare must get the unit of payment right and provide for appropriate adjustments. We find deficiencies in both the size and content of the composite rate payment bundle, the lack of a classification system, and needed adjustments to the rate. As a result, we recommend that the outpatient dialysis payment system be revised to reflect the services furnished during dialysis and to account for the costs of efficient providers. With respect to the question on home hemodialysis posed by the BBRA, we find that there are justified differences in the costs of providing more frequent and longer hemodialysis sessions compared with thrice-weekly hemodialysis, and that the payment system does not take these differences into account. Revising the outpatient dialysis payment system to account for the costs of efficient providers would address this payment issue.

In the second section, we examine updating payments for outpatient dialysis services in the traditional Medicare program for calendar year 2002. We find that the number of dialysis facilities continues to grow and providers continue to make productivity improvements. Payments for dialysis services included in the prospective payment bundle were lower than providers' costs in 1999, but payments for widely used services outside the payment bundle were significantly greater than providers' costs. From these data, MedPAC concludes that the payment margins associated with services outside the prospective payment bundle have enabled providers to remain profitable, despite a more than 50 percent decline in the real composite rate payment since 1983. MedPAC recommends that the composite rate not be increased in calendar year 2002.

Design of the outpatient dialysis payment system

The composite rate payment system is different from Medicare's other prospective payment systems because it does not adjust payment for factors known to affect providers' costs, other than the variation in local area wages. At issue is whether the design of this payment system promotes the efficient use of appropriate, high-quality care. To address this issue, the Commission evaluated various components of the payment system, using a framework outlined in our March 1999 report (MedPAC 1999b).

Designing a broadened payment bundle

The composite rate was designed in 1983 to include all nursing services, supplies, equipment, and drugs associated with a single dialysis session. Even though several technological advances in the provision of dialysis and drugs have occurred since 1983, HCFA has neither modified the unit of payment nor formally reviewed the payment bundle. Incremental changes to the bundle have been made over time without any formal criteria to determine which services should be included. Consequently, the payment bundle includes many technologies that diffused widely into medical practice after the composite rate was developed, even though the payment rate has not been re-based. In contrast, HCFA has explicitly excluded other services from the payment bundle, and providers receive separate payment for these services. The payment system provides strong incentives for controlling the costs of services included in the payment bundle, but weak incentives for controlling the costs of services billed outside the composite rate. In addition, the current unit of payment—

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

2 The specific language used in the BBRA is: "Study on Payment Level for Home Hemodialysis: The Medicare Payment Advisory Commission shall conduct a study on the appropriateness of the differential in payment under the Medicare program for hemodialysis services furnished in a facility and such services furnished in a home. Not later than 18 months after the date of the enactment of this Act, the Commission shall submit to Congress a report on such study and shall include recommendations regarding changes in Medicare payment policy in response to the study."

Home hemodialysis

Home hemodialysis has been used successfully to treat ESRD since 1961 (Mackenzie and Mactier 1998). After initial growth in the use of this modality during the early 1970s, the proportion of patients furnished home hemodialysis has declined, from 39 percent in 1972 to 24 percent in 1976, 2.4 percent in 1989, and 1.3 percent (3,100 patients) in 1998 (Blagg 1996, USRDS 2000). Several reasons may explain this trend. Certain patients may either prefer the interaction of in-center care or might not be sufficiently independent to perform home hemodialysis. In addition, rapid growth in the number of dialysis facilities—from 1,786 in 1988 to 3,576 in 1998—has created an incentive to direct patients to treatment in dialysis facilities until use of facilities is high (Nissenson et al. 1993).

In the United States, there is renewed interest by patients, providers, and the Congress in examining the role of furnishing more frequent and longer hemodialysis sessions in patients' homes. Different methods include increasing the length of thrice-weekly hemodialysis sessions or furnishing hemodialysis more frequently. Medicare now pays the same rate for hemodialysis provided in dialysis facilities and in patients' homes. The key question posed by the Balanced Budget Refinement Act of 1999 is: should Medicare pay differently for more frequent and longer home hemodialysis sessions, and if so, how? Medicare's policy of paying for a maximum of three hemodialysis sessions per week has created a barrier to the increased diffusion of more frequent hemodialysis sessions in patients' homes.

Two approaches have been used in prescribing daily hemodialysis (Kjellstrand and Ting 1998). The first—short daily hemodialysis—keeps the total weekly time on dialysis constant but reduces the time for each individual dialysis session. The other approach—nocturnal hemodialysis—consists of slow, long hemodialysis sessions while patients sleep. Prescriptions range from 1 to 3 hours for short daily treatments to 6 to 10 hours for nocturnal treatments. Both forms are furnished five to seven times per week.

The resurgence of interest in the use of daily home hemodialysis stems from clinical evidence of improved outcomes of patients receiving daily hemodialysis compared with those receiving thrice-weekly conventional hemodialysis, and from the anticipated approval by the US Food and Drug Administration in 2001 of an automated personal hemodialysis system specifically designed for home use. ■

a single dialysis session—was most likely selected in 1983 because the predominant method of dialysis at that time was in-center hemodialysis. This unit may be too small and may be inconsistent with how providers think about the product.

RECOMMENDATION 8A

The Congress should instruct the Secretary to broaden the composite rate payment bundle to include widely used services currently excluded from it. The Secretary should continue to emphasize quality monitoring and quality improvement efforts to ensure that patients have access to high-quality dialysis care.

RECOMMENDATION 8B

The Congress should instruct the Secretary to evaluate whether the composite rate's unit of payment—a single dialysis session—should be revised to reflect better the way dialysis is furnished.

The Medicare, Medicaid, and SCHIP Benefits Improvement and Protection Act of 2000 (BIPA) requires the Secretary to develop a system that includes in the composite rate payment diagnostic laboratory tests and drugs that are routinely used in furnishing dialysis but currently billed separately by dialysis facilities. We believe three reasons justify having the Secretary develop and implement a broadened payment bundle as soon as possible. First, the composite rate payment bundle does not include laboratory tests and drugs which are widely used during dialysis. Second, Medicare is likely paying too much for some dialysis services outside the prospective payment bundle, as evidenced by their large profit margins. Finally, providers are not furnishing certain dialysis services that are outside the payment bundle in the most efficient manner.

Since 1983, the payment bundle has grown to include both new services and services that were once separately billable. These services include labor and supplies associated with administering medications not available in 1983, such as erythropoietin and iron dextran; certain laboratory tests; noninvasive procedures used to monitor patients' vascular access site and cardiovascular conditions; and new scientific innovations, such as high-efficiency and high-flux hemodialyzers and synthetic dialyzer membranes.

Although the payment bundle has grown over time, HCFA has explicitly excluded certain injectable medications, laboratory tests, blood, and blood products from the bundle. The exclusion of these items has little to do with how many patients use them. For example, three separately billable injectable medications—erythropoietin, iron dextran, and vitamin D analogues—are prescribed to more than

half of all in-center hemodialysis patients, and have been commonly used in medical practice throughout the past decade. These medications remain outside of the service bundle primarily because they are relatively costly compared with the composite rate and were introduced to medical practice after the bundle was designed.

The fact that certain services can be billed separately does not in itself mean that they are provided inefficiently. However, the profitability of certain separately billable services has provided incentives for inefficient use. For example:

- Medicare pays $10 per 1,000 units for erythropoietin administered either intravenously or subcutaneously. This policy promotes the use of the intravenous form of this medication, which requires higher average doses (more units) to achieve target hematocrit levels (HCFA 1999). The predominant use of intravenous erythropoietin persists despite the National Kidney Foundation's (NKF) clinical practice guideline for the treatment of anemia, which advocated subcutaneous administration (NKF 1997). The Department of Veterans Affairs (VA) reported that substantial cost savings might be achieved if use of the subcutaneous form increased among patients treated at their facilities. The VA found that the average erythropoietin dose needed to maintain a hematocrit of 30 to 33 percent is one-third lower with subcutaneous administration than with intravenous administration (Kaufman et al. 1998).

- Medicare pays dialysis facilities 95 percent of the average wholesale price (AWP) for other separately billable injectable medications administered during in-center dialysis. Among in-center hemodialysis patients, this policy may have promoted the use of the more costly intravenous forms of certain Medicare-covered medications, rather than oral forms that are neither covered by Medicare as a separately billable services nor explicitly in the composite rate payment bundle. For example, the U.S. Renal Data System (USRDS)[3] reported that about 80 percent of in-center hemodialysis patients prescribed vitamin D analogues received them intravenously, while nearly all (97 percent) peritoneal dialysis patients received them orally (USRDS 1998). The AWP of the oral vitamin D analogues is about $10 per week, while the cost of the intravenous formulations ranges from $40 to $80 per week.

- Medicare pays clinical laboratories for laboratory tests outside the prospective payment bundle according to a fee schedule. The General Accounting Office (GAO) found wide variation in the rate of ESRD-related laboratory tests ordered, suggesting excessive use, with some patients receiving tests too often or receiving unnecessary tests (GAO 1997). The financial incentive to bill for many tests is inherent in this fee-for-service payment arrangement. In addition, several multi-center dialysis companies (chains) own laboratories and have an incentive to increase revenues by directing more tests to the company-owned laboratory. The GAO also noted that facilities can influence the tests physicians order through the use of so-called standing orders, lists of tests periodically performed on all patients unless the ordering physician overrides them. Finally, the Office of Inspector General (OIG) has found that some hospitals and independent laboratories were reimbursed inappropriately for laboratory tests (OIG 1996).[4]

Separately billable services represent an important source of revenue for dialysis facilities (Securities and Exchange Commission 2000a, 2000b, 2000c). MedPAC analysis shows that charges for separately billable injectable medications administered by freestanding dialysis facilities totaled more than $1.4 billion in 1999, representing about 30 percent of total Medicare payments to these facilities. Additionally, MedPAC found that:

- Medicare payments for erythropoietin over the 1996-1999 period exceeded providers' costs by an average of 30 percent.[5] The Commission's finding is consistent with an OIG (1997) finding that the payments for erythropoietin exceeded providers' costs by at least 15 percent in 1996-1997 for half of all freestanding facilities.

- Medicare payments for other separately billable drugs, including iron dextran and vitamin D analogues, exceeded providers' costs by an average of 25 percent over the 1996-1999 period.[6] Although the OIG (2000) did not compare

3 The USRDS is operated by National Institute of Diabetes and Digestive and Kidney Diseases with support from HCFA. It collects, analyzes, and distributes in annual reports and special studies information on the incidence and prevalence of treated ESRD, modality of treatment, causes of death, patient survival, and hospitalization.

4 The OIG recommended that HCFA educate ESRD providers and independent laboratories about proper billing practices, monitor providers' billing for lab tests outside the composite rate, and recover the estimated overpayments.

5 This was calculated by comparing providers' costs to provide erythropoietin to Medicare's payment (derived from dialysis facility cost report data).

6 This fraction was calculated by comparing providers' costs of furnishing separately billable drugs (derived from dialysis facility cost report data) to payments for separately billable drugs (derived from HCFA's institutional outpatient standard analytic file). To determine total Medicare charges for separately billable drugs, we compiled a list of revenue center codes (0630, 0631, 0632, 0633, 0636) representing drugs other than erythropoietin covered by Medicare. Facilities use revenue center codes to define the products or services provided. We then determined the Medicare total charges billed by each freestanding dialysis facility for each of these revenue center codes. Allowed charges were estimated for each freestanding dialysis facility by multiplying total charges for ESRD drugs by the ratio of aggregated allowed charges to total charges reported on the claim.

payments for separately billable drugs to providers' costs, it did determine that Medicare's payments for separately billable drugs other than erythropoietin exceeded the VA contracted prices by 37 to 56 percent and Medicaid reimbursement amounts by 5 to 38 percent.

These findings strongly suggest that the positive payment margins of erythropoietin and other separately billable drugs may be subsidizing the lower margins under the composite rate.

Finally, the Commission considered the potential effectiveness of revising how Medicare pays for services outside the payment bundle without making any other change to the payment bundle. In September 2000, HCFA announced its intent to do this beginning January 2001, using an AWP list compiled by the Department of Justice to determine Medicare payment allowances for 32 drugs and biologicals, including many of the separately billable drugs administered to dialysis patients. The AWPs compiled by the Department of Justice are significantly lower than those used by HCFA. In November 2000, HCFA suspended implementation of this new AWP list, stating that the agency continues to believe that the AWPs reported in commercially available sources exceeded the true wholesale prices charged in the marketplace but would delay action because of anticipated congressional action on this issue. Shortly thereafter, the BIPA was enacted, requiring the Comptroller General to submit a report to the Congress and the Secretary by June 30, 2001 on revising the methods currently used to determine Medicare's Part B payment rates for drugs and biologicals.

Changing the payment for separately billable medications might encourage more efficient use and reduce positive payment margins, but would not by itself address the broader issue of subsidizing services included in the payment bundle with the payments for separately billable services. Modifying payment for separately billable medications without modifying payment for the services in the composite rate bundle could potentially harm patient care. Dialysis facilities might stop furnishing separately billable medications if they became unprofitable, resulting in patients needing to go to other sites of care, such as hospital outpatient departments, to obtain these services.

Implementing a broadened payment bundle

To broaden the payment bundle, the Secretary will need to identify the medications, services, and equipment associated with the provision of dialysis and should try to identify clinical practices that will increase the efficiency of patient care and improve patient outcomes. This complex task should be guided by public and private efforts that have identified optimal renal practices. For example, the NKF has developed clinical practice guidelines on hemodialysis, peritoneal dialysis, anemia, vascular access, and nutrition (NKF 1997). The National Institutes of Health (NIH) has published a consensus statement on dialysis adequacy and dose (NIH 1993).

The Secretary will need to ensure that broadening the payment bundle does not restrict patients' access to available treatment options. One aim of broadening the payment bundle is to afford providers increased flexibility in furnishing renal care by including all treatment options approved by the Food and Drug Administration (FDA), not just the least costly option, in the payment bundle. Patients should continue to have access to all available services and items, even though substantial cost savings might be achieved if the bundle included only the least costly service or item.

The Secretary should consider including in the bundle certain services for which Medicare currently has restrictive coverage policies. For example, Medicare's coverage policy severely limits the number of dialysis patients who qualify for nutritional therapy, despite the fact that malnutrition is a frequent complication of ESRD and is a significant cause of morbidity and mortality in dialysis patients.[7] The guideline on nutrition care recently published by the NKF recommends that individuals undergoing maintenance dialysis who are unable to meet their protein and energy requirements with food intake for an extended period of time should receive nutrition support (K/DOQI 2000).

The Secretary should also consider including certain components of vascular care in the payment bundle. Currently, Medicare does not pay for noninvasive procedures used to monitor patients' vascular access sites when performed at dialysis facilities. Vascular access complications are the second most frequent cause of hospitalization among ESRD patients (USRDS 2000). Including some component of vascular care in the bundle may ultimately improve the quality of dialysis care by decreasing the rate of complications.

Finally, the Secretary should study whether the current unit of payment should be expanded. Ideally, the unit of payment should promote the efficient provision of high-quality care and reflect the way providers think about the product. All patients with ESRD, other than those who undergo kidney transplantation, require a life-long, regular course of dialysis. If providers view patients' care in terms of a continuous stream of care, then a unit of payment longer than a single session should be considered. Changing the unit of payment to either a week or a month would give providers more flexibility in furnishing care. In addition, lengthening the unit of payment would better enable Medicare to include in the payment bundle separately billable services that are not always furnished during each dialysis session, such as certain injectable medications and laboratory tests. A weekly payment rate could correspond with how peritoneal dialysis and daily hemodialysis are furnished; a monthly payment could

7 For this reason, the Commission previously recommended that Medicare determine clinical criteria for ESRD patients to be eligible for oral, enteral, or parenteral nutritional supplements and provide coverage for these supplements (MedPAC 1999a).

correspond with Medicare's monthly capitated payment to physicians furnishing outpatient care to dialysis patients.

Monitoring quality of care

One concern about broadening the payment bundle is the potential for providers to stint on care. This occurred with Medicare's fixed payment policy for erythropoietin from 1989 to 1991. Lower erythropoietin doses were furnished than those suggested by the labeling approved by the FDA, which recommends a starting dose of 3,400 to 6,800 units per treatment (assuming an average patient weight of 68 kilograms). In 1990, the average dose ranged from 2,500 to 2,800 units per treatment (Collins et al. 1998). Consequently, the Congress changed payment from a flat rate to a dose-dependent rate in 1991.

When HCFA implemented the flat rate per dose payment in 1989, there were no clinical performance measures in place to monitor the quality of dialysis care. Since 1993, however, HCFA has monitored certain aspects of the quality of dialysis care in its annual survey of selected intermediate outcomes, including anemia and nutrition levels and dialysis adequacy. In addition, the agency has recently set forth dialysis clinical performance measures. Eighteen network organizations, under contract to HCFA, promote improved quality of care through education and the collection, analysis, and dissemination of data. Finally, the recently implemented Standardized Information Management System, a national information infrastructure that electronically links all the networks with HCFA, is expected to facilitate quality improvement programs and the collection and analysis of information on processes and outcomes of care.

Because the continued emphasis on quality monitoring and improvement is critical to ensure access to high-quality dialysis care, the Secretary should continue efforts in this area. In addition, HCFA's clinical performance measures need to keep up with guidelines published by private renal groups, including the NKF and the Renal Physicians' Association, and other public bodies, including the NIH and the Centers for Disease Control and Prevention.

Developing a classification system

Currently, the composite rate does not account for differences in resource use, including differences attributable to the use of different dialysis methods. In addition, the rate does not account for factors known to affect providers' costs, including dialysis dose and frequency and patient acuity. Patients' access to quality dialysis care, particularly more frequent and longer dialysis, is being impaired because the payment system does not account for these factors.

RECOMMENDATION 8C

The Congress should instruct the Secretary to revise the outpatient dialysis payment system to account for factors that affect providers' costs to deliver high-quality clinical care, including dialysis method, dose, frequency, and patient acuity.

This recommendation concerns dialysis payments generally and also addresses the question posed by the BBRA on home hemodialysis payment methods. The Commission supports payment systems that account for the costs that efficient providers incur in furnishing high-quality care. To account for differences in resource use, including differences attributable to the costs of furnishing more frequent and longer hemodialysis in patients' homes, the composite rate should use a classification system.

In MedPAC's June 1999 report, the Commission recommended that the Secretary examine the feasibility of modifying the composite rate to allow for different payments based on factors related to dialysis adequacy. We believe there is now sufficient evidence for the Secretary to develop a classification system that differentiates payment based on factors affecting providers' costs, including dialysis method, frequency, dose, and patient acuity.

Although different equipment, supplies, and labor are needed for hemodialysis and peritoneal dialysis, the current payment system does not differentiate payment based on dialysis method. In 1998, the mean costs of furnishing in-center hemodialysis were about 10 percent higher than the costs of furnishing peritoneal dialysis. The different types of equipment and supplies used for hemodialysis and peritoneal dialysis account for some of this cost difference rather than the frequency at which dialysis is furnished. Specifically, peritoneal dialysis is less capital intensive than hemodialysis. In hemodialysis, blood is cycled from the patient's body through a dialysis machine which filters out body waste before being returned to the patient. In peritoneal dialysis, a solution is introduced into the peritoneal cavity though a catheter. Excess waste products and water pass through the membrane lining of the peritoneal cavity into the dialysis solution, which is then drained through the abdomen. In addition, the different use of patient care staff employed by dialysis facilities also accounts for some of the cost difference between peritoneal dialysis and hemodialysis. Peritoneal dialysis is generally performed in patients' homes, which reduces the need for facility personnel.

Costs also vary based on dialysis frequency, but the payment system does not account for these differences. HCFA has capped weekly dialysis payments to providers at an amount equal to the cost of providing three hemodialysis sessions per week. MedPAC analysis of 1998 cost report data for dialysis facilities shows that the costs of furnishing thrice-weekly hemodialysis in patients' homes averages $355 per week.[8] By comparison, estimates of the costs of furnishing daily

8 Although the cost report category for home hemodialysis includes the costs for both thrice-weekly and daily dialysis, home hemodialysis is predominantly furnished thrice-weekly.

hemodialysis in patients' homes range from $420 to $460 per week (Project Hope 1999, Lockridge 2000). This cost differential is most likely due to the increased supply and labor costs associated with furnishing home dialysis five to seven times per week versus three times per week.

Similarly, in dialysis facilities, the weekly costs of furnishing more frequent hemodialysis exceed the costs of furnishing thrice-weekly hemodialysis by about 15 to 20 percent (Project Hope 1999, Ting et al. 1998). This difference also is primarily due to the increased supply and labor costs associated with furnishing more frequent dialysis.

The current payment system also does not differentiate payment based on the dose of dialysis even though increasing the dose affects providers' costs. For example, Hirth and colleagues (1999) showed that increasing the length of in-center hemodialysis sessions by 5 percent increased providers' costs by 1.4 percent, and using newer synthetic and modified cellulose dialyzer membranes instead of older cellulose membranes increased providers' costs by about 15 percent. Depending on the method of dialysis, there are alternative methods to increase dialysis dose. For hemodialysis, dose may be increased by using dialyzer membranes with large surface areas, using faster blood or dialysate flow rates, undergoing longer treatment times, or dialyzing more frequently. For peritoneal dialysis, alternative ways to increase dose include increasing the number of exchanges and increasing the volume per exchange.

Finally, payment is not adjusted for patient acuity, which also may affect the costs of furnishing dialysis. Payment regulations allow dialysis facilities to apply for an exception to their payment rate based on atypical patient mix, but the exception policy does not address the issue that different patients need different amounts of staff time. Certain patient characteristics, including age, race, ethnicity, and liver function levels, affect providers' costs (Dor et al. 1992, Hirth et al. 1999).

Patients' physiological, psychological, and sociological needs may also affect the level of care. Results from two studies show that caregivers spent more time with older, functionally dependent patients with multiple comorbidities, (Freund et al. 1998, Sankarasubbaiyan and Holley 2000). Based on an assessment of nursing and technical staff requirements in one ESRD Network, Mapes and colleagues (1983) proposed that five levels of patient acuity be considered in designing a dialysis payment system:

- patient requires continuous direct/indirect nursing assessment or intervention
- patient requires frequent direct/indirect nursing assessment or intervention
- patient requires moderate amount of direct/indirect nursing assessment or intervention
- patient requires minimal amount of direct/indirect nursing assessment or intervention
- patient requires least amount of direct of direct/indirect nursing assessment or intervention.

Implementing a classification system

In designing an effective classification system for the outpatient dialysis payment system, the Secretary should ensure that it meets two essential criteria. First, it should account for a reasonably high proportion of the predictable variation in providers' costs resulting from clinical and other differences among patients and services. Second, the classification variables must be reasonably objective and easily monitored. If this criterion is not met, providers would have incentives to increase their revenues by manipulating the classification variables to assign services or patients to higher-paid categories.

As mentioned above, dialysis method, frequency, dose, and patient acuity have been shown to affect providers' costs. The Secretary should investigate these and other variables to include in the system. Certain demographic and clinical characteristics of ESRD patients have been shown to affect providers' costs. Other patient characteristics that may be related to acuity, such as primary cause of renal failure and other comorbid conditions, have not yet been found to be associated with providers' dialysis costs, but do affect total Medicare payments (Beddhu et al. 2000, Farley et al. 1996, Lewin 2000). The lack of an association between these latter characteristics and providers' costs may reflect inadequate dialysis dosing for patients who are unstable or acutely ill.[9] It is possible that dialysis treatment that appears homogeneous across patients with regard to costs actually may deliver lower doses to certain seriously ill patients. For example, patients with diabetes and heart disease are more likely to experience symptoms and physiological alterations during dialysis. These alterations often require reducing the blood flow rate or interrupting treatment altogether. If the total time on dialysis is not increased for these patients, they may systematically receive lower doses of dialysis than patients without similar comorbidities. Data from HCFA's Clinical Performance Measurement Project show that inadequate dialysis persists in about 25 percent of hemodialysis patients (HCFA 1999).

In addition, the Secretary should consider the need to include the place where patients are dialyzed—in dialysis facilities or in patients' homes—as classification variables. Payments should be adequate to ensure continued access to home dialysis.

9 Two measures of adequacy of dialysis are the urea reduction ratio and Kt/V. The urea reduction ratio is the percent reduction in blood urea nitrogen concentration during a single dialysis session and is usually measured once per month. Kt/V is a dimensionless index based on the dialyzer clearance rate (K), the time spent on dialysis (t), and the volume of fluid completely cleared of urea in a single treatment (V). The NKF, NIH, Renal Physicians Association, and HCFA have advocated a urea reduction ratio of 65 percent or more or a Kt/V of 1.2 or more as a threshold for adequate dialysis.

Home dialysis facilitates patients' rehabilitation goals of continuing or resuming personally and socially valued activities such as employment and volunteer work because it permits more flexible scheduling of the dialysis procedure than does in-center care.

In developing the classification system, the Secretary will need to establish relative values that reflect the expected costliness of specific patients or services compared with the overall average costliness of providing care. To accomplish this task, the Secretary will need to determine the mix of services required to produce dialysis, how the costs of these services vary among classification categories, and the factors likely to affect efficient providers' production costs. Information on current cost reports may not be sufficient to construct relative values because cost report data do not specify the costs of dialysis methods not currently paid for by Medicare. In addition, cost reports do not include information about how costs vary based on dialysis dose or patient acuity. Consequently, information on relative values will need to be obtained from research studies and expert opinion.

Finally, HCFA will have to pay attention to the possibility of upcoding in designing a classification system. Incentives to increase the number of beneficiaries with a characteristic associated with higher payment rates may be high. One way to minimize the potential for upcoding is to use information that is easily amenable to audit. In addition, the Secretary can develop clinical criteria for other variables, such as dialysis dose, for determining which patients would qualify for additional payment for increased dialysis dose. Medicare already uses clinical criteria in paying for other dialysis-related services, such as erythropoietin. Development of such clinical criteria should be done collaboratively with private renal organizations. The NKF and the Renal Physicians Association have led the effort to develop clinical practice guidelines for treating patients with chronic renal insufficiency and failure.

Improving quality of care

A final issue to consider when implementing a classification system is its impact on quality of care. Using a classification system should have a positive effect on patients' quality of care by enabling providers to increase dialysis dose when clinically needed, decreasing the use of other dialysis-related services, and increasing access to different methods of treatment.

Payments accounting for the factors affecting dialysis dose would give providers more flexibility in caring for their patients. For example, providers have expressed interest in increasing the dose of thrice-weekly dialysis for certain patients, either by prescribing a fourth hemodialysis session per week or by extending the length of the thrice-weekly sessions. Medicare's policy limits payment to three hemodialysis sessions and the exception policy does not cover increasing the number of dialysis sessions.

Increasing dialysis dose increases survival in patients receiving inadequate dialysis. Owen and colleagues (1993) showed that patients receiving inadequate dialysis (with urea reduction ratio values below 60 percent) were 1.3 to 1.4 times more likely to die compared with patients receiving adequate dialysis (with urea reduction ratio values of 65 to 69 percent). As mentioned earlier, inadequate dialysis persists in about 25 percent of hemodialysis patients (HCFA 1999). Researchers have shown that one factor contributing to this inadequate dialysis is the underprescription of dialysis dose.

Increasing dialysis dose also reduces patients' morbidity and use of health services. For example, increasing the dose of dialysis for patients with anemia who are receiving inadequate dialysis significantly improves their anemia status (Ifudu et al. 1996). Movilli and colleagues (2001) showed that patients receiving adequate dialysis (with Kt/V levels ≥ 1.4) required lower weekly erythropoietin doses than did patients receiving inadequate dialysis (Kt/V levels ≤ 1.2). Additionally, the improved health status associated with receiving adequate dialysis ultimately translates into lower costs of care. USRDS data show that Medicare spending for hemodialysis patients receiving adequate dialysis (with urea reduction ratios greater than 65 percent) is about 15 percent lower than for patients receiving inadequate dialysis (with urea reduction ratios less than 65 percent) (USRDS 2000).

A classification system that pays based on the method of treatment will enhance patient choice of dialysis methods. It is unlikely that use of daily hemodialysis will diffuse without a change to the payment system. Medicare's current payment system is consistent with the provision of thrice-weekly dialysis. If weekly costs of furnishing daily dialysis exceed Medicare payments, as they appear to do, current policy will act as a barrier to expanding its use. Even given the possible clinical benefits of daily hemodialysis, providers are unlikely to promote this modality if their costs exceed Medicare payments.

Increasing the frequency of hemodialysis to a daily basis, with or without increasing total dose, improves patients' outcomes (Buoncristiani et al. 1999, Hanly and Pierratos 2000, Kooistra et al. 1998, Mucsi et al. 1998, Woods et al. 1999). Patients who switched from thrice-weekly hemodialysis to daily hemodialysis have:

- improved quality of life, including better energy levels, physical functioning, and mental health,
- improved clinical outcomes, including lower blood pressure and serum phosphate levels,
- improved anemia and nutritional status and better management of sleep apnea,
- decreased use of certain health services, including inpatient hospitalization, and
- decreased need for certain medications, including erythropoietin and antihypertensives.

The improved outcomes associated with daily hemodialysis are hypothesized to stem from increased dialysis adequacy and the lack of oscillations in toxin and

fluid levels that result with thrice-weekly hemodialysis. Thrice-weekly hemodialysis results in fluctuations of body fluid volume and solute; in contrast, increasing the dialysis frequency may better mimic the healthy situation, with smaller fluctuations of solute concentrations and body fluid volume (Kooistra et al. 1998).

Making other adjustments to rates

In revising the payment system for dialysis, the Secretary will need to consider other rate adjustments for factors that affect an efficient providers' costs and are beyond providers' control, including differences in input-prices. Given variation in the price of inputs among market areas, accounting for differences in prices is essential to paying fairly in specific market areas. In the current payment system, the labor portion of the composite rate is adjusted using two dated wage indexes not specific to the labor mix employed by dialysis facilities.

RECOMMENDATION 8D

The Congress should instruct the Secretary to develop a wage index based on market wage rates for occupations typically used in furnishing dialysis.

Chapter 4 addresses the issues to be considered in developing effective wage indexes.

A related issue for the Secretary to consider is whether to continue using "floor" and "ceiling" payments, as is now done in paying for dialysis. Currently, areas with labor costs less than 90 percent of the national average are raised to the 90 percent level (the payment "floor"), while those with costs exceeding 130 percent of the national average are lowered to the 130 percent level (the payment "ceiling"). In 1998, about 15 percent of facilities were at the payment floor and 2 percent were at the ceiling. Three-quarters of the facilities receiving floor payments were in rural areas.

In implementing the outpatient dialysis payment system in 1983, the Secretary used these lower and upper limits out of concern that the hospital wage index overstated the amount of variation in the costs of the labor inputs for ESRD services (HCFA 1983). However, Hirth and colleagues (1999) found that facilities receiving floor payments do not spend more on patient care, while facilities receiving ceiling payments incur substantially higher costs than would be expected given their actual payment.[10]

Finally, when revising the payment system for outpatient dialysis, the Secretary should consider the need for other rate adjustments, such as an adjustment for the type of dialysis facility. Under the current payment system, hospital-based facilities receive a payment that is on average $4 more than freestanding dialysis facilities. This stems from the Omnibus Budget Reconciliation Act of 1981, in which the Congress mandated separate rates for these types of facilities. Based on 1977-1979 cost report data, the Secretary established a base composite rate of $127 per treatment for hospital-based facilities and $123 per treatment for freestanding facilities. HCFA attributed the higher costs incurred by hospital-based facilities in providing outpatient dialysis to overhead, rather than patient case-mix or complexity, and no current evidence suggests different practice patterns in hospital-based facilities or that these facilities treat patients of higher acuity than freestanding facilities do. If higher costs result from treating a more severely ill patient population, then adjusting outpatient dialysis payments to account for patient acuity will appropriately ensure that payments match providers' costs.

Setting and updating the base payment rate

In addition to determining the payment bundle, classification system and payment adjustments for a revised outpatient dialysis payment system, the Secretary will need to set a base payment amount, which represents the amount Medicare pays for a standard service. At issue is how to calculate an initial value for this payment amount that reflects the costs efficient providers incur in providing the bundle of services. The Secretary will need to consider the merits of using information from providers' cost reports for services currently covered in the composite rate bundle, information from claims data for services that are currently separately billable, and other information from research or demonstration projects.

When HCFA developed the current payment system, it used information from dialysis facility cost reports for the 1977-1979 period. As mentioned earlier, information from more recent cost reports may not be sufficient to set payment amounts for the revised payment system outlined in this paper. Medicare cost reports for dialysis facilities provide information on the costs of in-center and home hemodialysis and peritoneal dialysis but they do not provide separate cost categories based on the dose and frequency of dialysis.

Further, the cost reports may not reflect the efficient costs of quality care. On the one hand, current costs may be lower than dictated by patients' resource needs because of constraints from the payment system. For example, more than 80 percent of dialysis facilities have adopted the practice of reusing synthetic dialyzer membranes in an attempt to contain costs. Several observational studies suggest that patients treated in certain facilities that reuse dialyzers have higher hospitalization and mortality rates (Feldman et al. 1996; Feldman et al. 1999). Cost reports do not include the costs of certain dialysis services, such as the labor associated with administering separately billable medications. Cost reports do not include information on the costs of daily hemodialysis, as this method of dialysis is not currently paid for by Medicare. Finally, even supplementing cost reports with claims data may give an inaccurate picture of the cost of providing care. Some costs may not be accounted for, such as oral drugs for which Medicare does not

10 Using a wage index based on a provider's occupation mix should minimize distortions in the wage index and should obviate the need to use payment upper and lower limits.

pay for. On the other hand, cost reports may overstate patients' resource needs because payment rules have led to the overuse of some relatively costly items. As a result of all of this, the Commission urges the Secretary to evaluate alternative data sources in setting the base payment rate.

A final issue to consider in designing a new payment system is the method for updating the base payment amount to account for changes in the cost of providing dialysis over time. The updating process will take on added significance if the new system uses an expanded payment bundle that includes services subject to fee schedules that have historically been updated more frequently than the composite rate. The BIPA requires the Secretary to develop by July 2002 update methods for the current composite rate payment system that account for the projected inflation of input prices, anticipated scientific and technological advances, practice patterns, and market conditions, and to recommend to the Congress whether updates should be done annually or periodically.[11] To ensure access to quality dialysis care, the Commission believes that the update should be considered on an annual basis.

Updating the composite rate for calendar year 2002

Since it was first set in 1983 at $127 per session for hospital facilities and $123 per session for freestanding facilities, the composite rate has been changed on only four occasions by the Congress: it was decreased by $2 in 1986, increased by $1 in 1991, increased by 1.2 percent in 2000, and increased by 2.4 percent in 2001, consistent with MedPAC's update recommendation for calendar year 2001 (MedPAC 2000).[12]

RECOMMENDATION 8E

For calendar year 2002, the composite rate for outpatient dialysis services should remain unchanged.

In recommending an annual update to the payment rate for dialysis services, MedPAC considers: 1) changes in input prices, 2) productivity improvements, 3) the availability of new scientific and technological advances, and 4) market conditions.

The input price component of the Commission's update framework is based on the projected increase in a market basket index for dialysis facilities that is intended to measure the effect of changes in the prices of inputs for producing dialysis treatments. HCFA has not developed a dialysis market basket, so MedPAC constructed one by using input categories that reflect the full range of goods and services that dialysis providers purchase. Four cost components—capital, labor, other direct costs, and overhead—are used to develop the market basket, using data from the 1999 cost reports for freestanding facilities. Each component is weighted according to its share or proportion of total costs. The price change for each component is based on components of HCFA's input price indexes for PPS hospitals, skilled nursing facilities, and home health agencies. These price indexes for other providers were used because information specific to the dialysis industry are not available. MedPAC's analysis indicates that the prices dialysis facilities pay for their inputs will rise an estimated 2.6 percent between calendar years 2001 and 2002.

Second, the Commission estimated the productivity gains dialysis facilities can reasonably be expected to attain in the coming fiscal year by examining trends in a number of performance indicators. As shown in Table 8-1, we considered six measures: the number of treatments per full-time equivalent employee, staff mix as measured by the ratio of registered nurses to all direct patient care staff, staff mix as measured by the ratio of technicians to all direct patient care staff, the number of in-facility hemodialysis treatments per station, and the number of times hemodialyzers are reused.

TABLE 8-1

Trends in productivity for freestanding dialysis facilities, 1995–1999

Characteristic	Year				
	1995	1996	1997	1998	1999
Number of dialysis treatments per FTE	726	721	705	745	749
In-facility hemodialysis treatments per station	665	651	659	657	665
Nurse-to-staff ratio	0.36	0.37	0.37	0.37	0.36
Technician-to-staff ratio	0.49	0.51	0.52	0.53	0.54
Number of times dialyzers are reused	14.6	14.6	16.1	17.0	17.1
Hemodialysis session length (min)	203	208	210	212	NA

Note: The calculations represent mean values, weighted by the number of dialysis sessions at each facility. FTE (full-time equivalent employee), NA(not available). Nurse-to-staff ratio and technician-to-staff ratio refer to the ratio of registered nurses and technicians, respectively, to direct patient care staff (including registered and licensed practical nurses, nursing assistants, and technicians).

Source: Data compiled by MedPAC, HCFA 1999.

11 Prior to the BIPA, the Secretary was not required to consider an update to the composite rate payment. In our March 2000 report, MedPAC recommended that the Congress require HCFA to review the composite rate payment annually.

12 BIPA increases the composite rate payment by 2.4 percent plus an additional transitional percentage allowance equal to 0.39 percent effective April 1, 2001. This transitional percentage allowance continues only until December 31, 2001.

TABLE 8-2

Clinical performance indicators, 1994–1998

Performance indicator	Year				
	1994	1995	1996	1997	1998
Percent of hemodialysis patients receiving inadequate dialysis	51	41	32	28	26
Percent of hemodialysis patients with anemia	45	37	28	21	17
Percent of hemodialysis patients who are malnourished	21	17	19	17	17

Note: Patients receiving inadequate dialysis are those with urea reduction ratios of less than 65 percent. Patients with anemia are those with hematocrit levels less than 30 percent. Patients malnourished are those with serum albumin levels less than 3.5 gm/dL.

Source: HCFA 1999.

Between 1995 and 1999, freestanding dialysis facilities continued to improve productivity, although not to the extent they did between the mid-1980s and the mid-1990s (Held et al. 1990, IOM 1991). Although these productivity measures show how facilities use labor and other resources, they do not provide information regarding the extent to which facilities furnish high-quality care. For this reason, we also report information on intermediate clinical outcomes. As shown in Table 8-2, recent data show improvement in certain intermediate outcomes of dialysis. Unlike the labor and resource measures, these quality-of-care measures show whether facilities are making improvements in how they furnish dialysis care. Adequacy of dialysis and patients' anemia status have improved during the mid-1990s, despite an aging ESRD cohort that includes a greater proportion of individuals with diabetes, compared with the 1980s. This improvement in the quality of dialysis care suggests that the productivity gains of facilities may be even greater than indicated by the measures reported in Table 8-1.

The Commission's update framework also considers the costs facilities will incur to adopt new technologies that will enhance the quality of patient care but increase costs. MedPAC believes that the costs associated with technological advances should be financed in part through improvements in productivity. To identify new and emerging dialysis technologies, the Commission reviewed numerous data sources, including peer-reviewed literature, newsletters, newspapers, periodicals, and trade journals. This review suggest that the costs associated with quality-enhancing, cost-increasing technologies will be offset by the savings associated with expected productivity improvements.

In considering market conditions, we examined the growth of the provider community. The number of dialysis facilities in the United States continues to grow, keeping pace with the growth in the number of dialysis patients. Between 1993 and 1998, the number of dialysis units and the number of dialysis patients grew at about an 8 percent average annual rate of growth. Freestanding and for-profit facilities grew at the expense of hospital-based and not-for-profit facilities. Freestanding facilities increased from 74 to 81 percent of all dialysis facilities, while for-profit facilities increased from 62 to 73 percent. The number of freestanding for-profit facilities increased from 60 percent of all facilities in 1993 to 72 percent in 1998.

Dialysis chains are also consolidating. In November 2000, the largest for-profit dialysis chain (in terms of patients and facilities) announced that it is acquiring the sixth largest dialysis chain. MedPAC estimates that in 1998 three-quarters of all for-profit facilities were affiliated with a chain. The number of dialysis patients receiving care from the largest chains increased from about 10 percent of all dialysis patients in 1989 to about 60 percent of all dialysis patients in 1998 (Fresenius 1999, IOM 1991).

Cost report data from 1999 indicate that larger facilities have greater economies of scale than smaller facilities (Table 8-3). These data confirm an earlier study that found economies of scale by facility size (Dor et al. 1992).

TABLE 8-3

Productivity of freestanding dialysis facilities, by facility size, 1999

Type of facility	Number of dialysis treatments per FTE	In-facility hemodialysis treatments per station	Nurse-to-staff ratio	Technician-to-staff ratio	Hemodialysis shifts per week
Small	708	463	0.40	0.47	9.8
Medium	726	611	0.37	0.53	11.6
Large	781	761	0.34	0.56	14.1

Note: The calculations represent mean values weighted by the number of dialysis sessions reported at each facility. Facility sizes are defined in each year based on the 25th and 75th percentile of dialysis sessions. Small facilities are those reporting dialysis sessions less than or equal to the 25th percentile of all dialysis sessions, medium facilities are those reporting dialysis sessions greater than the 25th percentile but less than the 75th percentile of all dialysis sessions, and large facilities are those reporting dialysis sessions greater than or equal to the 75th percentile of all dialysis sessions. FTE (full-time equivalent employee). Nurse-to-staff ratio and technician-to-staff ratio refer to the ratio of registered nurses and technicians, respectively, to direct patient care staff (including registered and licensed practical nurses, nursing assistants, and technicians).

Source: Data compiled by MedPAC.

Another measure that the Commission considered was the adequacy of the prospective payment associated with services included in the composite rate bundle. Using cost report data from freestanding facilities for the most recent four-year period available, calendar years 1996 through 1999, we evaluated the adequacy of composite rate payments by calculating a Medicare payment-to-cost ratio, which compares the composite rate payments facilities receive from Medicare for dialysis treatments with the facilities' Medicare-allowable costs (Table 8-4). We also calculated broader payment-to-cost ratios by comparing the payments facilities receive from Medicare for dialysis treatments, erythropoietin, and other separately billable drugs with their Medicare-allowable costs.

TABLE 8-4

Payment-to-cost ratios for composite rate services and separately billable drugs for freestanding dialysis facilities, 1996–1999

	1996	1997	1998	1999
Composite rate services for in-center hemodialysis				
all facilities	1.02	0.99	0.98	0.97
urban	1.02	1.00	0.99	0.97
rural	1.01	0.99	0.96	0.96
not-for-profit	0.97	0.94	0.93	0.89
for-profit	1.03	1.00	0.99	0.98
small	0.92	0.90	0.88	0.87
medium	1.00	0.99	0.96	0.95
large	1.05	1.02	1.02	1.01
Composite rate services for in-center and home dialysis				
all facilities	1.03	1.01	0.99	0.98
urban	1.03	1.01	0.99	0.98
rural	1.01	0.99	0.96	0.97
not-for-profit	0.99	0.96	0.94	0.90
for-profit	1.04	1.01	1.00	0.99
small	0.93	0.91	0.90	0.88
medium	1.01	0.99	0.97	0.96
large	1.07	1.04	1.03	1.02
Composite rate services, erythropoietin, and other separately billable drugs				
all facilities	1.09	1.08	1.07	1.07
urban	1.09	1.08	1.08	1.07
rural	1.09	1.09	1.06	1.07
not-for-profit	1.07	1.03	1.05	1.00
for-profit	1.10	1.09	1.08	1.08
small	1.01	1.00	0.99	0.99
medium	1.08	1.08	1.06	1.05
large	1.12	1.10	1.10	1.10

Note: The calculations represent mean payment-to-cost ratios, weighted by the number of dialysis sessions at each facility. See notes on Table 8-3 for the definition of facility size. These ratios may understate providers' costs because only Medicare-allowable costs are taken into account. While our analysis shows how well Medicare does in covering the costs it is legally obligated to pay for, this approach does not measure how much providers actually gain or lose, on average, from caring for Medicare patients.

Source: Data compiled by MedPAC.

Data from 1999 cost reports indicate that the composite rate payments to freestanding facilities did not cover the costs of providing dialysis services covered under the composite rate in that year. The payment-to-cost ratios for in-center and home hemodialysis and the two major forms of peritoneal dialysis fell from 1.03 in 1996 to 0.98 in 1999. Payment-to-cost ratios vary considerably based on facilities' size and profit status. For example, the average cost per dialysis treatment incurred by small facilities is 10 percent greater than that incurred by large facilities.

Including the payments and costs for erythropoietin and other separately billable drugs increases payment-to-cost ratios for all types of facilities by 5 to 10 percentage points during the four-year period. Medicare's payments exceeded costs by at least 5 percentage points in 1999 for all facilities other than small and not-for-profit facilities.

Three caveats associated with the payment-to-cost ratios presented in Table 8-4 are as follows. First, providers' costs may be underestimated because nonallowable costs are not taken into account. While our analysis shows how well Medicare does in covering the costs it is legally obligated to pay for, this approach does not measure how much providers actually gain or lose, on average, from caring for Medicare patients. Second, providers' costs for separately billable services may be underestimated because they cannot claim bad debt for separately billable drugs.[13] Lastly, the payment-to-cost ratios in Table 8-4 do not reflect the effect of price increases for separately billable drugs that occurred last year. For example, the price of erythropoietin was increased by 3.9 percent in February 2000.

13 Hospital-based and freestanding facilities are paid 100 percent of their allowable ESRD Medicare bad debts for composite rate services, up to their Medicare reasonable costs.

TABLE 8-5

Estimated payment-to-cost ratios for composite rate services and separately billable drugs for freestanding dialysis facilities, 2002

	1999 (actual)	2002 Without market basket increase (estimated)	2002 With market basket increase (estimated)
Composite rate services: in-center and home dialysis modalities			
all facilities	0.98	1.02	1.05
small	0.88	0.91	0.93
medium	0.96	1.00	1.02
large	1.02	1.07	1.10
Composite rate services, erythropoietin and other separately billable drugs			
all facilities	1.07	1.07	1.09
small	0.99	1.00	1.02
medium	1.05	1.06	1.08
large	1.10	1.11	1.12

Note: The calculations represent mean payment-to-cost ratios, weighted by the number of dialysis sessions at each facility. See notes on Table 8-3 for the definition of facility size. These ratios may understate providers' costs because only Medicare-allowable costs are taken into account. While our analysis shows how well Medicare does in covering the costs it is legally obligated to pay for, this approach does not measure how much providers actually gain or lose, on average, from caring for Medicare patients.

Source: Data compiled by MedPAC.

The Commission modeled expected payment-to-cost ratios in 2002, taking into account the effect of increased costs for separately billable drugs and composite rate services, as well as recent increases in composite rate payments. To estimate payments in 2002, each facility's 1999 composite rate payment was increased by 1.2 percent in 2000 and 2.4 percent in 2001, as mandated by the BBRA and BIPA, respectively. In both scenarios, 1999 payment rates for erythropoietin and other separately billable drugs were used. We modeled two scenarios, one providing for a market basket increase to the composite rate in 2002, and one assuming no increase in that year.

Providers' costs in 2002 were estimated by: 1) inflating providers' costs for services in the composite rate payment bundle by the market basket estimates for 2000, 2001, and 2002; 2) inflating providers' costs for erythropoietin by 3.9 percent, the announced price increase in 2000[14]; and 3) inflating providers' costs for other separately billable drugs by the projection in the skilled nursing facility market basket for pharmaceuticals in 2000, 2001, and 2002.

The data in Table 8-5 suggest that payment-to-cost ratios for dialysis services will remain less than 1.0 for small facilities, even with the composite rate payment increases mandated by the BBRA and the BIPA. When considering both the payments and costs of services included in the composite rate payment bundle and payments and costs for separately billable drugs, however, payment-to-cost ratios are equal to or exceed 1.0 for all types of facilities, even without the market basket increase to the composite rate payment in 2002.

Consequently, MedPAC recommends no update to the composite rate for calendar year 2002. In making this recommendation, the Commission paid special attention to evidence on the current state of market conditions, which shows continued growth in the industry, and the apparent subsidization of services included in the composite rate bundle by positive margins for separately billable services. The results of the update analysis also support our recommendation to revise the current outpatient dialysis payment system so that its prospective payment bundle includes the full range of services generally provided during dialysis, as well as the Commission's general principle of setting payment rates to account for the costs of efficient providers.

14 Because there were no price increases announced by the manufacturer of erythropoietin in 2001 or 2002, its costs were not inflated in these years.

References

Beddhu S, Bruns FJ, Saul M, et al. A simple comorbidity scale predicts clinical outcomes and costs in dialysis patients, American Journal of Medicine. June 2000, Vol. 1, No. 108, p. 609-13.

Blagg CR. A brief history of home hemodialysis, Advances in Renal Replacment Therapy. April 1996,Vol. 3, No. 2, p. 99-105.

Buoncristiani U, Fagugli R, Ciao G, et al. Left ventricular hypertrophy in daily dialysis, Miner Electrolyte Metab. Jan-Apr 1999, Vol. 25, p. 90-94.

Collins AJ, Ma JZ, Xia A, Ebben J. Trends in anemia treatment with erythropoietin usage and patient outcomes, Am J Kidney Dis. Dec 1998, Vol. 32, No. 6, p. S133-41.

Dor A, Held PJ, Pauly MV. The Medicare cost of renal dialysis, Medical Care. October 1992, Vol. 30, No. 10, p. 879-891.

Farley DO, Carter GM, Kallich JD, et al. Modified capitation and treatment incentives for end-stage renal disease, Health Care Financing Review. Spring 1996, Vol. 17, No. 3, p. 129-142.

Feldman HI, Bilker WB, Hackett M, et al. Association of dialyzer reuse and hospitalization rates among hemodialysis. Am J Nephrol 19: 641-648, 1999.

Feldman HI, Kinosian M, Bilker WB, et al. Effect of dialyzer reuse on survival of patients treated with hemodialysis. JAMA 276: 620-625, 1996.

Fresenius Medicare Care. Fresenius medical care overview. Washington (DC), Fresenius Medical Care. February 1999.

Freund L, Burrows-Hudson S, Preisig P. Development of a patient classification system for chronic hemodialysis patients, Am J Kidney Dis. May 1998, Vol. 31, No. 5, p. 818-829.

General Accounting Office. Medicare dialysis patients. Widely varying lab test rates suggest need for greater HCFA scrutiny, GAO/HEHS-97-202. Washington (DC), GAO. September 1997.

Hanly PJ, Pierratos A. Improvement of sleep apnea in patients with chronic renal failure who undergo nocturnal hemodialysis, New England Journal of Medicine. January 2001, Vol. 344, No. 2, p. 102-107.

Health Care Financing Administration. ESRD Clinical Performance Measures Project. Baltimore, MD, HCFA. December 1999.

Health Care Financing Administration. Prospective reimbursement for dialysis services and approval of special purpose renal dialysis facilities, 42 FR Part 405. Washington (DC), Department of Health and Human Services. May 1983.

Held PJ, Garcia JR, Pauly MV, et al. Price of dialysis, unit staffing, and length of dialysis treatments: American Journal of Kidney Diseases. May 1990, Vol. 15, No. 5, p. 441-450.

Hirth RA, Held PJ, Orzol SM, et al. Practice patterns, case mix, Medicare payment policy, and dialysis facility costs, Health Services Research. February 1999, Vol. 33, No. 6, p. 1567-1592.

Ifudu O, Feldman J, Friedman EA. The intensity of hemodialysis and the response to erythropoietin in patients with end-stage renal disease, N Engl J Med. February 1996, Vol. 15, No. 334, p. 420-425.

Institute of Medicine. Kidney failure and the federal government. Washington (DC), National Academy Press. 1991.

K/DOQI Clinical Practice Guidelines for Nutrition in Chronic Renal Failure, Am J Kidney Dis. June 2000, Vol. 35, No. 2, p. S1-S3.

Kaufman JS, Reda DJ, Fye CL, et al. Subcutaneous compared with intravenous epoetin in patients receiving hemodialysis,N Engl J Med. August 1998, Vol. 27, No. 339, p. 578-583.

Kjellstrand C, Ting G. Daily hemodialysis: dialysis for the next century, Adv Ren Replace Ther. October 1998, Vol.5, No. 4, p.267-74.

Kooistra MP, Vos J, Koomans HA, Vol PF. Daily home haemodialysis in the Netherlands: effects on metabolic control, haemondynamics, and quality of life, Nephrology, Dialysis, Transplantation. 1998, Vol 13, p. 2853-2860.

Lewin Group. Capitation models for ESRD: Methodology and results. Falls Church (VA), the Lewin Group. January 2000.

Lockridge R, Lynchburg Nephrology, Inc. Presentation to Nancy Ray, MedPAC. Washington (DC). March 28, 2000.

Mackenzie P, Mactier RA. Home haemodialysis in the 1990s, Nephrol Dial Transplant. August 1998, Vol. 13, No. 8, p.1944-8.

Mapes D, Hopper S, Jones V, et al. A staffing system for dialysis facilities based on patient acuity, AANNT J. December 1983 Vol. 10, No. 7, p. 11-19.

Medicare Payment Advisory Commission. Report to the Congress: Medicare payment policy. Washington (DC), MedPAC. March 2000.

Medicare Payment Advisory Commission. Report to the Congress: Medicare payment policy. Washington (DC), MedPAC. June 1999a.

Medicare Payment Advisory Commission. Report to the Congress: Medicare payment policy. Washington (DC), MedPAC. March 1999b.

Movilli E, Cancarini GC, Zani R, et al. Adequacy of dialysis reduces the doses of recombinant erythropoietin independently from the use of biocompatible membranes in haemodialysis patients. Nephrology Dialysis Transplantation 2001, Vol. 16, No. 1, p. 111–114.

Mucsi I, Hercz G, Uldall R, et al. Control of serum phosphate without any phosphate binders in patients treated with nocturnal hemodialysis, Kidney Int. May 1998, Vol. 53, No. 5, p.1399-4.

National Institutes of Health. Morbidity and mortality of dialysis, NIH Consensus Statement, November 1993, Vol 11, No. 2, p.1-33.

National Kidney Foundation. Dialysis outcomes quality initiative, clinical practice guidelines. New York, NKF. 1997.

Nissenson AR, Prichard SS, Cheng IK, et al. Non-medical factors that impact on ESRD modality selection, Kidney Int. February 1993, Vol. 40, p. S120-7.

Office of Inspector General. Medicare reimbursement of end-stage renal disease drugs, OEI-03-00-00020. Washington (DC), OIG. June 2000.

Office of Inspector General. Review of EPOGEN reimbursement, A-01-97-00503. Washington (DC), OIG. November 1997.

Office of Inspector General. Review of separately billable end stage renal disease laboratory tests, A-01-96-00513. Washington (DC), OIG. October 1996.

Owen WF Jr, Lew NL, Liu Y, et al. The urea reduction ratio and serum albumin concentration as predictors of mortality in patients undergoing hemodialysis, N Engl J Med. September 1993, Vol. 329, No. 14, p. 1001-1006.

Project Hope. The quality of life and economic implications of daily dialysis. Bethesda, MD: the Project HOPE Center for Health Affairs. August 1999.

Sankarasubbaiyan S, Holley JL An analysis of the increased demands placed on dialysis health care team members by functionally dependent hemodialysis patients, Am J Kidney Dis. June 2000, Vol. 35, No. 6, p.1061-7.

Securities and Exchange Commission: Fresenius Medical Care Holdings. Form 10-Q. Available at: http://www.sec.gov/Archives/edgar/data/42872/0000950135-99-005389.txt, 2000a.

Securities and Exchange Commission: Renex. Form 10-Q. Available at: http://www.sec.gov/Archives/edgar/data/911953/0000950144-99-012720.txt, 2000b.

Securities and Exchange Commission: Total Renal Care. Form 10-K/A. Available at: http://www.sec.gov/Archives/edgar/data/927066/0000898430-99-003846.txt, 2000c.

Ting, G, Freitas T, Carrie B, Zarghamee S. Short daily hemodialysis—global ESRD cost. Journal of the American Society of Nephrology 1998, Vol. 9, p. 240A.

United States Renal Data System. USRDS 2000 annual data report. Bethesda, MD: National Institute of Diabetes and Digestive and Kidney Diseases. June 2000.

United States Renal Data System. USRDS 1998 annual data report. Bethesda, MD: National Institute of Diabetes and Digestive and Kidney Diseases. April 1998.

Woods JD, Port FK, Orzol S, et al. Clinical and biochemical correlates of starting "daily" hemodialysis, Kidney Int. June 1999, Vol 55, No. 6, p. 2467-2476.