

Reimbursement for Hemodialysis

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In 1972 Congress initiated the End Stage Renal Disease (ESRD) program by authorizing Medicare to pay for dialysis, transplant, and related services for citizens (of any age) who would otherwise be eligible for Social Security benefits. This is the only program for which a diagnosis confers eligibility. This article will review the history of the Medicare ESRD financing, its evolution, and the revisions mandated by the Medicare Modernization Act (MMA) as it applies to the dialysis services.

Composite Rate

Originally, there were two methods of reimbursement for ESRD services. In 1983, responding to the Omnibus Budget Reconciliation Act (OBRA) of 1981 Congress instituted a single method called the Composite Rate (CR). This rate was based on cost reports submitted from 1977 to 1979. It established the base reimbursement for dialysis and related services including defined laboratory testing. Medicare would be responsible for 80% of this cost; the patient's insurance would pay the remaining 20%. The dialysis provider could charge separately for medications (ancillary services). The funds are derived from Part B Medicare (outpatient services).

Table 1 shows the composite rate definitions. The

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Composite Rate	Definition
Base	Established by Congress. It is the rate against which percentage increases (decreases) are applied. Contains a labor and non-labor component. Initially 40%, the labor factor is increased to 53.7% in 2006. The hospital rate is \$4 more than the independent facility rate.
Wage Adjusted	Results from applying an adjustment to the labor component of the base rate.
Drug Add on Factor	Percentage increase to the Wage Adjusted Composite Rate that compensates for the difference between revenue obtained from facilities being paid 95% of the average wholesale price of ancillary drugs (EPO, iron, etc.) and the reimbursement based on average sales price + 6%.
Budget Neutrality Adjustment	Only increases in the base composite rate can cause an increase in total Medicare spending for ESRD. All other adjustments must be budget neutral. Increases in one component will be matched by decreases in another component.
Case Mix Adjustment	An adjustment made to the Wage Adjusted CR with Drug Add on Factor composite rate for an individual patient based on demographics (age, body surface area, and body mass index) thought to capture the cost of providing care to that patient.

Table 1. Composite rate.

base composite rate was designed with two service locations (hospital or independent facility), and a geographically defined rural/urban wage index. The difference between hospital and independent facilities was set to \$4 and was justified by the apparent increased overhead (not case acuity) in the hospital setting. The hospital or independent rate was then adjusted for the rural/urban wage index for each metropolitan statistical area (MSA). The wage index is a blend of 1980 Bureau of Labor Statistics (60%), and 1986 CMS hospital wage index (40%). It was frozen by law in 1990. Furthermore, the actual range (0.7 to 1.7) was constrained to 0.9 and 1.3. Areas that have grown from rural (lower wage index) to urban (higher wage index) remain in the 1980s classifica-

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			Payer Mix	
			80% Medicare 15% Medicaid 05% Commercial	40% Medicare 00% Medicaid 60% Commercial
Payer	Charge	Rate		
Medicare	141.31	.08	.90.44	.45.22
Secondary	141.31	.02	.22.61	.11.30
Medicaid	128.35	.09	.17.33	.00.00
Commercial	1000.00	.06	.30.00	.360.00
Treatment Revenue			160.38	416.52
Allowance for Bad Debt (3%)			-4.81	-12.50
Net Treatment Revenue			155.57	404.02

Table 2. Effect of payer mix and net treatment revenue.

tion. The wage index was applied to 40% of the CR base, resulting in a wage adjusted CR. Updates of the CR are applied to the CR base before adjusting for wage index.

Unlike other Medicare funded health services (hospital DRGs, skilled nursing facilities, hospital outpatient services, home health, rehabilitation services, and psychiatric services) there are no “automatic” adjustments (based on inflation or market basket changes) to the base CR. The Medicare Payment Advisory Commission (MedPAC) recommends changes to Congress. MedPAC’s recommendations are not binding and Congress’ response is neither inevitable nor necessarily timely.

Each update of the CR base essentially requires an “act of Congress.” From 1983 to 2003, there have been 5 adjustments of the base CR (1986: -\$2; 1991: + \$1; 2000: +1.2%; 2001: +2.4%; 2004: +1.6%). There is a proposed +1.6% adjustment for 2006. When adjusted for inflation, the 2005 rate of \$128 compared to the 1974 rate of \$138 is less than \$37 in 1974 dollars.

Dialysis providers receive revenue from Medicare, and from non-Medicare insurers. The non-Medicare insurers include Medicaid and commercial insurers. Medicaid sets its own rate. Medicaid does not apply the drug add on factor nor the case mix adjustment. Medicaid may not pay more than the wage adjusted composite rate, but it may pay less. The commercial insurers pay a negotiated fee based on discounts from the provider’s usual charge. This charge is usually significantly above the Medicare wage adjusted CR. Some insurers negotiate a global fee that includes both the

composite rate and ancillary services. Ancillary services cover the costs of acquiring and administering the medications not included in the composite rate.

Revenue for dialysis and ancillary services, then, is a weighted average of the blend of the insurance plans of the patients served. This blend is called the “payer mix.” Table 2 illustrates the impact of payer mix on treatment revenue. The higher the percentage of commercial payers is, the higher the net treatment revenue.

Based on year 2000 cost reports from independent facilities, the wage adjusted CR covered only 88% of the cost of providing the bundle of services. Providers made up the difference by the delivery of ancillary services that were reimbursed at 132% of cost. The overall margin for the provision of services to Medicare beneficiaries was 1.4%. Economic survival depends on the income (revenue—expenses) generated by ancillary services (medication administration) and the payer mix.

Medicare Modernization Act and the Revision of the Composite Rate

Congress acted to revise the funding of dialysis. In 2000, the Benefits Improvement and Protection Act (BIPA, Sec 422 of PL 106-554) directed the Secretary to include (“bundle”) all of the lab test and drug costs into the CR as far as was feasible. The act further required the development of a “market basket” to allow for annual or periodic revision of the CR (including an updated labor index) and a method of “case mix adjustment” to adjust for treatment of higher cost patients. Finally, it rescinded any further granting of exceptions to the base CR

(pediatric facilities were eventually excluded from this prohibition) and required the ongoing monitoring of the quality of the provided services.

Preliminary studies on the development of a labor and non-labor index and case-mix adjustment are to be followed by a demonstration project on providing all services to ESRD patients under a global, capitated payment (100% bundle). These instructions are detailed in the Medicare Prescription Drug Improvement and Modernization Act of November 2003 (MMA). The MMA specifies that the Secretary of HHS will develop a “basic case-mix adjusted prospective payment system (PPS), for a limited number of patient characteristics and adjusted by a geographic index.”

The Center of Medicare and Medicaid Services (CMS) implemented these rules starting in January 2005 and continuing in January 2006. In 2005, CMS implemented the “Drug Add On” and Case Mix Adjustments to the base CR. In January 2006, CMS was to update the add-on and implement a new wage adjustment based on “core based statistical areas (CBSA)” rather than the current “Metropolitan Statistical Area (MSA)” system. CMS will continue to apply the case-mix adjustments as they were in 2005.

The current labor adjustment is based on 1980s data. The new adjustment is based on the CMS hospital index for core based statistical areas (rather than MSAs). The labor adjustment will be applied to 53% of the base CR. The transition will be spread over 4 years to mitigate the changes in some states where there will be dramatic reductions. The floor rate will stay at 0.9 for 2006 and will be withdrawn over the next 4 years.

Recognizing that providers made up the deficit of the inadequate CR by the margin on the administration of medications, Congress moved to shift the “profit” from medications to the CR. Congress hoped to make the decision to administer a medication to be based on medical not financial necessity.

Originally, Medicare reimbursed independent facilities for administered medications by paying 95% of the average wholesale price (AWP). Hospital facilities received “reasonable cost.” Pharmaceutical manufacturers determine the AWP. The AWP is ordinarily significantly higher than the cost of purchasing the medica-

Drug	ASP + 6%
Erythropoietin, 1000 units	9.25
Calcitriol, 1 µg	.86
Doxercalciferol, 1µg	2.78
Iron dextran, 50 mg	11.22
Iron Sucrose, 1 mg	.37
Levocarnitine, 1 gm	11.12
Paricalcitol, 1 µg	3.97
Sodium ferric gluconate, 12.5 mg	4.73
Alteplase, 1 mg	30.09
Vancomycin, 500 mg	3.19

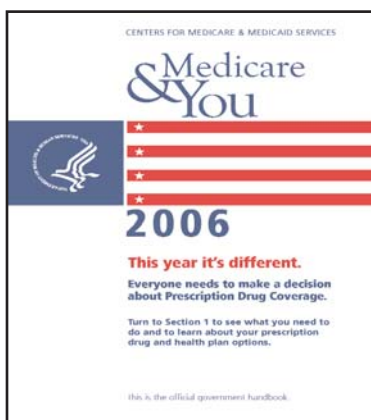
Table 3. ASP + 6% of ESRD ancillary medications, 2nd quarter of 2005 (CMS).

tions. Frequently, providers chose one medication over another based on the spread between the cost (including discounts) and 95% of AWP.

Medicare determined to pay the providers a price based on average acquisition price in 2005 (AAP) and on average sales price (ASP). In 2005, Medicare established a fixed price on erythropoietin and nine other drugs most common in ESRD (other medications were billed at ASP + 3%). In 2006, Medicare will pay ASP + 6% for all medications (Table 3). In both years, Medicare calculated the difference between what the facilities would have been paid by 95% of AWP and what they would be paid under the new rules.

In 2005, CMS estimated the difference to be \$585 million. That is, the change to ASP + 6% would cost the providers \$585 million. They divided this amount by 34.7 million dialysis treatments. This \$16.86 per treatment was 13.3% of the base CR. CMS increased this by 1.4% to arrive at a 14.7% “add-on” for 2006. The drug add-on factor is applied to the wage adjusted CR. This change is budget neutral since it moves the money from the ancillary drugs to the composite rate resulting in no net increase in Medicare spending.

While the hospital facilities are paid “reasonable cost” for their medications, Medicare nonetheless calculated the “add-on” to be divided among both hospital and inde-



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Age	Factor
<18*	1.620
18 to 44	1.223
45 to 59	1.055
60 to 69	1.000
70 to 79	1.094
Greater than or = to 80	1.174
*no BMI or BSA adjustment	

Table 4. Age case mix adjustments.

pendent providers. This decision resulted in the independent facilities “sharing” their “add-on” with the hospitals. In 2006, hospitals will be paid ASP + 6%, not “reasonable cost.” As of this writing, Medicare has not published the reimbursement rates for the ancillary medications. Table 3 shows the 2nd quarter 2005 ASP + 6% for the 10 most frequently prescribed ancillary medications.

CMS developed a case mix adjustment. The goal is to establish a CR that will increase or decrease based on the cost of providing care in a given market (labor and non-labor factors) to a given patient (based on characteristics of the patient). Only adjustments to the base CR can have an effect on the federal budget. Congress mandated that all other “adjustments” to the CR had to be budget neutral (meaning that the total cost to the system had to be the same whether or not the adjustment was made). The case mix adjuster results in different CR for different patients. The adjusters are based on age, body sur-

$$BMI = \frac{wt \text{ Kg}}{(ht \text{ m})^2} \text{ (normal = 20 to 25)}$$

If < 18.5 = 1.112

Figure 1. Body Mass Index (BMI) adjustment

$$BSA = Kg^{0.425} * Cm^{0.725} * 0.007184$$

$$BSA_{factor} = 1.037^{((bsa-1.84)/.1)}$$

Figure 2. Body Surface Area (BSA) adjustment.

face area, and body mass index. Table 4 and Figures 1 and 2 show the calculations for these adjustments. Patients under 18 years old have a single age adjuster exclusive of the other adjustments. These adjustments are made after the wage adjusted CR plus the drug add-on factor is corrected by the budget neutrality factor.

Calculating the Composite Rate

Table 5 shows the series of calculations necessary to arrive at the wage and case mix adjusted CR for one patient in an independent facility in Cleveland, Ohio. The current base CR is 128.25 (line 1). If Congress approves the 1.6% increase for 2006, it will be applied to the base CR increasing line 1 to 130.40. (Hospitals will get \$4 more, although there is a proposal to eliminate the difference). [Ed. Note: The 1.6% increase was approved

RATE	DOLLARS	COMMENT
1 2006 Base Composite Rate (.537 labor)	128.35	68.94 (labor) + 59.41 (non labor)
2 2006 Wage Adjusted (.963 x 68.94)	125.80	66.39 (labor) + 59.41 (non labor)
3 2005 Base Composite Rate (.40 labor)	128.35	51.34 (labor) + 77.01 (non labor)
4 2005 Wage Adjustment (1.193 x 51.34)	138.27	61.26 (labor) + 77.01 (non labor)
5 2006 Blended CR [(.75) 2005 + (.25) 2006]	135.15	(.75) 138.27 + (.25) 125.80
6 + 14.7% drug add-on factor	155.02	Based on quarterly CMS ASP +6%
7 x .9116 case mix budget neutrality factor	141.31	Base for case mix adjustment
8 x Age 75 years adjustment (1.094)	154.60	See Table 4
9 x BMI adjustment 26.1 kg/m2 (1)	154.60	Only adjustment if BMI < 18.5 (Figure 1)
10 x BSA adjustment for 1.917 m2 (1.0292)	159.10	1.037 ^ [(1.92 -1.84)/.1] (Figure 2)

Table 5. Calculation of Composite Rate for a 75-year old, 5'8", 78 kg patient in Cleveland, Ohio.

	Dose	Rate	Cost	Syringe	Total
EPO	6500 units	9.25/10 ³ units	\$60.13	.50	60.63
Sodium Ferric Gluconate	42 mg	4.74/12.5 mg	\$15.89	.50	16.39
Paricalcitol	4 µg	3.97/µg	\$15.88	.50	16.38
				Ancillary Revenue (Table 3)	93.40
				Treatment Revenue (Table 5)	159.10
				Total Revenue	252.50

Table 6. Total medicare revenue.

by Congress after this manuscript was submitted.]

The next step is to apply the labor adjustment to 53% of the base CR. In Cleveland, Ohio, the old labor factor was 1.193; the new factor will be 0.963. This change would result in a 23% reduction in the labor component of the base CR. In order to soften the effect of this abrupt change, CMS will phase in the new labor factor over 4 years.

In 2006, the wage adjusted CR will be .75 of the 2005 rate and .25 of the new rate. The 2006 wage adjusted rate is 125.80 (line 2). The 2005 rate was 138.27 (lines 3 and 4). The blended rate is 135.15 (line 5). Adding 14.7% for the drug add-on brings it to 155.02 (line 6). No adjustment can increase the total cost to Medicare. The drug add-on is already budget neutral, so a case mix budget neutrality factor of .9116 is used before applying case mix adjustment (line 7) bringing the CR to 141.31.

The next step is to calculate the case mix adjustment. In this example, assume a 75-year-old, 5-foot-8 (173 cm), 78 kg (BSA = 1.917 m², BMI = 26.2 kg/ m²) person. The age adds 9.4% (line 8). There is no adjustment for BMI's = 18.5 (line 9). The BSA adds 2.92% (line 10). So the total case mix adjustment is 12.6% (1.0292 x 1.094), or 1.126 * 141.31 (line 7) or 159.10 (line 10).

Using reasonable ancillary drug doses and case mix adjusted CR with drug add-on for the example in Table 5, it is possible to estimate total Medicare treatment revenue. Table 6 shows the calculations for this exercise. To calculate the total income, it is necessary to add the revenue from Medicaid and commercial insurance according to the payer mix and then to subtract the expenses. Since the ASP is a national average, any given facility or chain may pay more or less than that average as their actual acquisition price.

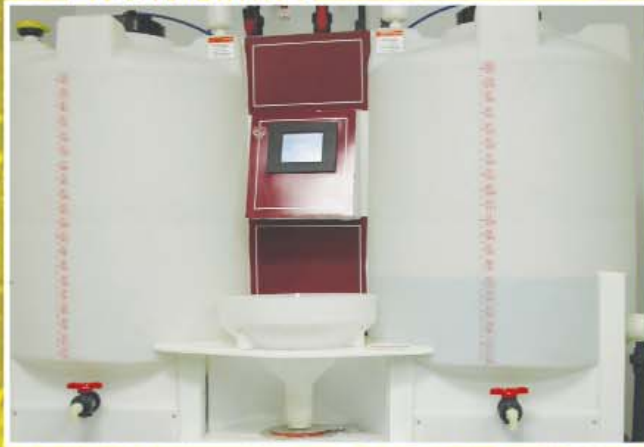
CMS monitors the quality of the care to ESRD

patients using the Clinical Performance Measures (CPM). To this point, CMS has only published these measures without taking any administrative action based on a facility's relative performance. In January 2006, physicians will be able to report their outcomes on 36 measures, including Kt/V, hemoglobin, and AV fistula placement. Dialysis facilities are already reporting hemoglobin and dialysis adequacy (URR) on the bills submitted to their fiscal intermediaries. There are proposals to withhold a percentage of facility and physician reimbursement. This hold back would create a national pool that could be redistributed according to performance against national standards for dialysis adequacy, hemoglobin management, and fistula placement. News about these proposals is usually published on the CMS ESRD website (<http://www.cms.hhs.gov/providers/esrd.asp>). ■

References

1. **Rettig RA, Levinsky NG (eds).** *Kidney Failure and the Federal Government.* National Academy Press. Washington, DC 1991.
2. **Wolfe, RA.** *Methodology for Developing a Basic Case Mix Adjustment for the Medicare ESRD Prospective Payment System.* Available at www.med.umich.edu/Kidney.
3. **43 CFR Part 405, et al.** Medicare Program; Revisions to Payment Policies Under the Physician Fee Schedule for Calendar-Year 2006; Proposed Rule (CMS-1502-P). August 8, 2005.
4. **Implementation Support for the Quality Incentive Payment of the ESRD Disease Management Demonstration, Implementation and Support for an Advisory Board for the ESRD Bundled Case-Mix Adjusted Demonstration, Mandated by Section 623(e) of the Medicare Modernization Act.** August 20, 2004.
5. **Thompson, TG.** Report to Congress: Toward a bundled outpatient Medicare End Stage Renal Disease Prospective Payment System. Department of Health and Human Services, 2003, Washington, DC.
6. **Medicare Payment Advisory Commission, June 2005.** Report to the Congress. Medicare Payment Policy. Chapter 4. Washington, DC: MedPAC.

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