

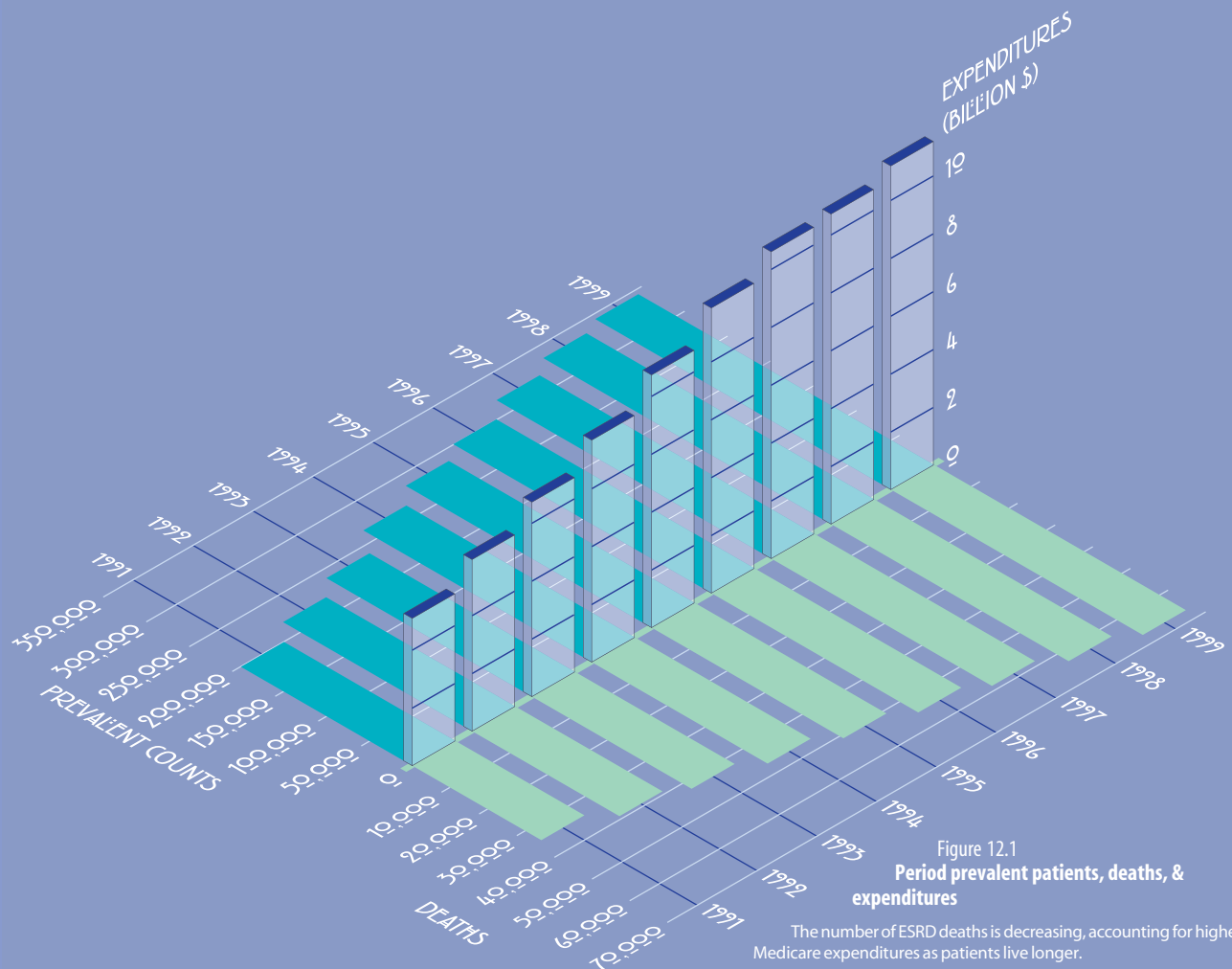


No physician, insofar as is he a physician, considers his own good in what he prescribes, but the good of his patient; for the true physician is also a ruler having the human body as a subject, and is not a mere moneymaker.

PLATO, *The Republic*



ECONOMIC COSTS
OF ESRD



As shown in the Précis (table p.1), the finances of the ESRD program continue to grow, particularly in the non-Medicare employer group health plans. The relationship between the growth in the prevalent population, the number of deaths, and the total Medicare expenditures is shown in Figure 12.1. Expenditures have continued to rise along with the number of prevalent patients. In 1999 the total prevalent ESRD population approached 350,000 patients, there were 68,000 deaths, and the total Medicare and non-Medicare expenditures were \$17.9 billion, of which Medicare contributed \$12.7 billion when Medicare risk patients and organ acquisition costs are included (table p.1).

On a per capita basis the economics of ESRD treatment have shown little change over the last five years. Part A expenditures for diabetic patients have been relatively steady for hemodialysis patients, are down slightly for peritoneal dialysis patients since 1997, and have decreased steadily since 1995 for transplant patients (fig 12.3). The pattern for NDM patients is similar, with the overall PMPM Part A expenditures down by 13%.

The components of the costs, however, have shown marked increases from 1995 to 1999 (fig 12.2 and table 12.3). Medicare costs for EPO almost doubled over the five-year period, with IV iron costs up 65%, and costs for both calcitriol and other

injectables tripled. Increases in EPO expenditures have been associated with improvements in hematocrit levels, and are consistent with the National Kidney Foundation's DOQI target hematocrit of $\geq 33\%$.

The DOQI guidelines also recommend an increase in the use of iron. PMPM costs for EPO and IV iron show a variation across the country of 51% from the lowest to the highest quintiles (fig 12.5). There is a marked variation from eastern to the western portions of the U.S., which may be consistent with the geographic differences in races. As noted in Chapter Four, hematocrit levels are lowest in the southeastern states, the same areas that have high expenditures on EPO and iron.

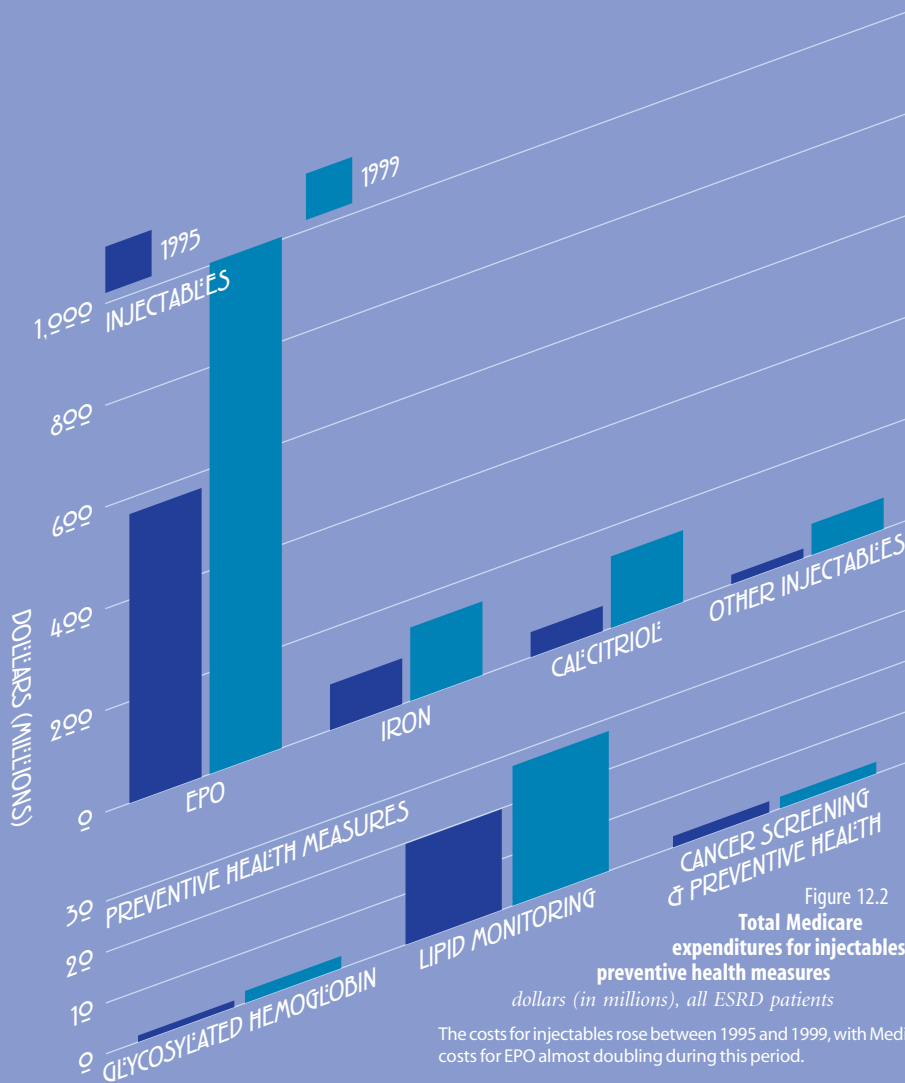


Figure 12.2
Total Medicare expenditures for injectables & preventive health measures
dollars (in millions), all ESRD patients

The costs for injectables rose between 1995 and 1999, with Medicare costs for EPO almost doubling during this period.

The mean PMPM cost of calcitriol and other intravenous medications is \$93 (fig 12.6). From the lowest to highest quintiles, however, spending varies by 144%. The lower utilization rates in the mid-southeast may reflect high rates of diabetes. Since calcitriol is used to suppress PTH, these low rates may reflect the low bone turnover and low PTH levels noted in diabetics (Pei 1995).

This year the Coordinating Center evaluated the total number of patients in the Medicare risk program who were registered as ESRD patients (table 12.5). In 1999 there was

a total of 29,997 period prevalent ESRD patients in the Medicare risk program—7.2% of all patients. States with the largest percentage of this population were California, Florida, New York, Pennsylvania, and Texas, accounting for 63.5% of all Medicare risk ESRD patients. Any evaluation of the ESRD population that compares Medicare risk patients to fee-for-service patients must consider this marked geographic distribution. In the future the economic section of the ADR will compare services received by these risk HMO patients before and after they enroll in the Medicare risk program.

Medicare expenditures associated with hematocrit and URR are compared in Figures 12.10–14. Both hemodialysis and peritoneal dialysis patients have stepwise associations between hematocrit levels and costs, with a similar relationship noted for URR. In 1999 adjusted relative costs varied by 30% between the lowest and highest hematocrit levels, and by 13% between the lowest and highest levels of URR. More complete economic models will be used in the 2002 ADR to assess expenditures over a longer period and determine the predictive value of these clinical indicators of care on costs.

INCLUDED IN THIS CHAPTER ♦ Tables of Medicare Part A and Part B payments by age group and diabetic status, of total expenditures for injectables and preventive health measures, of the distribution of Medicare risk patients by state, of Medicare ESRD inpatient utilization by diagnosis, and of Medicare ESRD program expenditures ♦ Maps of PMPM costs for EPO and iron, and for calcitriol and other injectables ♦ Graphs of PMPM costs by diabetic status and patient vintage ♦ Graphs of PMPM costs by hematocrit group and URR

Figure 12.3
Part A Medicare payments, by diabetic status & modality

dollars per year at risk, period prevalent ESRD patients

As-treated analysis; excludes patients with Medicare as secondary payor during the period. The costs in 1995 and the percent change from 1995 to 1999 are shown next to the lines.

The most dramatic change in Part A spending between 1995 and 1999 occurred in transplant patients: a decrease of 19% for diabetics and 18% for non-diabetics. Peritoneal costs were relatively stable, while costs for hemodialysis increased 5.1% for diabetics and 7.2% for non-diabetics.

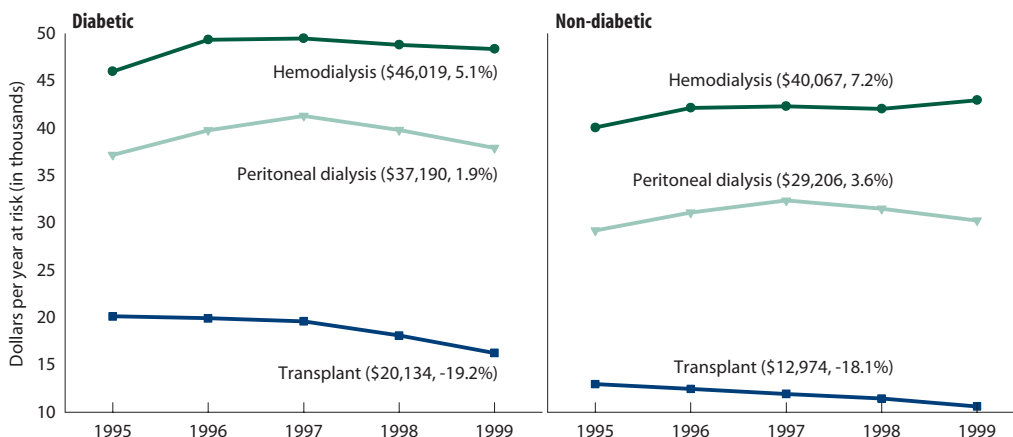


Table 12.1
Part A Medicare payments, by age

dollars per year at risk, period prevalent ESRD patients

As-treated analysis; excludes patients with Medicare as secondary payor during the period.

Reference: derived from Tables K.4 and K.10.

Year	Age	Hemodialysis Payment (\$)				Peritoneal dialysis Payment (\$)				Transplant Payment (\$)			
		DM	NDM	DM	NDM	DM	NDM	DM	NDM	DM	NDM	DM	NDM
1995	All	46,019	40,067	39,281	68,916	37,190	29,206	5,951	12,271	20,134	12,974	8,702	25,342
	0-19	51,374	44,886	6	436	*	32,170	*	322	*	14,809	*	1,364
	20-44	47,518	37,427	3,944	14,248	35,789	26,766	1,318	3,522	19,703	12,509	4,483	10,770
	45-64	44,903	38,440	15,903	20,667	36,821	28,829	2,665	4,078	20,076	12,938	3,745	10,477
	65-74	46,321	41,689	14,212	18,472	38,806	30,723	1,603	2,932	24,797	14,172	459	2,581
	75+	47,456	42,664	5,216	15,094	37,801	32,547	365	1,417	25,454	11,563	10	151
1996	All	49,341	42,135	43,401	71,362	39,793	31,081	5,762	11,473	19,927	12,466	9,049	26,524
	0-19	58,646	41,624	8	428	*	33,398	*	294	*	13,283	*	1,347
	20-44	50,283	38,944	4,060	14,497	36,849	28,429	1,165	3,332	19,058	11,789	4,458	11,074
	45-64	47,995	40,582	16,987	20,867	40,747	30,888	2,524	3,664	20,421	12,584	4,025	10,966
	65-74	49,870	43,635	15,989	18,915	40,199	32,169	1,670	2,749	23,130	14,128	541	2,922
	75+	50,995	45,170	6,357	16,655	40,647	35,173	402	1,434	18,053	13,602	18	216
1997	All	49,489	42,324	47,076	72,367	41,307	32,363	5,355	10,169	19,598	11,937	9,406	27,628
	0-19	41,362	39,786	7	404	*	31,696	*	264	*	13,845	*	1,332
	20-44	49,386	38,755	4,113	14,758	38,598	29,006	1,003	2,976	18,208	11,174	4,403	11,384
	45-64	48,128	40,778	18,270	21,044	40,859	32,055	2,303	3,188	20,482	11,943	4,324	11,386
	65-74	50,052	44,071	17,187	18,648	43,677	34,825	1,599	2,377	22,651	13,776	650	3,230
	75+	51,579	45,389	7,498	17,514	41,220	36,245	450	1,364	31,801	12,379	25	296
1998	All	48,815	42,044	51,386	74,378	39,800	31,496	4,826	8,836	18,106	11,447	9,776	28,879
	0-19	*	40,084	*	395	*	34,249	*	216	*	12,489	*	1,334
	20-44	48,163	38,670	4,179	14,805	36,420	28,164	897	2,567	16,767	10,391	4,339	11,686
	45-64	47,944	40,500	19,518	21,221	40,333	31,422	2,011	2,716	18,729	11,379	4,616	11,919
	65-74	49,266	43,873	18,819	18,923	41,033	33,638	1,465	2,063	21,302	14,500	783	3,571
	75+	50,067	44,614	8,866	19,033	40,163	34,430	452	1,274	27,219	13,803	36	368
1999	All	48,370	42,944	55,343	76,379	37,911	30,255	4,400	7,833	16,260	10,624	10,080	29,881
	0-19	*	41,307	*	360	*	32,000	*	192	*	12,441	*	1,334
	20-44	49,356	39,865	4,317	14,807	36,122	27,834	763	2,260	15,281	9,966	4,278	11,929
	45-64	47,948	42,034	20,763	21,681	37,941	30,179	1,811	2,381	16,481	10,165	4,842	12,323
	65-74	48,186	44,288	19,992	18,903	38,547	31,326	1,383	1,864	19,380	13,047	914	3,822
	75+	49,156	44,910	10,268	20,627	38,914	33,184	441	1,136	21,760	14,472	45	474

* Insufficient data

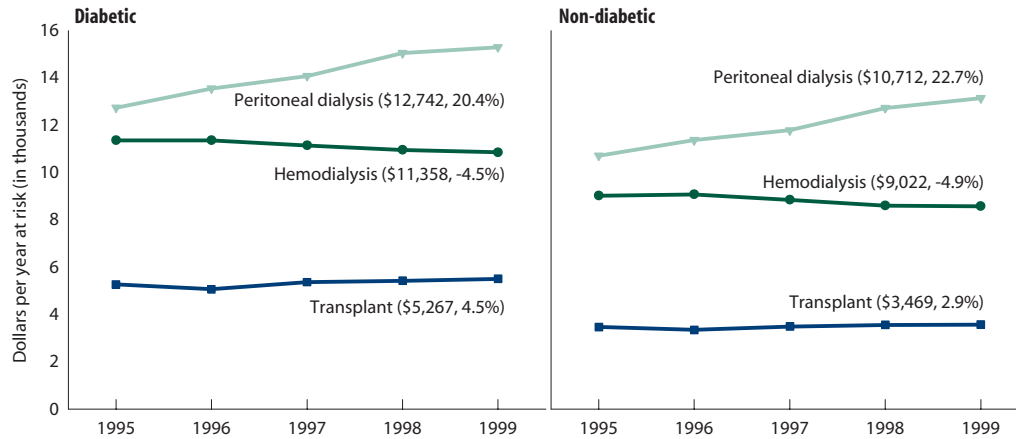


Figure 12.4
Part B Medicare payments, by diabetic status & modality
dollars per year at risk, period prevalent ESRD patients

As-treated analysis; excludes patients with Medicare as secondary payor during the period. The costs in 1995 and the percent change from 1995 to 1999 are shown next to the lines.

Part B expenditures for diabetic hemodialysis decreased 4.5% from 1995 to 1999, or 0.9% per year, while expenditures for diabetic patients on peritoneal dialysis increased 20% over the same period—4% annually. For non-diabetic patients, the change was -4.9% for hemodialysis (-0.9% annually), 22.7% for peritoneal dialysis (4.5%), and 2.9% for transplant (0.6%).

Year	Age	Hemodialysis				Peritoneal dialysis				Transplant			
		Payment (\$)		Years at risk		Payment (\$)		Years at risk		Payment (\$)		Years at risk	
		DM	NDM	DM	NDM	DM	NDM	DM	NDM	DM	NDM	DM	NDM
1995	All	11,358	9,022	39,281	68,916	12,742	10,712	5,951	12,271	5,267	3,469	8,702	25,342
	0-19	7,139	7,956	6	436	*	11,118	*	322	*	3,106	*	1,364
	20-44	11,046	7,330	3,944	14,248	12,963	9,919	1,318	3,522	5,163	3,299	4,483	10,770
	45-64	10,662	8,265	15,903	20,667	12,489	10,957	2,665	4,078	5,293	3,496	3,745	10,477
	65-74	11,734	9,934	14,212	18,472	13,017	11,200	1,603	2,932	6,095	4,256	459	2,581
	75+	12,699	10,571	5,216	15,094	12,588	10,879	365	1,417	6,275	3,640	10	151
1996	All	11,363	9,078	43,401	71,362	13,550	11,370	5,762	11,473	5,070	3,343	9,049	26,524
	0-19	12,578	7,415	8	428	*	11,392	*	294	*	2,818	*	1,347
	20-44	11,032	7,412	4,060	14,497	13,359	10,644	1,165	3,332	4,919	3,154	4,458	11,074
	45-64	10,773	8,375	16,987	20,867	13,604	11,351	2,524	3,664	5,139	3,389	4,025	10,966
	65-74	11,680	9,805	15,989	18,915	13,570	12,028	1,670	2,749	5,735	4,084	541	2,922
	75+	12,352	10,625	6,357	16,655	13,697	11,840	402	1,434	6,146	3,931	18	216
1997	All	11,140	8,839	47,076	72,367	14,082	11,789	5,355	10,169	5,370	3,490	9,406	27,628
	0-19	6,978	7,238	7	404	*	11,513	*	264	*	2,840	*	1,332
	20-44	10,850	7,115	4,113	14,758	14,111	11,122	1,003	2,976	5,140	3,347	4,403	11,384
	45-64	10,560	8,138	18,270	21,044	13,971	11,628	2,303	3,188	5,530	3,485	4,324	11,386
	65-74	11,384	9,549	17,187	18,648	14,385	12,450	1,599	2,377	5,809	4,254	650	3,230
	75+	12,158	10,415	7,498	17,514	13,512	12,519	450	1,364	6,801	3,724	25	296
1998	All	10,955	8,594	51,386	74,378	15,045	12,724	4,826	8,836	5,426	3,557	9,776	28,879
	0-19	*	6,648	*	395	*	12,709	*	216	*	2,848	*	1,334
	20-44	10,491	6,960	4,179	14,805	14,420	12,066	897	2,567	5,104	3,370	4,339	11,686
	45-64	10,472	7,848	19,518	21,221	15,077	12,494	2,011	2,716	5,549	3,529	4,616	11,919
	65-74	11,251	9,409	18,819	18,923	15,446	13,278	1,465	2,063	6,408	4,450	783	3,571
	75+	11,609	9,925	8,866	19,033	14,844	13,647	452	1,274	6,618	4,349	36	368
1999	All	10,850	8,576	55,343	76,379	15,296	13,139	4,400	7,833	5,504	3,571	10,080	29,881
	0-19	*	6,739	*	360	*	12,023	*	192	*	2,713	*	1,334
	20-44	10,308	6,986	4,317	14,807	14,579	12,283	763	2,260	5,181	3,435	4,278	11,929
	45-64	10,513	7,973	20,763	21,681	15,185	12,993	1,811	2,381	5,610	3,483	4,842	12,323
	65-74	11,047	9,344	19,992	18,903	15,754	14,007	1,383	1,864	6,417	4,460	914	3,822
	75+	11,373	9,680	10,268	20,627	15,556	13,917	441	1,136	6,244	4,494	45	474

* Insufficient data

Table 12.2
Part B Medicare payments, by age
dollars per year at risk, period prevalent ESRD patients

As-treated analysis; excludes patients with Medicare as secondary payor during the period.

Reference: derived from Tables K.4 and K.10.

The increase in Part B expenditures in peritoneal dialysis patients may reflect the increased use of Method II payments for patients treated with automated PD delivery systems, which require more dialysate. These areas will be investigated in the economics section of the 2002 ADR.

