

# Health Care Financing Trends

## Medicare end stage renal disease population, 1982-87

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*A synopsis is given between the relationship of the number of end stage renal disease (ESRD) patients to the total Medicare population and their associated expenditures. The aging trend within the ESRD population is examined in terms of enrollment statistics and incidence (new cases) counts. Also, longitudinal trends in expenditures, program enrollment, and incidence of ESRD are included. Findings indicate that the ESRD population is growing at a faster rate than Medicare in general. Further, within ESRD, the beneficiary population is aging.*

### Background

With the enactment of Section 2991 of the Social Security Amendments of 1972 (Public Law 92-603), full Medicare coverage was extended to persons with end stage renal disease (ESRD), effective July 1, 1973. To be eligible for Medicare ESRD benefits, the patient must first be currently or fully insured, be eligible for Social Security benefits, or be the spouse or a dependent child of such a person. Additionally, a physician must certify that the individual requires chronic dialysis or a kidney transplant to maintain life. The Medicare program pays a prospectively determined amount for kidney transplants and for certain drug treatments. For example, immunosuppressive drugs prescribed for transplant recipients are covered by Medicare for 1 year following discharge from the transplant hospitalization. The drug, epoietin, used to combat anemia in dialysis patients, was added to Medicare coverage effective June 1, 1989. Dialysis services are paid on a composite rate schedule.

Integral to the effective management of the ESRD program is the operation of a comprehensive data base covering medical and demographic information for the Medicare ESRD population. This data base, along with other ESRD program-related data, is a part of a larger computer system—the ESRD Program Management and Medical Information System. This system served as the principal source for the data used in this article.

In this article, trends for the Medicare ESRD population are examined by comparing:

- ESRD enrollment with the total Medicare enrollment (i.e., the count of people enrolled for coverage at a certain point in time).
- The expenditures for ESRD beneficiaries with the expenditures for all of Medicare.

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- Rates of growth for enrollment in ESRD by age groups and for the incidence (new cases) of ESRD by age groups. (These comparisons are made to provide evidence of the aging of the ESRD population.)

### Population growth rates

The comparison of ESRD to the total Medicare program in terms of numbers of beneficiaries enrolled and expenditures is shown in Table 1. This table shows that the ESRD population is growing at a much faster rate than the Medicare population in general. The differential in rates, however, is decreasing. ESRD enrollment increased from 76,412 in 1982 to 124,197 in 1987, an average annual increase of 10.2 percent. For the same period, total Medicare enrollment increased from 29,494,219 to 32,411,204, an average annual increase of only 1.9 percent. From 1985 through 1987, the annual growth rates for all Medicare beneficiaries were consistently 2.1 percent. However, the annual growth rates for the ESRD beneficiaries consistently decreased from 13.1 percent in 1983 to 8.7 percent in 1987.

(A summary of these rates of increase, by year, is shown in Table 4.) In Figure 1, the annual rates of growth of the total Medicare population and the ESRD population for the years 1983 through 1987 reflect the decreasing differential in annual rate of growth. Even though the annual rate of growth for ESRD enrollment decreased during this period, ESRD beneficiaries continued to increase as a percent of the total Medicare population. In Table 1, it can be seen that, in 1982, ESRD represented 0.26 percent of the overall Medicare population. By 1987, the ESRD population had increased to 0.38 percent of the total.

Expenditures for the ESRD population are disproportionately high when compared with the relationship between the total number of ESRD beneficiaries and the total number of Medicare beneficiaries (Table 1). In 1984, \$2,332.6 million, or 4 percent, of the \$58,354.2 million total expenditures for Medicare were used for ESRD beneficiaries. In this same year, the 95,526 ESRD beneficiaries represented only 0.31 percent of the total of 30,455,971 Medicare beneficiaries. This proportion peaked in 1986 when the ESRD expenditures of \$3,047.6 million represented 4.44 percent of the \$68,582.5 million total Medicare expenditures. However, the 114,306 ESRD enrollees were only 0.36 percent of the total of 31,749,708 Medicare beneficiaries. By 1987, the ESRD expenditures of \$3,315.4 were 4.39 percent of the \$75,442.1 million total Medicare expenditures, while 124,197 ESRD enrollees represented only 0.38 percent of the total of 32,411,204 Medicare beneficiaries. The average annual rate of increase for expenditures for the ESRD population, from 1983 to 1987, was better than 3 percentage points higher than that for Medicare in general (12.4 percent and 8.9 percent, respectively).

**Table 1**  
**Comparison of total Medicare to end stage renal disease enrollees by enrollment and expenditures: 1982-87**

Category	1982	1983	1984	1985	1986	1987	Average annual percent change
<b>Enrollment</b>							
	Number of enrollees						
Medicare total <sup>1</sup>	29,494,219	30,026,082	30,455,971	31,082,801	31,749,708	32,411,204	1.9
ESRD <sup>2</sup>	76,412	86,422	95,526	104,760	114,306	124,197	10.2
	Percent						
ESRD as proportion of Medicare total	0.26	0.29	0.31	0.34	0.36	0.38	—
<b>Expenditures</b>							
	Amount in millions						
Medicare total <sup>3</sup>	—	—	\$58,354.2	\$63,693.9	\$68,582.5	\$75,442.1	8.9
ESRD <sup>5</sup>	—	—	2,332.6	2,628.7	3,047.6	3,315.4	12.4
	Percent						
ESRD as proportion of Medicare total	—	—	4.00	4.13	4.44	4.39	—

<sup>1</sup>Counts are as of July 1 of each year.

<sup>2</sup>Counts are as of December 31 of each year.

<sup>3</sup>Data are grouped by the period the expense was incurred and are based on program payments reported on bills submitted to central office records. Included are prorated shares of estimated pass-through costs under Medicare's prospective payment system. Excluded are capitated payments to group health organizations and retroactive and interim adjustments.

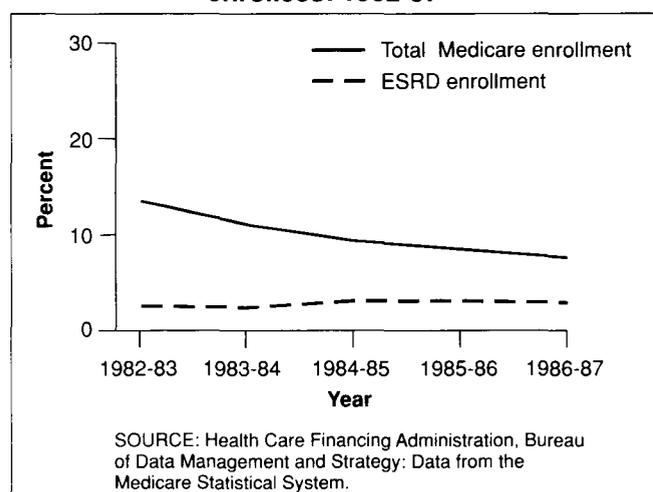
<sup>4</sup>Estimated.

<sup>5</sup>Amounts are as of December 31 of each year.

NOTE: ESRD is end stage renal disease.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

**Figure 1**  
**Comparison of annual rate of growth for total Medicare and end stage renal disease (ESRD) enrollees: 1982-87**



## Aging population enrollment

The enrollment data discussed in this section reflect counts of all beneficiaries who were enrolled for coverage under the ESRD program on December 31 of each year. Table 2 contains data on ESRD beneficiaries by whether they were on dialysis treatment or whether they had a functioning transplanted kidney and by age.

In 1982, there were 76,412 ESRD beneficiaries enrolled in the Medicare program. By 1987, this number had increased to 124,197, a 63-percent increase.

However, the growth rate for enrollment, which was 13.1 percent between 1982 and 1983, had decreased to 8.7 percent between 1986 and 1987 (Table 4).

From 1982 to 1983, the total number of ESRD dialysis patients increased from 65,597 to 73,438, an annual rate of increase of 11.9 percent. However, for those 65 years of age or over, the rate of increase was 1.9 times larger at 22.3 percent (18,155 in 1982 to 22,201 in 1983). From 1986 (90,841 enrollees) to 1987 (97,111 enrollees), the annual rate of increase for all dialysis patients had declined to 6.9 percent. For those 65 years of age or over (31,558 in 1986 and 34,911 in 1987), the rate also declined, but at 10.6 percent, it was still 1.5 times larger than the overall rate. The average annual rate of increase from 1982 to 1987 was 8.2 percent for all dialysis patients, but it was 14.0 percent for those 65 years of age or over (Table 4). In Figure 2, the rates of increase in enrollment for all dialysis patients are compared to the rates of increase in enrollment for those 65 years of age during the period from 1982-87.

The average annual rate of increase for this same period, 1982 to 1987, for functioning kidney transplants was 20.2 percent. The rate for transplants for those 65 years of age or over was more than double that rate at 45.0 percent (Table 4).

The number of enrollees in Table 2 shows that, in terms of the total dialysis beneficiaries, the group 65 years of age or over increased from 18,155 in 1982 (27.7 percent of the 65,597 total ESRD dialysis population) to 34,911 in 1987 (35.9 percent of the 97,111 total). The number of beneficiaries with functioning kidney transplants who were 65 years of age or over increased from 114 (1.1 percent of the 10,815 total ESRD transplant population) in 1982, to 731 (2.7 percent of the 27,086 total) in 1987.

**Table 2**  
**Medicare end stage renal disease program enrollment, by category and age: 1982-87**

Category and age	1982	1983	1984	1985	1986	1987
	Number of enrollees					
Total	76,412	86,422	95,526	104,760	114,360	124,197
Dialysis patients	65,597	73,438	79,629	85,472	90,841	97,111
Under 15 years	606	685	694	669	685	696
15-24 years	2,738	2,742	2,812	2,797	2,712	2,794
25-34 years	6,866	7,227	7,491	7,753	7,972	8,157
35-44 years	8,565	9,617	10,299	10,993	11,682	12,421
45-54 years	11,827	12,591	13,379	13,935	14,404	15,095
55-64 years	16,840	18,375	19,756	21,031	21,828	23,037
65-74 years	13,633	16,162	18,024	19,859	21,868	23,761
75 years or over	4,522	6,039	7,174	8,435	9,690	11,150
Transplant patients	10,815	12,984	15,897	19,288	23,465	27,086
Under 15 years	370	438	534	652	733	801
15-24 years	1,481	1,679	1,843	2,079	2,336	2,438
25-34 years	3,214	3,804	4,555	5,218	6,097	6,580
35-44 years	2,770	3,385	4,262	5,346	6,569	7,599
45-54 years	1,995	2,406	2,979	3,702	4,613	5,621
55-64 years	871	1,122	1,515	1,972	2,637	3,316
65-74 years	111	147	202	306	460	699
75 years or over	3	3	7	13	20	32

NOTE: Enrollment counts are taken as of December 31 each year and include Medicare beneficiaries who are alive and entitled at that time.  
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

**Table 3**  
**Medicare end stage renal disease program incidence, by age: 1982-87**

Age	1982	1983	1984	1985	1986	1987
	Number of new enrollees					
Total	21,876	25,071	26,453	29,290	31,328	33,749
Under 15 years	415	381	432	415	422	424
15-24 years	1,160	1,100	1,156	1,190	1,178	1,257
25-34 years	2,455	2,460	2,621	2,707	2,960	2,803
35-44 years	2,606	2,832	3,010	3,374	3,639	3,927
45-54 years	3,530	3,739	3,869	4,217	4,408	4,811
55-64 years	5,286	5,762	6,265	6,889	7,073	7,683
65-74 years	4,608	6,026	6,136	6,990	7,591	8,308
75 years or over	1,816	2,771	2,964	3,508	4,057	4,536

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

## Aging population in incidence

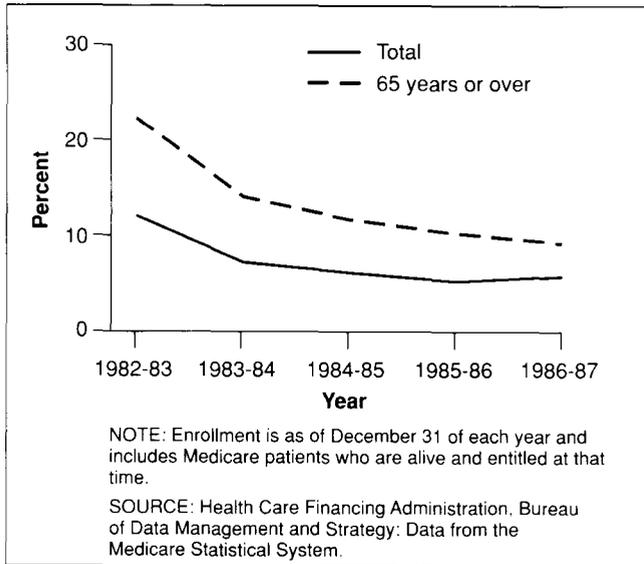
The total counts of ESRD incidence (newly enrolled Medicare ESRD beneficiaries) by age are shown in Table 3. The trend in Medicare ESRD incidence supports that which was found in ESRD enrollment; that is, the ESRD population is aging. In 1982, 21,876 persons were added to the Medicare enrollment files as ESRD beneficiaries. By 1987, the annual number of new ESRD beneficiaries had increased to 33,749, representing an average annual rate of increase over the 6-year period of 9.1 percent. However, there were 6,424 beneficiaries 65 years of age or over added in 1982 and 12,844 added in 1987, which represented an average annual rate of increase of 14.9 percent. (A summary of the rates of increase in incidence of ESRD, along with those of enrollment, are included in Table 4, for comparison.)

From 1986 to 1987, the number of newly enrolled ESRD beneficiaries increased by only 7.7 percent, from 31,328 in 1986 to 33,749 in 1987. This annual rate of increase indicates a slowing of overall growth in new

cases of ESRD, when compared with the average annual rate of increase of 9.1 percent from 1982 to 1987. The annual rate of growth for new cases of ESRD among older persons has also slowed, but for the last 3 years shown, it has consistently exceeded the average annual rate of growth of ESRD overall. From 1984 to 1985, the annual rate of growth in incidence for all ages was 10.7 percent (26,453 to 29,290, respectively); for those 65 years of age or over, it was 15.4 percent (9,100 to 10,498, respectively). From 1985 to 1986, the annual rate of growth in incidence was 7.0 percent (29,290 to 31,328, respectively); for those 65 years of age or over it was 11.0 percent (10,498 to 11,648, respectively). From 1986 to 1987, the annual rate of growth in incidence was 7.7 percent (31,328 to 33,749, respectively); for those 65 years of age or over, it was 10.3 percent (11,648 to 12,844, respectively).

A final indicator of the aging of the ESRD population is also found in incidence rates. In 1982, there were 6,424 ESRD beneficiaries in the group 65 years of age or over, which represented 29.4 percent of the total incidence of 21,876 for that year. By 1987, the 12,844

**Figure 2**  
**Enrollment rates of increase for dialysis patients: 1982-87**



new ESRD cases in the 65 years of age or over group represented 38.1 percent of the total incidence.

## Conclusion

It has been shown that the ESRD population is growing at a much faster rate than the general Medicare population. Also, it has been shown that the ESRD beneficiaries consistently use a disproportionately higher share of Medicare funds compared with their representation in the total Medicare population. The ESRD statistics also reflect a clear trend in the aging of the ESRD population. The reasons for why this may be happening were not examined, but it has been clearly shown that the group 65 years of age or over continues to represent a larger portion of ESRD enrollment and of ESRD incidence, over time.

**Table 4**  
**Rates of increase for enrollment and incidence: 1982-87**

Enrollment and incidence	1982	1983	1984	1985	1986	1987	Average annual rate of increase
<b>Total enrollment</b>							
All Medicare enrollment	—	1.8	1.4	2.1	2.1	2.1	1.9
ESRD enrollment	—	13.1	10.5	9.7	9.1	8.7	10.2
<b>Dialysis enrollment</b>							
All age groups	—	11.9	8.4	7.4	6.3	6.9	8.2
65 years or over	—	22.3	13.5	12.3	11.5	10.6	14.0
<b>Transplant enrollment</b>							
All age groups	—	20.1	22.4	21.3	21.7	15.4	20.2
65 years or over	—	31.6	39.3	52.6	50.5	52.3	45.0
<b>ESRD incidence</b>							
All age groups	—	14.6	5.5	10.7	7.0	7.7	9.1
65 years or over	—	36.9	3.4	15.4	11.0	10.3	14.9

NOTES: Average annual rate of increase calculated by compounding raw data from 1982 to 1987. ESRD is end stage renal disease.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.