

# Nursing home costs for those dually entitled to Medicare and Medicaid

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*The focus of this article is the impact of nursing home care on total Medicare and Medicaid expenditures for the aged population entitled to both programs. To determine these costs for 1981, data in the Health Care Financing Administration's Medicare Statistical System were linked, for the first time, to data in the Medicaid system for four States. Also examined are expenditure patterns for survivors and*

*decedents using nursing home services. Results indicate that the two most significant factors influencing costs for the dually entitled elderly are the use of nursing home services and the costs of care in the last months of life. An unexpected finding was that of the 73 percent who neither died nor were in a nursing home, per capita expenditures were remarkably constant across all age groups.*

## Introduction

### Background

As we near the final decade of this century and consider the prospects for the 21st century, many questions arise about the potential impact of the aging of our population. Persons 85 years of age or over are increasing faster than any other age group in our population. Because older aged persons are more at-risk of needing nursing home services, and because these services are expensive, questions are being raised about the future economic burden of financing the cost of nursing home care. Funding these services for the poor elderly is an issue of considerable importance (Ray et al., 1987).

Presently, more than 3.5 million persons age 65 years or over—about 12 percent of the total aged population—are covered by both the Medicare and Medicaid programs. Of the 30 million aged persons, these 3.5 million persons are among the aged with the lowest income and assets. Dual eligibles are of particular interest because they are known to be in poorer health than other beneficiaries (McMillan and Gornick, 1984). Medicaid payments for the aged are a major part of total Medicaid outlays. In 1984, aged persons constituted 14 percent of all Medicaid recipients and accounted for 37 percent of all Medicaid payments. A large proportion of these Medicaid payments are for nursing home services for the aged, many of whom become eligible for Medicaid because of the high costs of nursing home care. Dually entitled persons also account for higher than average Medicare payments (McMillan et al., 1983; McMillan and Gornick, 1984).

This article provides an analysis of the costs of services for the aged entitled to both programs (persons alternatively described as dual eligibles or "crossovers"). It focuses especially on the impact of nursing home care on per capita costs. The article relies on a data base created by linking Medicare utilization data with data from the Medicaid Management Information System in four States.

### Previous studies

Various aspects of the population dually entitled to Medicare and Medicaid have been analyzed and reported on since 1973. Two studies, based on Medicare administrative data, found that the crossover population had higher than average use of physician and ambulatory services and higher charges for these services than other Medicare enrollees (Piro, 1973; Peel and Scharff, 1973). A later study using data from the 1976 Health Interview Survey maintained by the National Center for Health Statistics, focused on supplementary coverage to Medicare, that is, the presence of private supplementary insurance or Medicaid (Link, Long, and Settle, 1980). That study found that additional coverage, whether private or public, was associated with increased utilization. Their findings suggest that some of the differences in utilization between crossovers and other aged Medicare beneficiaries are the result of the more comprehensive coverage provided by Medicaid.

A more recent study used 1978 data from the Medicare Statistical System (MSS) and found that the crossover population differed substantially by age, sex, and race from other Medicare enrollees (McMillan et al., 1983). Compared with the general Medicare population, crossovers were considerably older and consisted of substantially more females and minorities.

For Medicare beneficiaries, the probability of being enrolled in Medicaid increases sharply with age. Among white persons in the age group 65-69 years, 5 percent were covered by both programs, whereas in the age group 85 years or over, 19 percent were dually covered. For minority persons 65-69 years of age, 23 percent were covered by both programs, and of those 85 years of age or over, 51 percent were covered by Medicare and Medicaid. Average reimbursements per enrollee for crossovers of all ages were higher than for other Medicare enrollees. Mortality data indicated that the crossovers were in poorer health than others their age. The death rate for crossovers (standardized for age) was 1.5 times that for other Medicare enrollees.

A number of issues could not be addressed in that study because of limitations in the MSS. Utilization data are limited to only those services covered under Medicare. Moreover, the MSS contains only a few demographic variables, such as age, sex, and race. No information is available on education, income, or health status. In addition, because institutionalized persons cannot be separated out, it could not be determined if the higher medical care use and mortality rates found among crossovers were primarily reflecting the characteristics of the institutionalized population.

To address some of these issues, data from the National Medical Care Utilization and Expenditure Survey (NMCUES) of 1980 (National Center for Health Statistics and Health Care Financing Administration, 1980) were used to focus on the noninstitutionalized crossovers (McMillan and Gornick, 1984). The survey findings indicated that aged crossovers living in the community were in poorer health than other noninstitutionalized aged Medicare persons, as measured by the proportion who perceived their health as fair or poor (56 percent versus 35 percent) and the proportion with moderate to severe functional limitations (53 percent versus 27 percent). In addition, this subset of the aged population had a much lower educational attainment than other Medicare enrollees (63 percent with less than 9 years of education versus 39 percent), and (as expected) had much larger proportions in low family income categories (74 percent with less than \$10,000 versus 42 percent). Neither NMCUES nor any of the other data sets used in the studies cited earlier contained information on both the institutionalized and noninstitutionalized nor information on expenditures by both Medicare and Medicaid crossovers.

## Methods and data

To obtain a better understanding of the costs of care for crossovers, especially the impact of Medicaid-covered nursing home care, person-level Medicaid data for 1981 from four States—California, Georgia, New York, and Tennessee—were linked with data for 1981 from the Medicare Statistical System. The States included in the study are four of the five States in the Health Care Financing Administration's (HCFA's) Medicaid Tape-to-Tape data base. The Tape-to-Tape data base is the first multi-State, uniform, person-level, Medicaid research file. Michigan was excluded from this analysis because social security numbers were not available on that State's eligibility file at the time of the study, which precluded linking Medicare and Medicaid records. HCFA was granted permission to perform this link by the four State Medicaid programs.

The basis of the linkage was the Medicare file known as the Continuous Medicare History Sample (CMHS) maintained by HCFA's Bureau of Data Management and Strategy. This file, designed to provide a longitudinal data base for studying

Medicare program use, is a 5-percent sample of Medicare enrollees covering the years 1974 through 1981. Medicaid data are derived from the administrative records systems of the Medicaid Management Information Systems (MMIS), which contain information similar to Medicare data on payment for services. Medicaid is a State-administered program, hence there are substantial differences among States in processing and maintaining their MMIS data. Raw MMIS files containing data on Medicaid claims, enrollment, and providers have been obtained from the States participating in the Medicaid Tape-to-Tape project for several years and have been reformatted into uniform records and files.

## Linking Medicaid and Medicare files

Each Medicare beneficiary has an 11-digit health insurance claim (HIC) number. It consists of a Social Security or Railroad Retirement account number plus letter suffixes, referred to as beneficiary identification codes (BIC). BIC codes denote the basis of the Medicare entitlement. Medicaid recipients were matched to their Medicare records, using the HIC, sex, date of birth, and BIC. All records kept in the analysis matched on the HIC and on at least 2 other variables. Of the matched records, about 82 percent matched on all 4 variables and the remaining 18 percent matched on 3 variables. Some aged Medicaid recipients do not have Medicare and thus could not be matched to Medicare records; others could not be matched because of data problems. The number of Medicaid recipients matched to the CMHS was multiplied by 20 to estimate the study population.

The match procedure also produced records indicating that there were multiple Medicaid claim numbers for some individuals (more than 6,000 such occurrences). These multiple records were identified and combined to produce one record per person. The multiple claim numbers generally resulted from changes in beneficiary status such as enrollment category or address.

## Limitations of the data

Several limitations (completeness, accuracy, and program differences) relating to the linked Medicare-Medicaid data base are discussed in the following sections:

### Completeness

The data presented do not cover all Medicaid services. In particular, in New York, claims for personal care services, State mental hospitals, and some ambulance services were not in the MMIS files. Because some upstate counties were not included in the MMIS for all of 1981, only people in counties that participated in MMIS throughout 1981—primarily New York City and a few upstate counties—were matched to Medicare files.

Generally, claims records are not available for

health maintenance organization (HMO) enrollees. Therefore, HMO enrollees are excluded from the study. Also, a small number of claims records were received for people with no eligibility record. These were also excluded from the study.

### Accuracy

One critical variable used in this analysis is the Medicare identifier on the Medicaid files, which was used for matching purposes. A small percentage of records could not be matched because the Medicare identifier was missing or inaccurate.

### Program differences

States differ in the structure of their Medicaid programs. Although all States are required to cover hospital care, physician services, skilled nursing facility care, and some other services, coverage of a large number of services is optional. In addition, there is wide latitude in designating the income levels that determine eligibility. States also have various eligibility options and may choose to expand coverage beyond the groups receiving Aid to Families with Dependent Children (AFDC) or Supplemental Security Income (SSI) cash assistance. States also have broad latitude in defining medical admission criteria for intermediate care facility services. (During this study period, Tennessee had the most medically restricted criteria in the United States.)

The four States differed substantially in the structure of their Medicaid programs. California and New York had more generous programs, and Georgia and Tennessee were more restrictive, especially in the area of Medicaid eligibility. California supplemented the Federal SSI income level to the second highest level of any State in the country. This means that a very high proportion of the State's elderly, low-income population was covered by Medicaid.

California and New York differed substantially from Georgia and Tennessee in the structure of their Medicaid programs. These two States had more generous programs, for example, offering 27 and 29 optional Medicaid services in 1981 compared with 13 and 14 optional services offered by Georgia and Tennessee. With regard to eligibility criteria, California and New York were less restrictive and thus covered larger proportions of their States' poor than Georgia and Tennessee; in 1982, California's Medicaid program covered 87 percent of its poor, and New York's program covered 66 percent compared with 47 percent and 38 percent in Georgia and Tennessee (Cromwell et al., 1987).

In 1981, two of the States, California and New York, had medically needy programs for all eligibility groups. Georgia did not cover the medically needy in 1981. Tennessee did not cover the medically needy adults. Medically needy programs allow people who would not otherwise be income-eligible to subtract their health care expenses from income before eligibility is determined. In particular, many residents

of nursing homes become eligible for Medicaid as medically needy persons. Although Georgia had no medically needy program, and Tennessee had no medically needy program for adults, they used another eligibility option to cover many nursing home residents. This option allows States to use up to 300 percent of the Federal SSI payment level as an income standard for residents of institutions. These program differences mean that the dually entitled populations differ somewhat across the four States, and utilization patterns may vary across States because benefits vary.

## Findings

The four States had 5.9 million aged Medicare enrollees or about 22 percent of the total U.S. Medicare population. As noted earlier, the study population is based on successful matches between aged Medicaid enrollees in these four States and the 5-percent Continuous Medicare History Sample (CMHS) for the Medicare population 65 years of age or over. This process resulted in an estimated study population of 912,920 dually entitled persons. The crossovers in these four States represent about 30 percent of the crossovers in the Nation. More than one-half, 53 percent, of the study population resided in California, 27 percent in New York, 11 percent in Georgia, and 9 percent in Tennessee (Table 1).

### Age, sex, and race characteristics

As reported in previous studies, the dually entitled population is relatively older than other Medicare enrollees, and has a higher proportion of females and minority persons. The age, sex, and race composition of the dual eligibles in the four States in 1981 are shown in Table 2. The age composition differed considerably by State. New York had the highest percentage (24.9 percent) in the most-aged category (persons 85 years of age or over), and Tennessee had the lowest (16.6 percent). Compared with the proportion of persons 85 years or over in the general Medicare population in these States, the dually entitled in New York and Tennessee were 2.3 and 1.9 times as large, respectively.

The proportion of females differed across the States as well as from the general Medicare population. The percentage of females ranged from 74.5 percent in New York to 66.6 percent in California. These figures are 10 to 20 percent higher than the proportion of females reported for the Medicare population in these States (Health Care Financing Administration, 1983).

By race, the proportion of minorities (mostly black persons) among the dually entitled ranged from 46.0 percent in Georgia to 18.0 percent in California. In California, 6.8 percent were minority persons other than black. The proportion of dually enrolled minorities in each of the four States was more than twice that for the total Medicare population in these States (Health Care Financing Administration, 1983).

One of the basic purposes of this study was to determine the impact on costs for persons receiving

**Table 1**  
**Number of Medicare enrollees, Medicaid ever enrolled, matched dual eligibles to Medicare records, and percent distribution of matched records, by State: 1981**

State	Total Medicare enrollees <sup>1</sup>	Medicaid enrolled <sup>1</sup>		Matched dual eligibles		
		Number <sup>1</sup>	Percent of Medicare enrollees	Number <sup>2</sup>	Percent of Medicare enrollees	Percent distribution of matched population
Total	5,871,287	1,141,693	19.5	912,920	15.6	100.0
California	2,532,060	587,287	23.2	480,720	19.0	52.7
Georgia	541,698	114,302	21.1	99,580	18.4	10.9
New York	2,257,334	334,615	14.8	246,880	10.9	27.0
Tennessee	540,195	105,489	19.5	85,740	15.9	9.4

<sup>1</sup>Refers to those who are 65 years of age or over.

<sup>2</sup>Sample numbers inflated by 20 to estimate study population.

SOURCES: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from Medicare Statistical System; Office of Research and Demonstrations: Data from the Medicaid Tape-to-Tape project, 1981.

**Table 2**  
**Number and percent distribution of matched dual eligibles, by age, sex, race, and State: 1981**

State	Total		Age			Sex		Race		
	Number	Percent	65-74 years	75-84 years	85 years or over	Male	Female	White	Black	All other
Total	912,920	—	386,860	342,860	183,200	281,280	631,640	702,240	167,800	42,800
	Percent distribution									
California	480,720	100.0	45.3	36.0	18.7	33.4	66.6	81.9	11.2	6.8
Georgia	99,580	100.0	44.2	38.3	17.4	29.8	70.2	54.0	45.8	0.2
New York	246,880	100.0	36.2	38.9	24.9	25.5	74.5	77.5	18.6	3.9
Tennessee	85,740	100.0	41.9	41.5	16.6	33.1	66.9	73.7	26.0	0.3

SOURCES: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from Medicare Statistical System; Office of Research and Demonstrations: Data from the Medicaid Tape-to-Tape project, 1981.

Medicaid-covered nursing home care. To analyze these costs, the study population was divided into two groups, those with Medicaid-covered nursing home care and those without. In the group with Medicaid-covered nursing home care, some were in a nursing home for the entire study period; others were in a nursing home less than the full year. All of these were grouped together as the Medicaid-covered nursing home population. The group without Medicaid-covered nursing home care includes some dual enrollees who received Medicare-covered post-hospital skilled nursing facility (SNF) care. The amount expended for Medicare-covered SNF services is a very small part of the total expenditures. For ease of discussion, that group is presented in the text and tables as "without nursing home care."

The dual enrollees using Medicaid-covered nursing home care represented 3.3 percent of the total aged Medicare enrollees in the four States. In Table 3, nursing home care is defined as persons having at least 1 day of Medicaid-covered nursing home care. There was little variation in the user rates among the four States. Similar findings were reported by Ray et al. (1987) where Medicaid-covered nursing home residents for five States (these four States and Michigan) combined was 3.8 percent of the total aged in these States. The Medicaid nursing home user rates in this analyses are probably lower because of the fact that not all Medicaid nursing home users were

included in the study because of the data constraints.

The data in Table 3 reveal the age and sex differences in the use of Medicaid-covered nursing home services. For the Medicare population in the youngest group (65-74 years), about 1 percent of both males and females had some Medicaid-covered nursing home care; this was true for each of the four States. However, for the oldest age group (85 years or over) the rate of use for females was 16.7 percent, compared with 9.2 percent for males, or 80 percent greater. Similar differences were found for each State.

The study population grouped according to those with at least 1 day of Medicaid-covered nursing home services and those without nursing home care is shown in Table 4. Persons with only Medicare-covered skilled nursing facility care are included in the group without nursing home care. New York ranked first in the proportion of crossovers with Medicaid-covered nursing home care (27.9 percent). This finding is in line with the data in Table 2 that show that the crossovers in New York are the oldest of the four States. Similarly, California ranked lowest in the proportion of enrollees with Medicaid-covered nursing home care (17.6 percent). That was in line with the fact that California's crossover population is the youngest of the four States. These figures on the proportion of the dually entitled population that is institutionalized are much greater than the figures for the general aged population. The U.S. Bureau of the

**Table 3**

**Number of aged Medicare enrollees and percent who used Medicaid-covered nursing home care, by sex, age, and State: 1981**

State	Number of Medicare enrollees	Male					Female			
		Total	65-74 years	75-84 years	85 years or over	Total	65-74 years	75-84 years	85 years or over	
Percent using nursing home care										
Total	5,871,287	3.3	2.2	0.9	3.2	9.2	4.0	1.0	4.7	16.7
California	2,532,060	3.3	2.1	1.0	3.0	9.1	4.1	1.0	4.6	17.7
Georgia	541,698	3.8	2.9	1.4	5.2	10.3	4.4	1.3	6.0	17.0
New York	2,257,334	3.1	1.9	0.7	2.8	9.0	3.8	0.8	4.3	15.8
Tennessee	540,195	3.5	2.5	1.0	4.5	9.8	4.1	1.1	5.7	15.6

NOTES: Nursing home care is defined as persons having at least 1 day of Medicaid-covered nursing home care. The percent using nursing home care was calculated using the number of matched dual eligibles with nursing home care for the numerator and the number of Medicare enrollees for the denominator. These figures underestimate the percent using nursing home services because all of the dual eligibles could not be matched.

SOURCES: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from Medicare Statistical System; Office of Research and Demonstrations: Data from the Medicaid Tape-to-Tape project, 1981.

**Table 4**

**Number and percent distribution of matched dual eligibles, by age, State, and nursing home status: 1981**

State and nursing home status	Total		Age			
	Number	Percent	Total	65-74 years	75-84 years	85 years or over
Percent distribution						
Total	912,920	100.0	100.0	42.4	37.6	20.1
With nursing home care	193,080	21.2	100.0	17.2	38.6	44.2
Without nursing home care	719,841	78.8	100.0	49.1	37.3	13.6
California	480,720	100.0	100.0	45.3	36.0	18.7
With nursing home care	84,720	17.6	100.0	18.4	36.1	45.4
Without nursing home care	396,000	82.4	100.0	51.0	36.0	13.0
Georgia	99,580	100.0	100.0	44.2	38.3	17.4
With nursing home care	20,700	20.8	100.0	22.4	43.5	34.1
Without nursing home care	78,880	79.2	100.0	49.9	37.0	13.1
New York	246,880	100.0	100.0	36.2	38.9	24.9
With nursing home care	68,960	27.9	100.0	13.7	38.3	47.9
Without nursing home care	177,920	72.1	100.0	44.9	39.2	16.0
Tennessee	85,740	100.0	100.0	41.9	41.5	16.6
With nursing home care	18,700	21.8	100.0	18.5	45.7	35.8
Without nursing home care	67,040	78.2	100.0	48.5	40.3	11.2

NOTE: Percents may not add to 100 because of rounding.

SOURCES: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from Medicare Statistical System; Office of Research and Demonstrations: Data from the Medicaid Tape-to-Tape project, 1981.

Census found in 1980 that 4.6 percent of the population 65 years of age or over were in homes for the aged, including nursing and convalescent homes. The large differences in the institutionalization rates of the dually entitled, compared with the general aged population, no doubt reflects the fact that the aged in nursing homes often "spend-down" their income and assets, thereby becoming eligible for Medicaid coverage. Thus, the Medicaid program has a far higher proportion of the aged residing in nursing homes than the general aged population.

As shown in Table 4, of the users of nursing home care in the four States combined, 17.2 percent were in the 65-74 age group, and 44.2 percent were 85 years

of age or older. Corresponding figures for the group without nursing home care were 49.1 percent and 13.6 percent, respectively.

**Users of services**

For the dually entitled population, the combined coverage of Medicare and Medicaid is more comprehensive than Medicare alone. Medicare, the first payer for hospital and medical bills, provides for acute care needs. Medicaid covers long-term care, and often ambulatory services that are not covered by Medicare, such as prescription drugs, eyeglasses, and dental care. Most dual enrollees (90 to 93 percent

among the four States) used at least one service (Table 5).

Nearly one-third of dual enrollees in California, Georgia, and New York used inpatient hospital services. Tennessee had a much higher user rate of these services, 45.3 percent. Thus, inpatient hospital rates in California, Georgia, and New York were about 20 to 30 percent higher than that for the general Medicare population in these States and 90 percent higher than that in Tennessee. Use of physicians' and related services ranged from a high of 89.7 percent in California to a low of 76.3 percent in Tennessee. In 1981, use of reimbursed physicians' and related services for all Medicare enrollees in the United States was considerably lower, about 65 percent.

Most aged persons use at least one prescribed medication during the course of a year, and the user rate for dual enrollees is somewhat higher than that for all other Medicare enrollees. For the noninstitutionalized Medicare aged in 1980, 77.6 percent of those without Medicaid coverage used prescribed medicine compared with 87.1 percent of crossover (McMillan and Gornick, 1984). In Georgia, 86.7 percent of dual enrollees used at least one prescribed drug during 1981; in Tennessee, 81.6 percent; and in California, 79.9 percent. In New York, the low user rate, 48.3 percent, reflects a different billing procedure used for nursing home patients in that State. The users of prescribed drugs residing in nursing homes in New York are not separately identified; that is, costs for prescribed drugs are bundled into the nursing home bill, which will become more apparent in a later discussion on per capita expenditures.

More than one-half of the enrollees in California (52.0 percent) and New York (55.0 percent) used outpatient hospital services. A much smaller proportion (35.3 percent) used this service in Tennessee. Differences in outpatient services by States very likely reflect the geographic distribution of these facilities vis-a-vis the Medicaid population. The user rate for each of the States, however, was 20 to 90 percent higher than the 28-percent user rate for the

general U.S. Medicare population. Users of home health services ranged from 5.2 percent of enrollees in Georgia to 10.0 percent in New York—all of which were much higher user rates than that for the general Medicare population, which is about 3 percent for combined use under Part A, hospital insurance, and Part B, supplementary medical insurance, of Medicare.

In California and New York, 19.5 percent and 15.3 percent, respectively, of enrollees had dental care, very likely, a reflection of the more generous Medicaid program benefits in those States, compared with Georgia, where only 2.4 percent had dental care. Tennessee's Medicaid program does not offer adult dental care at all. An earlier study found that about one-third of the general Medicare population had some dental care in 1980, whereas among the dually entitled, the proportion was about 18 percent (McMillan and Gornick, 1984). Data from the National Health and Nutrition Examination Survey, 1971-74 (Kelly, 1979) showed that, by age 65, 46 percent of the population 65 years of age or over had lost all of their teeth. It may be that crossovers have a higher proportion who are edentulous and, thus, have less need for regular dental care.

### Overall per capita expenditures

The interrelationship between the Medicare and Medicaid programs has been recognized, particularly in the provision of health care services for the aged poor. Total per capita expenditures and the proportions paid for by Medicare and Medicaid for three age groups are shown in Table 6. These expenditures represent payments for care provided to both institutionalized and noninstitutionalized dually entitled persons. Keeping in mind the differences in the Medicaid program characteristics of the four States and the characteristics of each State's dually entitled population (especially the more advanced age and higher nursing home proportion in New York), it might be expected that per capita payments would be greatest in New York. This was indeed the finding. The per capita expenditure in New York (\$7,678) was

**Table 5**  
**Number and percent of matched dual eligibles and percent using covered services, by type of service and State: 1981**

State	Total	Percent using—								
		At least one service	Inpatient hospital services	Physicians and related services	Prescribed drugs	Outpatient hospital services	Home health services	Dental care	SNF <sup>1</sup> and ICF <sup>2</sup> care	All other services
		Percent								
California	480,720	93.2	31.1	89.7	79.9	52.0	6.7	19.5	18.3	26.6
Georgia	99,580	91.3	31.7	82.5	86.7	46.1	5.2	2.4	20.9	16.6
New York	246,880	92.4	30.1	85.2	48.3	55.0	10.0	15.3	28.2	44.2
Tennessee	85,740	89.5	45.3	76.3	81.6	35.3	6.5	0.0	22.0	12.0

<sup>1</sup>Skilled nursing facility.

<sup>2</sup>Intermediate care facility.

NOTE: Sample numbers inflated by 20 to estimate study population.

SOURCES: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from Medicare Statistical System; Office of Research and Demonstrations: Data from the Medicaid Tape-to-Tape project, 1981.

1.6 times as high as in California (\$4,712) and 2.4 times as high as in Georgia (\$3,219).

Medicare paid the larger proportion (58.2 percent) of expenditures in California, reflecting the relatively lower rate of nursing home use in that State. Medicaid paid the larger proportion of expenditures in the other States, ranging from 55.8 percent in Tennessee to 64.7 percent in New York.

Per capita expenditures were highest for the oldest

age group; in New York per capita expenditures were nearly three times as high as for those 85 years of age or over (\$12,333) than for those 65-74 years of age (\$4,533). Although Medicare's share of total expenditures decreased with advancing age, in absolute dollars, Medicare expenditures generally increased with advancing age.

The distribution of per capita expenditures by type of service and source of payment is shown in Table 7.

**Table 6**  
**Per capita expenditures for matched dual eligibles, by age, State, and source of payment: 1981**

State and source of payment	Total	Age		
		65-74 years	75-84 years	85 years or over
Per capita expenditures				
California	\$4,712	\$3,754	\$4,706	\$7,183
Percent paid by:				
Medicare	58.2	67.4	59.8	43.8
Medicaid	41.8	32.6	40.2	56.2
Georgia	\$3,219	\$2,504	\$3,419	\$4,639
Percent paid by:				
Medicare	41.0	47.4	42.3	29.6
Medicaid	59.1	52.6	57.7	70.4
New York	\$7,678	\$4,533	\$7,769	\$12,333
Percent paid by:				
Medicare	35.3	48.7	36.5	26.6
Medicaid	64.7	51.3	63.5	73.4
Tennessee	\$3,283	\$2,343	\$3,458	\$5,346
Percent paid by:				
Medicare	44.2	53.1	44.7	33.0
Medicaid	55.8	46.9	55.3	67.0

SOURCES: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from Medicare Statistical System; Office of Research and Demonstrations: Data from the Medicaid Tape-to-Tape project, 1981.

**Table 7**  
**Per capita expenditures for matched dual eligibles and percent distribution of expenditures, by type of service, State, and source of payment: 1981**

State and source of payment	Per capita expenditure	Type of service				
		Total	Inpatient hospital	Physicians and related services	SNF <sup>1</sup> and ICF <sup>2</sup>	All other services <sup>3</sup>
Percent distribution						
California	\$4,712	100.0	39.7	21.4	27.3	11.6
Medicare	2,743	100.0	60.1	28.9	1.6	9.4
Medicaid	1,968	100.0	11.4	10.8	63.1	14.7
Georgia	\$3,219	100.0	30.7	13.0	40.0	16.2
Medicare	1,319	100.0	62.4	25.2	0.5	11.9
Medicaid	1,901	100.0	8.7	4.6	67.4	19.3
New York	\$7,678	100.0	27.3	10.2	54.2	8.2
Medicare	2,712	100.0	62.4	25.7	2.3	9.6
Medicaid	4,966	100.0	8.2	1.7	82.6	7.5
Tennessee	\$3,283	100.0	33.8	11.0	42.2	13.0
Medicare	1,451	100.0	67.5	20.6	1.2	10.6
Medicaid	1,831	100.0	7.1	3.4	74.7	14.9

<sup>1</sup>Skilled nursing facility.

<sup>2</sup>Intermediate care facility.

<sup>3</sup>Includes prescribed drugs, outpatient hospital services, home health care, dental care, and a small amount paid for other services covered by Medicaid.

NOTE: Sums may not add to totals because of rounding.

SOURCES: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from Medicare Statistical System; Office of Research and Demonstrations: Data from the Medicaid Tape-to-Tape project, 1981.

The distribution differed markedly across the four States. Combined inpatient hospital care and physician services accounted for 61.1 percent of per capita costs in California and only 37.5 percent in New York. Most of the remaining per capita expenditures were for skilled nursing facility (SNF) and intermediate care facility (ICF) care. Only 27.3 percent of expenditures in California were paid for such care, compared with 54.2 percent in New York. As mentioned earlier, in New York, the costs of drugs for persons receiving nursing home care are bundled into nursing home charges. We estimate that expenditures for nursing home care in New York are overstated by about 3 to 7 percent.

### Expenditures by nursing home status

Total expenditures and per capita expenditures for persons with nursing home care are shown in Table 8. In New York, of the total expenditures for dual enrollees, 69.8 percent was for enrollees with nursing home care, who comprised only 27.9 percent of all dual enrollees in that State (Table 4). The proportion of expenditures for persons with nursing home care in New York is considerably greater than that for the other States, where those expenditures ranged from 47.0 percent in California to 59.9 percent in Tennessee. Total per capita expenditures for enrollees receiving nursing home care differed dramatically, ranging from \$19,628 in New York to \$9,504 in Georgia. These two States also had the highest (\$3,192) and the lowest (\$1,641) per capita

expenditures (respectively) for enrollees without nursing home care.

Per capita expenditures by type of service and nursing home status are shown in Table 9. For enrollees receiving nursing home care, the total per capita in New York was \$19,628 and nursing home care accounted for more than three-fourths (\$15,225) of this expenditure. In California, the corresponding total figure was \$13,545, and nursing home care accounted for nearly three-fifths (\$7,789) of the total. In New York, the per capita expenditure for inpatient hospital care for this group was \$2,913 or about one-seventh of the total; the corresponding figure for California was \$3,457 or about one-fourth. The per capita figure for physicians and related services for users of nursing home care was \$1,117 in New York and \$1,521 in California.

For enrollees without nursing home care, the per capita expenditure for inpatient hospital care ranged from \$1,792 in New York to \$821 in Georgia. In each of the four States, however, the per capita inpatient hospital expenditure accounted for at least one-half of the total per capita expenditures. The small amounts shown for SNF and ICF for those without nursing home care represent expenditures for SNF services paid for by Medicare.

These data clearly demonstrate the significant impact that use of nursing home care has on total health care expenditures and on the distribution of expenditures by type of service. For those without nursing home care, inpatient hospital care consumes the greatest proportion; for those with nursing home care, such care consumes by far the greatest proportion of expenditures.

**Table 8**

**Total and per capita expenditures for matched dual eligibles and percent distribution of expenditures, by State and nursing home status: 1981**

State and nursing home status	Total expenditures in thousands	Percent distribution	Per capita expenditure
California	\$2,147,122	100.0	\$4,712
With nursing home care	1,009,406	47.0	13,545
Without nursing home care	1,137,717	53.0	2,985
Georgia	306,354	100.0	3,219
With nursing home care	181,535	59.3	9,504
Without nursing home care	124,819	40.7	1,641
New York	1,806,611	100.0	7,678
With nursing home care	1,260,503	69.8	19,628
Without nursing home care	546,109	30.2	3,192
Tennessee	266,674	100.0	3,283
With nursing home care	159,823	59.9	9,570
Without nursing home care	106,849	40.1	1,656

SOURCES: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from Medicare Statistical System; Office of Research and Demonstrations: Data from the Medicaid Tape-to-Tape project, 1981.

### Survival by nursing home status

Nearly 11 percent of the dual enrollees died during the year. The percent of deaths by nursing home status and by age group is shown in Table 10. With the exception of Georgia, the proportion of decedents rose steadily with age for both the nursing home population and those not receiving nursing home care.

Because the nursing home population is much older than the group without Medicaid-covered nursing home care, it is to be expected that the total rate of death in the nursing home population (23.3 percent) would be higher than the rate of death in the population without nursing home care (7.5 percent). Yet, the death rate in each age group is substantially higher for the nursing home population than for the group without nursing home care. In the four States combined, among persons aged 85 years of age or over, 26.5 percent of the nursing home population died compared with 14.4 percent of the non-nursing home population. Similarly, in the age group 65-74 years, 18.0 percent of the nursing home population died compared with 5.7 percent of the non-nursing home population.

These data on survival rates by age groups indicate that, in each of these four States, the nursing home population is in poorer health than the population



without nursing home care, which again is to be expected because this is a group in need of institutional health services.

It does appear, however, that the health status of the nursing home population varies considerably across the four States. California's proportion of decedents in every age group in the nursing home population is much higher than in the other three States. In the population without nursing home care, the proportion of decedents is quite similar across States for the age groups 65-74 years and 75-84 years. More variation is found in the oldest group, persons 85 years of age or over.

Some of the variation in the proportion of decedents in nursing homes across the States may reflect the variation in the availability of alternative

care arrangements as well as other factors such as criteria for nursing home admission. The 1986 Inventory of Long-Term Care Places (National Center for Health Statistics, 1986) showed that there is a substantially greater number of board and care homes in California than in the other three States. California had 2,379 such facilities known as residential community care facilities, providing 15.8 beds per 1,000 aged persons; New York had 419 such facilities or 11.4 beds per 1,000 aged persons; Georgia had 210 or 3.2 beds per 1,000 aged persons; and Tennessee had 92 facilities or 2.8 beds per 1,000 aged persons. The existence of these board and care homes provides some flexibility to maintain the least sick persons outside of nursing homes.

**Table 9**

**Per capita expenditures for matched dual eligibles, by type of service, State, and nursing home status: 1981**

State and nursing home status	Total per capita expenditure	Type of service			
		Inpatient hospital	Physicians and related services	SNF <sup>1</sup> and ICF <sup>2</sup>	All other services <sup>3</sup>
California	\$4,712	\$1,873	\$1,007	\$1,286	\$545
With nursing home care	13,545	3,457	1,521	7,789	778
Without nursing home care	2,985	1,563	907	15	500
Georgia	3,219	988	419	1,288	524
With nursing home care	9,504	1,654	641	6,414	796
Without nursing home care	1,641	821	363	1	455
New York	7,678	2,098	783	4,164	632
With nursing home care	19,628	2,913	1,117	15,225	373
Without nursing home care	3,192	1,792	658	12	730
Tennessee	3,283	1,110	362	1,385	427
With nursing home care	9,570	1,719	445	6,728	678
Without nursing home care	1,656	952	340	2	361

<sup>1</sup> Skilled nursing facility.

<sup>2</sup> Intermediate care facility.

<sup>3</sup> Includes prescribed drugs, outpatient hospital services, home health care, dental care, and a small amount paid for nonidentified services covered by Medicaid.

SOURCES: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from Medicare Statistical System; Office of Research and Demonstrations: Data from the Medicaid Tape-to-Tape project, 1981.

**Table 10**

**Number of matched dual eligibles and percent of deaths with and without nursing home care, by age and State: 1981**

State	Total	Without nursing home care				With nursing home care			
		Total	65-74 years	75-84 years	85 years or over	Total	65-74 years	75-84 years	85 years or over
Total	912,920	719,840	353,660	268,300	97,880	193,080	33,200	74,560	85,320
Percent of deaths	10.9	7.5	5.7	7.5	14.4	23.3	18.0	22.0	26.5
California	480,720	396,000	201,960	142,460	51,580	84,720	15,620	30,600	38,500
Percent of deaths	10.7	7.1	5.5	7.2	13.4	27.5	22.9	26.2	30.4
Georgia	99,580	78,880	39,400	29,180	10,300	20,700	4,640	9,000	7,060
Percent of deaths	9.6	7.0	5.5	7.5	11.5	19.3	13.8	21.6	20.1
New York	246,880	177,920	79,800	69,660	28,460	66,960	9,480	26,420	33,060
Percent of deaths	11.4	8.3	5.9	7.6	16.6	19.4	10.7	17.2	23.1
Tennessee	85,740	67,040	32,500	27,000	7,540	18,700	3,460	8,540	6,700
Percent of deaths	11.5	8.3	6.2	8.6	16.4	23.0	16.2	22.0	27.8

SOURCES: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from Medicare Statistical System; Office of Research and Demonstrations: Data from the Medicaid Tape-to-Tape project, 1981.

## Expenditures by survival and nursing home status

As noted earlier, per capita expenditures are higher for the group with nursing home care. For the four States combined, per capita expenditures averaged \$13,524 for those with nursing home care, or over five times the per capita outlay for the group without nursing home care, \$2,661, as shown in Table 11. Earlier analyses of Medicare data alone have indicated that there are large differences in Medicare payments according to survival status. Lubitz and Prihoda (1984) traced Medicare payments for the last 12 months of life and found that expenditures for decedents were 6.2 times as high as for survivors for the same time period.

In contrast to that study, the data in Table 11 do not show 12 full months of expenditures for decedents, but rather show payments in 1981 by whether the beneficiary survived the full year or died during the year. Per capita payments for decedents averaged \$9,408, compared with \$4,417 for survivors.

These expenditure data reveal several interesting patterns of utilization. First, higher per capita expenditures for decedents holds true only for the non-nursing home population. In the four States combined, per capita payments for the non-nursing home population were \$2,261 for survivors and \$7,590 for decedents. In the non-nursing home population in each State, expenditures for decedents were over three times as great as for survivors. In contrast, in the nursing home population, per capita payments for decedents are lower than for survivors. Payments averaged \$14,111 for survivors and \$11,593 for decedents. This pattern also persisted across all four States.

Another unexpected pattern is revealed in these data with regard to the relationship between age and per

capita payments. As shown in Figure 1, when dually entitled persons are categorized according to whether they received Medicaid-covered nursing home care and whether they died, per capita payments did not rise across age groups. This finding is notably different from the results shown in Table 6, where there is a marked rise in per capita payments by age.

The data in Table 11, thus, indicate that the rise in per capita payments as age advances, generally found in Medicare and Medicaid expenditure data, reflects two factors—increasing proportions of persons in ascending age groups who are institutionalized, and increasing proportions of persons who are in their last months of life. These data show that the crossover population falling into the category of “non-nursing home and surviving the year” average relatively low expenditures for health care throughout all age groups.

Another interesting pattern shown in Table 11 (and found also in Lubitz and Prihoda, 1984) is that expenditures for decedents in the group 85 years of age or over tends to be a little lower than in the two younger age groups.

The relative impact of nursing home payments and hospital payments on the total per capita outlay is shown in Tables 12 and 13. Of the \$13,524 per capita expenditures (Table 11) for the nursing home population, nursing home payments accounted for \$9,152 (Table 12). On average, nursing home payments for survivors were about double those for decedents, no doubt reflecting costs for about twice as many months in the nursing home for the survivors compared with the decedents. The lower costs for nursing home decedents are thus largely the result of “exposure” time, and not any intrinsically cheaper aspects to their health care.

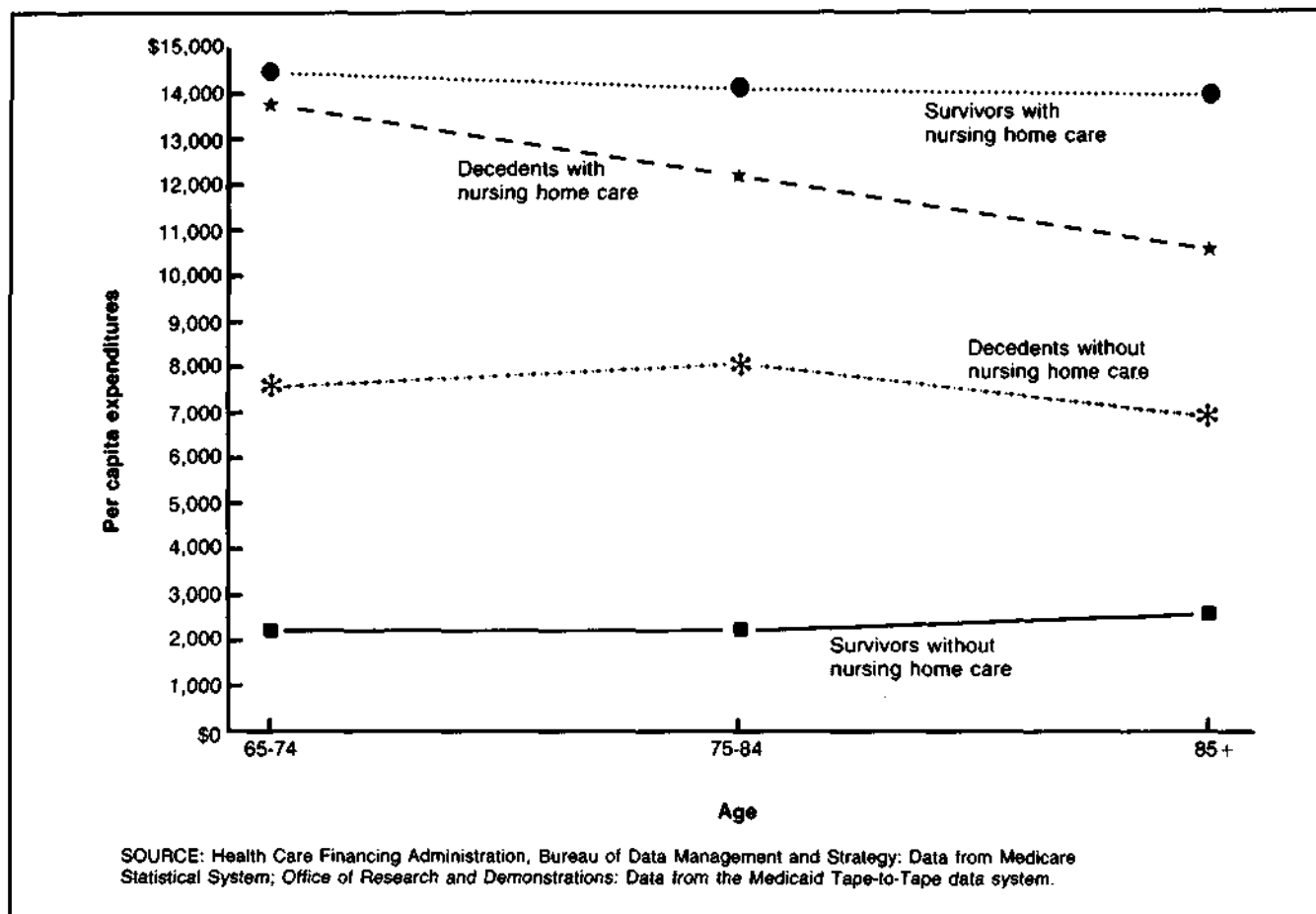
Per capita inpatient hospital payments (Table 13) indicate that these services averaged \$2,616 for those

**Table 11**  
**Combined Medicare and Medicaid per capita expenditures for matched dual eligibles with and without nursing home care, by age, State, and survival status: 1981**

State and survival status	Without nursing home care					With nursing home care			
	Total	Total	65-74 years	75-84 years	85 years or over	Total	65-74 years	75-84 years	85 years or over
<b>Total</b>	<b>\$4,959</b>	<b>\$2,661</b>	<b>\$2,513</b>	<b>\$2,658</b>	<b>\$3,204</b>	<b>\$13,524</b>	<b>\$14,347</b>	<b>\$13,684</b>	<b>\$13,064</b>
Survivors	4,417	2,261	2,210	2,220	2,584	14,111	14,472	14,102	13,963
Decedents	9,408	7,590	7,578	8,083	6,903	11,593	13,777	12,201	10,576
<b>California</b>	<b>4,466</b>	<b>2,873</b>	<b>2,805</b>	<b>2,859</b>	<b>3,181</b>	<b>11,915</b>	<b>14,056</b>	<b>12,034</b>	<b>10,951</b>
Survivors	3,860	2,434	2,427	2,387	2,605	12,401	13,970	12,303	11,778
Decedents	9,514	8,588	9,288	8,972	6,901	10,634	14,345	11,275	9,062
<b>Georgia</b>	<b>3,076</b>	<b>1,582</b>	<b>1,609</b>	<b>1,527</b>	<b>1,840</b>	<b>8,770</b>	<b>9,153</b>	<b>9,000</b>	<b>8,225</b>
Survivors	2,774	1,354	1,404	1,295	1,323	9,012	9,451	9,089	8,604
Decedents	5,931	4,610	5,110	4,390	4,094	7,761	7,295	8,677	6,719
<b>New York</b>	<b>7,318</b>	<b>3,069</b>	<b>2,606</b>	<b>3,137</b>	<b>4,201</b>	<b>18,279</b>	<b>19,419</b>	<b>18,829</b>	<b>17,512</b>
Survivors	6,731	2,615	2,386	2,621	3,321	18,815	19,494	19,104	18,344
Decedents	11,885	8,101	6,126	9,377	8,629	16,053	18,901	17,504	14,744
<b>Tennessee</b>	<b>3,110</b>	<b>1,594</b>	<b>1,570</b>	<b>1,584</b>	<b>1,733</b>	<b>8,547</b>	<b>8,732</b>	<b>8,620</b>	<b>8,358</b>
Survivors	2,843	1,362	1,394	1,293	1,480	9,165	9,148	9,083	9,288
Decedents	5,160	4,146	4,220	4,682	3,022	6,477	6,577	6,980	5,938

SOURCES: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from Medicare Statistical System; Office of Research and Demonstrations: Data from the Medicaid Tape-to-Tape project, 1981.

**Figure 1**  
**Per capita expenditures for matched dual eligibles, by age: 1981**



receiving some nursing home care. These inpatient hospital data reveal two very interesting patterns. First, for both the nursing home population and the non-nursing home population, inpatient expenditures are much higher for decedents than for survivors. This is the same pattern found in earlier studies of expenses in the last year of life; that is, preceding death there is generally a period of acute illness, often treated in the hospital (Lubitz and Prihoda, 1984; McCall, 1984; Piro and Lutins, 1973).

The second interesting pattern shown in Table 13 is that per capita inpatient expenditures are somewhat lower for decedents in the nursing home population compared with decedents in the non-nursing home population and that this difference occurs primarily in the oldest age group. This finding may reflect different patterns of care for those approaching death. It is likely that some of the aged who are terminally ill and living in the community are hospitalized for palliative treatment while similar terminally ill patients residing in nursing homes can be equally well cared for in the nursing home.

### Survivors not using nursing home services

The percentage of persons in each age group who did not use Medicaid-covered nursing home services and who survived the year is shown in Table 14. In the four States combined, 72.9 percent were in this category—that is, persons living in the community and alive at the end of the year. The proportion in this category is clearly a function of age. Of all persons aged 65-74 years of age, 86.2 percent were alive and in the community. By age 85 years or over, the proportion fell to 45.8 percent.

As expected, there was some variation across the four States in the proportions that fell into the category of neither using nursing home care nor dying. However, the pattern across age groups was notably similar to each State. The data in Table 11 showed that per capita expenditures for people in this category averaged \$2,261 in these States and did not vary across age groups. That is, health care expenditures for the oldest-old living in the community and surviving the year (45.8 percent in

**Table 12**

**Per capita nursing home expenditures for matched dual eligibles with nursing home care, by age, State, and survival status: 1981**

State and survival status	Total	Age		
		65-74 years	75-84 years	85 years or over
<b>Total</b>	\$9,152	\$8,309	\$8,931	\$9,674
Survivors	10,227	9,054	9,966	10,979
Decedents	5,614	4,919	5,254	6,059
<b>California</b>	6,683	6,135	6,268	7,236
Survivors	7,741	6,957	7,278	8,485
Decedents	3,896	3,370	3,425	4,379
<b>Georgia</b>	5,895	5,989	5,601	6,207
Survivors	6,495	6,496	6,195	6,869
Decedents	3,390	2,820	3,441	3,577
<b>New York</b>	14,034	13,853	14,152	13,992
Survivors	15,012	14,213	15,010	15,273
Decedents	9,973	11,370	10,016	9,728
<b>Tennessee</b>	5,941	6,051	5,828	6,028
Survivors	6,688	6,564	6,506	7,013
Decedents	3,440	3,395	3,428	3,465

SOURCES: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from Medicare Statistical System; Office of Research and Demonstrations: Data from the Medicaid Tape-to-Tape project, 1981.

**Table 13**

**Per capita inpatient hospital expenditures for matched dual eligibles with and without nursing home care, by age, State, and survival status: 1981**

State and survival status	Per capita inpatient hospital expenditures								
	Without nursing home care					With nursing home care			
	Total	Total	65-74 years	75-84 years	85 years or over	Total	65-74 years	75-84 years	85 years or over
<b>Total</b>	\$1,678	\$1,426	\$1,285	\$1,440	\$1,897	\$2,616	\$3,814	\$2,846	\$1,947
Survivors	1,299	1,100	1,047	1,084	1,359	2,193	3,275	2,354	1,573
Decedents	4,788	5,438	5,251	5,859	5,103	4,007	6,270	4,594	2,984
<b>California</b>	1,776	1,505	1,415	1,505	1,858	3,041	4,958	3,336	2,029
Survivors	1,351	1,153	1,124	1,125	1,367	2,531	4,184	2,747	1,606
Decedents	5,315	6,085	6,421	6,436	5,030	4,383	7,563	4,992	2,995
<b>Georgia</b>	945	792	787	769	876	1,526	1,668	1,882	979
Survivors	718	611	640	582	583	1,183	1,427	1,441	689
Decedents	3,088	3,182	3,302	3,085	3,141	2,957	3,177	3,487	2,132
<b>New York</b>	2,000	1,723	1,362	1,794	2,562	2,713	3,840	2,997	2,163
Survivors	1,592	1,338	1,175	1,366	1,779	2,337	3,515	2,540	1,780
Decedents	5,169	5,982	4,342	6,971	6,501	4,274	6,083	5,202	3,439
<b>Tennessee</b>	1,052	917	891	911	1,047	1,535	1,460	1,643	1,436
Survivors	851	731	749	679	848	1,364	1,367	1,382	1,336
Decedents	2,591	2,963	3,038	3,381	2,058	2,109	1,938	2,566	1,699

SOURCES: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from Medicare Statistical System; Office of Research and Demonstrations: Data from the Medicaid Tape-to-Tape project, 1981.

that age group) were at the same level as health care expenditures for the youngest-old, persons 65-74 years of age living in the community and surviving the year (86.2 percent in that age group).

Can we presume then, that this particular category of persons is similar in health status across these age groups? Perhaps not. Perhaps the oldest-old in this group, although not experiencing higher use of health care services, still have a poor health status. More study of this group is clearly warranted.

**Discussion**

The primary objective of this study was to gain an

understanding of the impact of nursing home care on total health care expenditures for aged Medicare enrollees also entitled to Medicaid. The four States differed considerably in eligibility and benefit structure. In particular, Tennessee and Georgia did not cover all medically needy aged, but rather used the up-to-300-percent rule to cover some nursing home residents. In contrast, New York and California have medically needy programs for all eligible groups. Considerable differences across the four States in use and cost of services were cited. Many other factors, characteristic of the individual State Medicaid programs, affect the data on health care use and

**Table 14**

**Number of matched dual eligibles and percent without nursing home care and surviving the year, by age and State: 1981**

State	Total	Age		
		65-74 years	75-84 years	85 years or over
Total	912,920	386,860	342,860	183,200
Percent without nursing home care and surviving	72.9	86.2	72.4	45.8
California	480,720	217,580	173,060	90,080
Percent without nursing home care and surviving	76.5	87.7	76.4	49.6
Georgia	99,580	44,040	38,180	17,360
Percent without nursing home care and surviving	73.6	84.5	70.7	52.5
New York	246,880	89,280	96,080	61,520
Percent without nursing home care and surviving	66.1	84.1	67.0	38.6
Tennessee	85,740	35,960	35,540	14,240
Percent without nursing home care and surviving	71.7	84.8	69.4	44.2

SOURCES: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from Medicare Statistical System; Office of Research and Demonstrations: Data from the Medicaid Tape-to-Tape project, 1981.

expenditures presented here, some of which are beyond the scope of this analysis. This analysis does, however, permit a partial explanation of some of the differences shown between the States.

Two factors contributing to differences in use and cost of health care among the States are differing eligibility criteria and benefit packages. Unlike Medicare, where there is a national eligibility standard, Medicaid eligibility is established by each individual State. The States decide which groups will be covered (that is, the categorically and/or medically needy), the scope of coverage, and which services, if any, will be covered in addition to the basic mandated services. The results of these decisions are reflected in the number of users of services among the four States studied, as well as in their per capita expenditures. Georgia, for example, has no medically needy program and thus restricts the number of recipients (and expenditures), and Tennessee does not offer coverage for dental care. These two States had relatively low per capita expenditures. In contrast, California and New York, both having "generous" Medicaid programs, had high per capita expenditures.

Other factors affecting per capita expenditures concern the use of nursing home services and survival status. The data indicate that nursing home use and use of services in the last year of life had the greatest impact on health care costs. As shown, the increase in the per capita expenditure for the total population as age increases primarily reflects increasing proportions of persons in nursing homes and/or increasing proportions of persons in the last months of life.

The cost of nursing home care has been a focus of national concern in recent years. Studies on the cost of care in the last year of life have also received widespread attention. Data from this study show how each of these factors affect the cost of health care.

**Summary**

In summary, when data for the dually entitled Medicare-Medicaid population in the four States were

separated according to nursing home status and survival status, several interesting patterns emerged:

- The death rate in each age group was substantially higher for the nursing home population when compared with the group without nursing home care, indicating that the nursing home population was in substantially poorer health than the non-nursing home population.
- The mortality rates of the nursing home population varied considerably across the four States. The percent dying in the nursing home population was much higher in California than in the other three States, very likely reflecting differences in the availability of alternative care arrangements for those not as sick as well as other factors such as medical criteria for admission to nursing homes.
- The higher per capita expenditures for decedents holds true only for the non-nursing home population. In the nursing home population, per capita payments for decedents are lower than for survivors.
- When dually entitled persons were categorized according to whether they received Medicaid-covered nursing home care and whether they died, per capita payments did not rise across age groups. In fact, among decedents, with or without nursing home care, payments were actually lower in the oldest age groups.
- Per capita inpatient hospital expenditures were a little lower for decedents in the nursing home population when compared with decedents in the non-nursing home population. It is likely that some of the aged who are terminally ill and living in the community are hospitalized for palliative treatment, while similar terminally ill patients residing in nursing homes can be equally well cared for in that setting.
- Seventy-three percent of the crossover population had no nursing home care and survived the year. This group averaged relatively low expenditures for health care.

Our finding that persons 85 years of age or over who were living in the community and surviving the year had health care costs that were no higher than similar persons in the group 65-74 years of age raises some intriguing questions. Is the health status of this eldest age group at the same level as the youngest of the aged? How do these groups differ? Further studies are needed to answer these questions.

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