Expenses and Sources of Payment for Nursing Home Residents, 1996

MEPS

Research #13 Findings

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Abstract

This report from the Agency for Healthcare Research and Quality presents estimates of total nursing home expenses during 1996. Data are derived from the 1996 Nursing Home Component of the Medical Expenditure Panel Survey (MEPS). Separate estimates are presented for mean expenses per person and per day. The distribution of sources of payment is shown by demographic, financial, and health status characteristics of nursing home users. Differences in expenses by selected personal characteristics are discussed. Expenses for different types of nursing homes are also shown. In 1996, Medicaid contributed 44 percent to total annual nursing home expenditures, Medicare contributed 19 percent, and out-of-pocket payments contributed 30 percent. People with the shortest nursing home stays had the highest annual expenses per patient day.

Suggested citation

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The Medical Expenditure Panel Survey (MEPS)

Background

The Medical Expenditure Panel Survey (MEPS) is conducted to provide nationally representative estimates of health care use, expenditures, sources of payment, and insurance coverage for the U.S. civilian noninstitutionalized population. MEPS also includes a nationally representative survey of nursing homes and their residents. MEPS is cosponsored by the Agency for Healthcare Research and Quality (AHRQ), formerly the Agency for Health Care Policy and Research, and the National Center for Health Statistics (NCHS).

MEPS comprises four component surveys: the Household Component (HC), the Medical Provider Component (MPC), the Insurance Component (IC), and the Nursing Home Component (NHC). The HC is the core survey, and it forms the basis for the MPC sample and part of the IC sample. The separate NHC sample supplements the other MEPS components. Together these surveys yield comprehensive data that provide national estimates of the level and distribution of health care use and expenditures, support health services research, and can be used to assess health care policy implications.

MEPS is the third in a series of national probability surveys conducted by AHRQ on the financing and use of medical care in the United States. The National Medical Care Expenditure Survey (NMCES) was conducted in 1977, the National Medical Expenditure Survey (NMES) in 1987. Beginning in 1996, MEPS continues this series with design enhancements and efficiencies that provide a more current data resource to capture the changing dynamics of the health care delivery and insurance system.

The design efficiencies incorporated into MEPS are in accordance with the Department of Health and Human Services (DHHS) Survey Integration Plan of June 1995, which focused on consolidating DHHS surveys, achieving cost efficiencies, reducing respondent burden, and enhancing analytical capacities. To accommodate these goals, new MEPS design features include linkage with the National Health Interview Survey (NHIS), from which the sample for the MEPS HC is drawn, and enhanced longitudinal data collection for core survey components. The MEPS HC augments NHIS by selecting a sample of NHIS respondents, collecting additional data on their health care expenditures, and linking these data with additional information collected from the respondents' medical providers, employers, and insurance providers.

Household Component

The MEPS HC, a nationally representative survey of the U.S. civilian noninstitutionalized population, collects medical expenditure data at both the person and household levels. The HC collects detailed data on demographic characteristics, health conditions, health status, use of medical care services, charges and payments, access to care, satisfaction with care, health insurance coverage, income, and employment.

The HC uses an overlapping panel design in which data are collected through a preliminary contact followed by a series of five rounds of interviews over a 2½-year period. Using computer-assisted personal interviewing (CAPI) technology, data on medical expenditures and use for 2 calendar years are collected from each household. This series of data collection rounds is launched each subsequent year on a new sample of households to provide overlapping panels of survey data and, when combined with other ongoing panels, will provide continuous and current estimates of health care expenditures.

The sampling frame for the MEPS HC is drawn from respondents to NHIS, conducted by NCHS. NHIS provides a nationally representative sample of the U.S. civilian noninstitutionalized population, with oversampling of Hispanics and blacks.

Medical Provider Component

The MEPS MPC supplements and validates information on medical care events reported in the MEPS HC by contacting medical providers and pharmacies identified by household respondents. The MPC sample includes all hospitals, hospital physicians, home health agencies, and pharmacies reported in the HC. Also included in the MPC are all office-based physicians:

- Providing care for HC respondents receiving Medicaid.
- Associated with a 75-percent sample of households receiving care through an HMO (health maintenance organization) or managed care plan.
- Associated with a 25-percent sample of the remaining households.

Data are collected on medical and financial characteristics of medical and pharmacy events reported by HC respondents, including:

- Diagnoses coded according to ICD-9 (9th Revision, International Classification of Diseases) and DSM-IV (Fourth Edition, *Diagnostic and Statistical Manual of Mental Disorders*).
- Physician procedure codes classified by CPT-4 (Current Procedural Terminology, Version 4).
- Inpatient stay codes classified by DRG (diagnosis-related group).
- Prescriptions coded by national drug code (NDC), medication names, strength, and quantity dispensed.
- Charges, payments, and the reasons for any difference between charges and payments.

The MPC is conducted through telephone interviews and mailed survey materials.

Insurance Component

The MEPS IC collects data on health insurance plans obtained through private and public-sector employers. Data obtained in the IC include the number and types of private insurance plans offered, benefits associated with these plans, premiums, contributions by employers and employees, and employer characteristics.

Establishments participating in the MEPS IC are selected through three sampling frames:

- A list of employers or other insurance providers identified by MEPS HC respondents who report having private health insurance at the Round 1 interview.
- A Bureau of the Census list frame of private-sector business establishments.
- The Census of Governments from the Bureau of the Census.

To provide an integrated picture of health insurance, data collected from the first sampling frame (employers and other insurance providers) are linked back to data provided by the MEPS HC respondents. Data from the other three sampling frames are collected to provide annual national and State estimates of the supply of private health insurance available to American workers and to evaluate policy issues pertaining to health insurance. Beginning in 2000, national estimates of employer contributions to group health insurance from the MEPS IC are being used in the computation of Gross Domestic Product (GDP) by the Bureau of Economic Analysis.

The MEPS IC is an annual panel survey. Data are collected from the selected organizations through a prescreening telephone interview, a mailed questionnaire, and a telephone followup for nonrespondents.

Nursing Home Component

The 1996 MEPS NHC was a survey of nursing homes and persons residing in or admitted to nursing homes at any time during calendar year 1996. The NHC gathered information on the demographic characteristics, residence history, health and functional status, use of services, use of prescription medications, and health care expenditures of nursing home residents. Nursing home administrators and designated staff also provided information on facility size, ownership, certification status, services provided, revenues and expenses, and other facility characteristics. Data on the income, assets, family relationships, and caregiving services for sampled nursing home residents were obtained from next-of-kin or other knowledgeable persons in the community.

The 1996 MEPS NHC sample was selected using a two-stage stratified probability design. In the first stage, facilities were selected; in the second stage, facility residents were sampled, selecting both persons in residence on January 1, 1996, and those admitted during the period January 1 through December 31.

The sampling frame for facilities was derived from the National Health Provider Inventory, which is updated periodically by NCHS. The MEPS NHC data were collected in person in three rounds of data collection over a 1½-year period using the CAPI system. Community data were collected by telephone using computer-assisted telephone interviewing (CATI) technology. At the end of three rounds of data collection,

the sample consisted of 815 responding facilities, 3,209 residents in the facility on January 1, and 2,690 eligible residents admitted during 1996.

Survey Management

MEPS data are collected under the authority of the Public Health Service Act. They are edited and published in accordance with the confidentiality provisions of this act and the Privacy Act. NCHS provides consultation and technical assistance.

As soon as data collection and editing are completed, the MEPS survey data are released to the public in staged releases of summary reports and microdata files. Summary reports are released as printed documents and electronic files. Microdata files are released on CD-ROM and/or as electronic files.

Printed documents and CD-ROMs are available through the AHRQ Publications Clearinghouse. Write or call:

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Additional information on MEPS is available from the MEPS project manager or the MEPS public use data manager at the Center for Cost and Financing Studies, Agency for Healthcare Research and Quality, 2101 East Jefferson Street, Suite 500, Rockville, MD 20852 (301-594-1406).

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Expenses and Sources of Payment for Nursing Home Residents, 1996

by Jeffrey Rhoades, Ph.D., and John Sommers, Ph.D., Agency for Healthcare Research and Quality

Introduction

Data pertaining to the nursing home industry are of critical importance because of the dramatic growth in the number of Americans over age 75 and the desire to minimize the duration of expensive inpatient hospital care. The trend in long-term care is toward expansion of community-based care for people with functional limitations. However, there continues to be a subset of individuals who need sophisticated 24-hour skilled nursing supervision. A better understanding of the current nursing home market can contribute to informed decisions about the provision of long-term care.

National expenses for services in nursing homes amounted to about $70 billion in 1996, according to data from the 1996 Medical Expenditure Panel Survey (MEPS) Nursing Home Component (NHC).[1] Thirty percent of the total was paid out of pocket from Social Security or pension income or from other income or assets of the sample person or sample person's family. A small amount (4 percent) was paid for through private insurance. The Medicaid program financed most of the remainder (44 percent), Medicare paid 19 percent, and 3 percent of expenditures were paid by other sources (Department of Veterans Affairs, health maintenance organization contract, or other). Because most nursing home care is financed out of pocket or through Medicaid, the prospect of rapid increases in the number of Americans who are elderly and at risk for nursing home care has turned the financing of these services into a matter of intense private and public concern. State and Federal Medicaid budgets will be stretched to cover nursing home services for those who cannot afford this type of care.

The three main sources of payment for nursing home care were Medicaid (44 percent of total), out-of-pocket payments (30 percent), and Medicare (19 percent).

The 1996 MEPS NHC, conducted by the Agency for Healthcare Research and Quality (AHRQ), was a national, year-long panel survey of nursing homes and their residents designed to provide estimates of expenses and sources of payment for all people using nursing homes at any time in 1996. MEPS is the third in a series of AHRQ-sponsored surveys to collect information on the health care use and spending of the American public. The first survey was the 1977 National Medical Care Expenditure Survey (NMCES), and the second was the 1987 National Medical Expenditure Survey (NMES). NMES was the first national expenditure survey to contain an institutional component designed explicitly to collect detailed medical expense information on people in long-term care facilities (Potter, 1998).

The estimates reported here describe the distribution and rates of spending over the course of a calendar year from a variety of perspectives for nursing homes and their residents. First, all people who used a nursing home during 1996–that is, the people who account for 1996 nursing home expenses–were categorized with respect to their institutional experience over the course of the year. Those who were institutionalized all year are distinguished from 1996 admissions, and those alive at the end of 1996 are distinguished from those who died in 1996. These distinctions take into account the fact that people who stayed in a nursing home during the entire 12-month reference period were long-stay patients, but 1996 admissions also include a heavy representation of patients who were in the nursing home for relatively short periods of time (often less than 3 months). A more detailed discussion is provided in the section "Type of Stay."

Previous research has shown that long-stay and short-stay patients are significantly different in health status, sociodemographic characteristics, and use and

[1]The MEPS estimate of national expenditures in nursing homes differs from the estimate in the National Health Expenditures of the Health Care Financing Administration. See the technical appendix for details.

expense patterns (Dunkle and Kart, 1990; Kemper, Spillman, and Murtaugh, 1991; Spence and Wiener, 1990; Wayne, Rhyen, Thompson, et al., 1991). Average annual expenses in 1996, annual out-of-pocket expenses, average daily expenses, and the share of expenses paid by various third-party sources vary across subgroups defined by their institutional experience and vital status at the end of the year. There is also substantial variation in expense patterns according to the demographic characteristics, income, and health status of nursing home residents.

To shed light on variations in nursing home expenses, this report describes average daily nursing home expenses classified by payment source, geographic location, and type of facility.

The technical appendix presents details concerning sample selection, the sources of data, and questionnaire items, and explains how the estimates were derived. It also provides information on the construction of variables used in the analysis and on estimates of standard errors for assessing the confidence level of the national estimates. Definitions of terms used in this report are also included. Except as indicated, only statistically significant differences between estimates are discussed in the text.

Type of Stay

Resident on January 1, 1996

Over one-third of nursing home residents (1,095,000) were in a nursing home at the beginning of the year and remained institutionalized through December 31, 1996 (Table 1). Expenses for these residents amounted to $36,368 per person for the year, or $101 per nursing home day. (This annual estimate includes fewer than 366 nursing home days for some full-year nursing home residents with short-term hospital stays.) Medicaid financed 58 percent of expenses for this group; 33 percent was paid out of pocket. In addition, 413,000 people residing in nursing homes at the beginning of 1996 had died by the end of the year. Their 1996 average expenses ($17,517) were less than half the expenses of those who survived in a nursing home beyond 1996. Their average expense per day ($109) was greater and their reliance on Medicaid (49 percent) as a source of payment was less when compared to full-year residents.

Admitted During 1996

Of residents admitted to nursing homes in 1996, 593,000 people remained institutionalized beyond the end of the year. Their average expense per day ($155) was higher than the expense for full-year residents. The share of their annual expense paid out of pocket (26 percent) was similar to the average for all residents (30 percent), while the share paid by Medicaid was lower (24 percent, compared to 44 percent for all nursing home residents). Another 468,000 people admitted in 1996 had died by the end of the year. Their average daily expense ($204) was higher than the average for all nursing home users ($118), and the proportion paid by Medicaid was considerably lower (8 percent) than for full-year residents. A relatively large share was paid by Medicare (55 percent), and 25 percent was paid out of pocket.

Most of the 527,000 nursing home users who were discharged to the community during 1996 were part of the 1996 admissions cohort (476,000). The average daily nursing home expenses for those admitted and discharged during the year were high—$257. At $8,569, their annual nursing home expenses were less than half the average ($22,561), indicating a shorter nursing home stay. In 1996 such individuals averaged a length of stay of just 33 days, compared to an average stay of 191 days for the total nursing home population (data not shown). The high daily expenses could reflect, in part, an increased intensity and concentration of nursing home services. The majority of the expenses for this group (63 percent) were paid for by Medicare. The Medicare share was similar to that for the 1996 admissions who had died by the end of the year (55 percent). Medicaid coverage (5 percent) was virtually the same as that for 1996 admissions who had died by the end of the year (8 percent). Private health insurance paid for 12 percent of nursing home expenses for residents admitted and discharged during the year.

Daily expenses per patient day were highest for those with the shortest nursing home stays.

In percentage terms (derived from Table 1), 35 percent of nursing home users were institutionalized all year and 13 percent died during 1996 after beginning the year in a nursing home. Nineteen percent of the total nursing home population were admitted in 1996 and

survived beyond the end of the year, and 15 percent of the total were admitted in 1996 and had died by the end of the year. The remainder of the nursing home population (17%) were discharged during the year.

Characteristics of Residents

The variation in expenses and sources of payment across subgroups of nursing home residents is only partly explained by differences in institutional status over the year. Tables 2-4 show variation by other nursing home resident characteristics. Annual nursing home expenses, except those for people under 65, tended to increase with increasing age, while the average expense per nursing home day tended to decrease. Higher annual expenses coupled with lower daily expenses for older residents indicates that nursing home stays were longer for such residents (Table 2). In 1996 the average length of stay ranged from 158 days for residents ages 65-69 to 239 days for those 90 and over (data not shown). In addition, nursing home care was possibly of a more custodial nature as the age of the nursing home resident increased. Women age 85 and over were the age-sex group most likely to be institutionalized all year (data not shown), but compared with women under age 70, a smaller share of their expenditures was financed by Medicaid and a larger share was paid out of pocket.

Demographic Characteristics

In general, the proportion of expenses paid for by the different sources of payment varied more with age than annual and daily expenses did (Table 2). Women were more likely than men to have longer stays in 1996 (206 and 163 days, respectively; data not shown). This is reflected in women's annual expenses, which were substantially higher ($23,639 vs. $20,472), while their daily expenses were lower than those for men ($115 vs. $126). Lower daily expenses for women may also indicate that women received a less concentrated delivery of nursing home services than men. The share of expenditures paid by Medicare was similar for women and men. In contrast, women paid a greater proportion of their expenses with Medicaid and out-of-pocket sources of payment

The expenses of married residents averaged $137 per day, compared to $114 for unmarried residents. However, married residents averaged $19,771 in annual expenses (in contrast to $23,420 for unmarried residents) because married residents tended to have shorter stays in 1996 (144 days, as opposed to 205 days for unmarried residents). The higher daily expense for married residents could also be a function of a greater intensity in the use of nursing home services. Thirty-four percent of the expenses of married residents were paid for by Medicaid, compared to 47 percent for the unmarried. In contrast, married residents relied to a greater extent on Medicare (28 percent) and private insurance (7 percent) when compared to unmarried users (17 and 3 percent, respectively).

Sources of payment varied with respect to race and ethnicity, although there were no differences in annual or daily expenses by racial/ethnic groups. Whites and others (others are included with whites because of small sample size) paid for 33 percent of their nursing home expenses out of pocket. Blacks and Hispanics both paid 12 percent of their expenses out of pocket.

Annual expenses, daily expense, and sources of payment varied by institutional status. People residing in a nursing home on January 1, 1996, had greater annual expenses than those admitted during the year ($30,587 vs. $14,412) and lower daily expenses ($102 vs. $177), and they relied more heavily on Medicaid (57 percent vs. 17 percent) and out of pocket (33 percent vs. 24 percent) as sources of payment. Nursing home residents admitted in 1996 had a greater proportion of their nursing home bill paid for by Medicare than continuing residents had (46 percent compared to 6 percent) and also relied more on private insurance (8 percent compared to 1 percent).

Poverty Level, Home Ownership, and Medicaid Status

Average expenses per day increased with annual income, from $103 per day in the lowest income group to $149 in the highest income group (Table 3). Annual expenses exhibited just the opposite pattern, decreasing from $24,060 for the lowest income group to $18,310 for the highest income group. The share of expenses paid out of pocket increased with income. Medicaid paid 67 percent of 1996 nursing home expenses for the lowest

Expenses per day increased as income increased.

income group, compared to just 5 percent for nursing home residents with incomes of four times or more the poverty level. While the Medicaid share of expenses for people in the lowest income group was substantial, they still paid for 19 percent of nursing home expenses out of pocket.

Residents who owned a home at the date of interview had lower annual but higher daily expenses than those who did not own a home. Home owners had annual expenses of $18,096 and daily expenses of $135, compared to $24,673 and $113, respectively, for residents who were not home owners. Sources of payment also varied by home ownership. Home owners paid a greater proportion of their expenses through Medicare (29 percent vs. 15 percent) and out of pocket (35 percent vs. 29 percent) and relied less on Medicaid (25 percent vs. 51 percent) than residents who did not own a home.

Medicaid enrollees averaged more in annual nursing home expenses than people not on Medicaid ($26,549 per year vs. $18,026) but had a lower daily expenditure rate ($103 vs. $158). Residents without Medicaid support paid 50 percent of their expenses out of pocket, for an average of $9,013 per person for the year. Those enrolled in Medicaid at some point in 1996 paid 18 percent of their own expenses ($4,779). In addition to paying more out of pocket, residents without Medicaid relied more heavily on Medicare (35 percent vs. 9 percent for Medicaid enrollees), private insurance (8 percent vs. 1 percent), and other sources of payment (8 percent vs. 1 percent).

Functional and Mental Health Status

Residents who died during the year had lower annual nursing home expenses ($13,274) and higher daily expenses ($132) than residents who were alive at the end of the year ($26,259 and $116, respectively), as shown in Table 4. Those who died during the year also relied less on Medicaid (34 percent) and more on Medicare (28 percent) when compared to those alive at the end of the year (46 and 17 percent, respectively).

Mean annual expenses were lowest ($13,170) for residents with no limitations in activities of daily living (ADLs), while their daily expense ($141) was high, reflecting the fact that these individuals tended to have short stays (93 days on average in 1996; data not shown) and may have required a greater concentration of nursing home services. For residents having one to six ADL limitations, the trend was for a general increase in average daily expenses, ranging from $99 for people with one ADL limitation to $125 for those with five ADL limitations (Table 4).

There was no difference between the three different categories of incontinence with respect to daily expenses ($108-$121). However, residents having urinary incontinence only or bowel incontinence (with or without urinary incontinence) had higher annual expenses than those with no incontinence. This reflects the tendency for incontinent residents to remain in the nursing home for longer periods of time. In 1996, average length of stay was 234 days for those with urinary incontinence only and 225 days for those with bowel incontinence, compared to 166 days for those without incontinence (data not shown).

Annual expenses were less for nursing home residents without mental disorders ($18,951 per person) than for residents with dementia but no other mental disorder ($27,098). However, those without mental disorders had a higher daily expense than those with dementia alone, $129 vs. $109. Residents with no mental disorder had only 36 percent of their annual expenses paid for by Medicaid, a smaller portion than for residents with some type of mental disorder. However, residents with no mental disorders had a greater portion of annual expenses paid for by Medicare (29 percent) than any other group.

Figure 1 shows the distribution of nursing home residents by their out-of-pocket expenses. Forty-three percent of all users spent $1,000 or less out of pocket, including 36 percent who incurred no out-of-pocket expenses; 20 percent spent between $1,001 and $5,000, and 18 percent spent between $5,001 and $10,000. Twelve percent spent between $10,001 and $30,000, and 7 percent exceeded $30,000.

Facility Characteristics

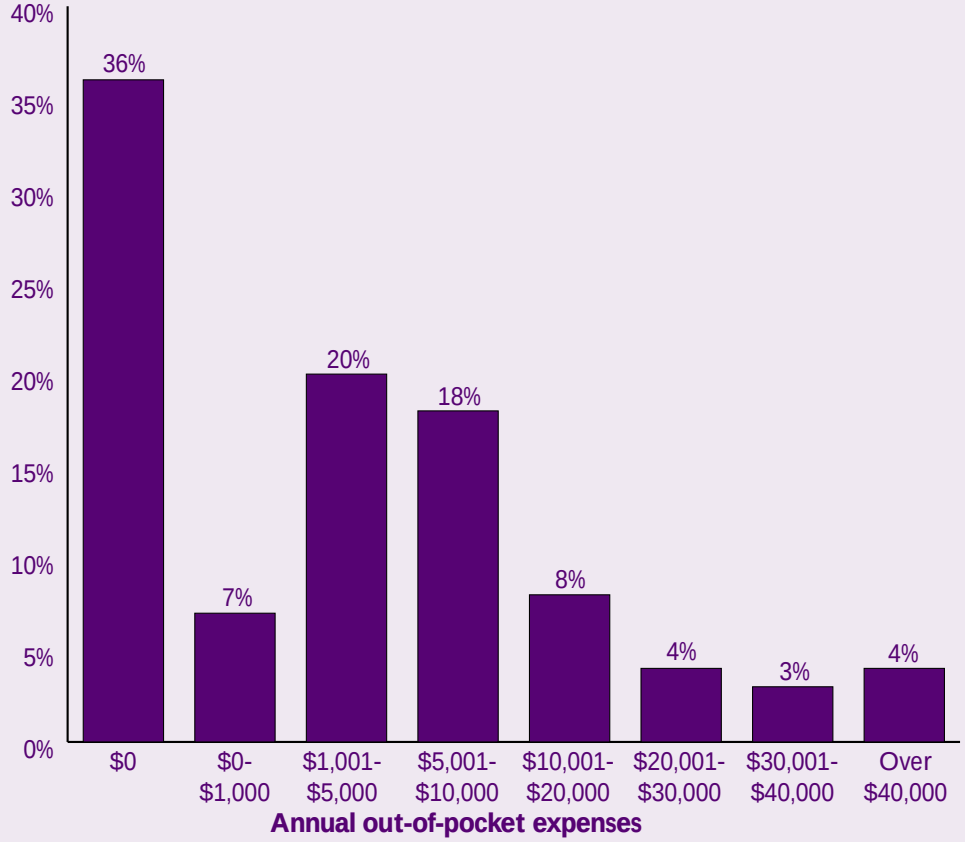
Estimates of average daily expenses indicate variations in nursing home rates by type of nursing home (Table 5). Individuals in hospital-based nursing homes had a higher daily expense ($212) than those in freestanding nursing homes ($111) or nursing homes with multiple levels of care ($102). In addition, residents in hospital-based facilities were more likely than residents in other types of nursing homes to rely on

Medicare (44 percent) and other (14 percent) sources of payment and less likely to have their expenses paid by Medicaid (19 percent) or out of pocket (17 percent). With respect to nursing home ownership, total annual expenses were highest in for-profit chain-affiliated nursing homes ($29 billion).

Total annual and average daily expenses also varied by nursing home certification status. As would be expected, residents in nursing homes certified by Medicaid had the largest proportion of their annual expenses paid for by Medicaid, whether solely Medicaid certified (54 percent) or dually certified for Medicaid and Medicare (48 percent). Residents of Medicare-only certified nursing homes had the highest daily expense ($233), but such payments represented only a small proportion of the Nation's total annual nursing home expenditures. For residents in noncertified nursing homes, the major payers were out of pocket and other source-of-payment categories. The other source-of-payment category consisted largely of Department of Veterans Affairs and health maintenance organization contractual payers.

With regard to bed size, residents in the smallest nursing homes, 3-74 beds, had a greater proportion of their annual expenses paid for by Medicare (37 percent) than residents in larger homes. Individuals residing in the remaining size categories had a greater proportion of their annual expenses paid for by Medicaid (from 43 to 54 percent) than residents in the smallest homes did. The greatest proportion of the $70 billion in annual expenses ($24 billion) was represented by residents in homes with 75-124 beds.

Figure 1. Percent distribution of nursing home residents by annual out-of-pocket expenses: United States, 1996



Source: Center for Cost and Financing Studies, Agency for Healthcare Research and Quality: Medical Expenditure Panel Survey Nursing Home Component, 1996.

There were substantial regional differences in expenses. Of all the regions, the West had the lowest total annual expenses ($12 billion), the lowest share paid by Medicaid (30 percent), and the highest share paid by Medicare (35 percent). Annual expenses were comparable for individuals in the remaining regions, but daily expenses ranged from a low of $97 in the South to a high of $151 in the West.

Residents in metropolitan areas had a higher average daily expense than those in less urbanized areas ($128 vs. $96), a greater proportion of annual expenses paid by Medicare (21 percent vs. 14 percent), and a lower proportion paid by Medicaid (42 percent vs. 51 percent).

Summary

MEPS NHC findings indicate that 1996 annual nursing home expenses per person with a nursing home stay averaged $22,561, for an average daily expense of $118. Total expenses for services in nursing homes amounted to about $70 billion. There was considerable variation in the expenses and sources of payment for different types of nursing home residents in different types of facilities.

Thirty-five percent of the 3,097,000 nursing home residents in 1996 remained in an institution for the entire year, paying an average of $12,001 per person out of pocket and incurring total expenses of $36,368 per year. Fifteen percent of residents were admitted and died in 1996. Their daily expense was $103 greater than the expense for those who remained in the nursing home the entire year, but their total expenses averaged only $9,457 for the year.

Average annual expenses were highest for women age 90 and over, Medicaid enrollees, residents with dementia and/or other mental disorders, residents with bowel incontinence (with or without urinary incontinence), and those who remained in the nursing home for the entire year. Annual expenditures were lowest for residents who were discharged from the nursing home during the year ($8,569).

Average daily expenses were in excess of $200 for admissions who died during 1996, admissions who were discharged during the year, and people residing in hospital-based homes or homes certified for Medicare only. Average expenses per day were less than $100 for residents with one ADL limitation, those in facilities certified only for Medicaid, and those in nursing homes located in the South and in nonmetropolitan areas.

Medicaid payments for nursing home care exceeded public payments from any other source, amounting to 44 percent of the national total and $18,584 (derived from Table 3) per Medicaid enrollee who used a nursing home in 1996. Medicaid enrollees represented 53 percent of all 1996 nursing home residents. Medicaid figured most importantly as a payment source for nursing home residents under age 65, for blacks, for those who remained in the nursing home the entire year, and for those with family income less than the poverty level.

While the Medicaid share of nursing home expenses was substantial, 30 percent of nursing home expenditures were covered by out-of-pocket payments. Private insurance contributions to nursing home care amounted to 4 percent of the total and were concentrated on residents admitted and discharged from the nursing home during the year (for whom they constituted 12 percent of total payments) and those with no ADL limitations (11 percent of total expenses). Nineteen percent of all nursing home users spent more than $10,000 out of pocket in 1996, and 7 percent spent more than $30,000.

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Table 1. Annual expenses of nursing home residents by institutional and vital status: United States, 1996

Institutional and vital status[a]	Nursing home residents in thousands	Mean annual expense per person	Mean expense per day	Source of payment				
				Medicaid	Medicare	Out of pocket	Private insurance	Other[b]
				Percent distribution				
Total	3,097	$22,561	$118	44	19	30	4	3
In nursing home on January 1, 1996								
Died by December 31	413	17,517	109	49	11	36	3	1
In institution all year	1,095	36,368	101	58	5	33	1	*3
Discharged during 1996	51	12,558	133	24	21	34	10	*11
Admitted to nursing home during 1996								
Died by December 31	468	9,457	204	8	55	25	9	*4
In institution on December 31	593	23,005	155	24	38	26	7	*4
Discharged during 1996	476	8,569	257	5	63	14	12	7

[a]Vital status by end of year.
[b]Other payers include Department of Veterans Affairs, health maintenance organizations, and other sources of payment.
*Relative standard error is equal to or greater than 30 percent.

Source: Center for Cost and Financing Studies, Agency for Healthcare Research and Quality: Medical Expenditure Panel Survey Nursing Home Component.

Table 2. Annual expenses of nursing home residents by selected resident characteristics: United States, 1996

Resident characteristic	Nursing home residents in thousands	Mean annual expense per person	Mean expense per day	Source of payment				
				Medicaid	Medicare	Out of pocket	Private insurance	Other[a]
				Percent distribution				
Total	3,097	$22,561	$118	44	19	30	4	3
Age in years								
Under 65	283	23,576	123	63	9	15	4	*8
65-69	164	20,116	127	44	28	16	*6	*5
70-74	342	20,953	125	43	23	25	*6	4
75-79	505	20,360	134	34	30	27	4	*6
80-84	638	21,757	120	42	22	30	3	*2
85-89	603	23,374	112	44	14	37	3	*2
90 and over	561	25,765	108	45	14	39	2	*0
Men	1,054	20,472	126	40	21	26	5	8
Under 65	160	23,642	129	55	*11	16	*5	*13
65-69	84	22,491	138	33	37	15	*8	*7
70-74	157	17,124	130	35	*23	23	*10	*10
75-79	193	18,691	139	33	31	23	*3	*9
80-84	204	21,285	128	38	24	31	4	*4
85-89	155	20,140	116	39	15	33	*5	*8
90 and over	101	21,258	102	46	10	42	2	*0
Women	2,042	23,639	115	46	18	32	3	*1
Under 65	123	23,491	115	75	6	15	4	*1
65-69	81	17,652	115	60	17	17	*3	*3
70-74	185	24,210	122	47	23	26	3	*1
75-79	312	21,392	131	34	29	29	4	*4
80-84	434	21,980	116	44	21	30	3	*2
85-89	448	24,496	110	46	13	38	2	*0
90 and over	460	26,753	109	45	14	38	2	*0
Marital status								
Married	729	19,771	137	34	28	26	7	*6
Not married	2,367	23,420	114	47	17	31	3	3
Racial/ethnic background								
White and other[b]	2,730	22,479	118	42	19	33	4	3
Black	255	24,253	117	66	13	12	*1	*7
Hispanic	111	20,685	134	51	31	12	*3	*4
Institutional status								
Resident on January 1, 1996	1,560	30,587	102	57	6	33	1	*3
Admitted in 1996	1,537	14,412	177	17	46	24	8	5

[a]Other payers include Department of Veterans Affairs, health maintenance organizations, and other sources of payment.
[b]Includes other racial/ethnic groups not shown separately.
*Relative standard error is equal to or greater than 30 percent.

Note: 0 indicates greater than zero but less than 0.5.

Source: Center for Cost and Financing Studies, Agency for Healthcare Research and Quality: Medical Expenditure Panel Survey Nursing Home Component.

Table 3. Annual expenses of nursing home residents by poverty level, home ownership, and Medicaid status: United States, 1996

Poverty level, home ownership, and Medicaid status	Nursing home residents in thousands	Mean annual expense per person	Mean expense per day	Source of payment				
				Medicaid	Medicare	Out of pocket	Private insurance	Other[a]
				Percent distribution				
Total	3,097	$22,561	$118	44	19	30	4	3
Poverty level status								
Less than poverty	723	24,060	103	67	10	19	1	*3
100 percent to less than 200 percent of poverty level	1,296	23,378	116	48	18	28	3	3
200 percent to less than 400 percent of poverty level	734	21,629	134	27	24	38	6	*5
400 percent of poverty level or more	343	18,310	149	5	32	54	6	*3
Owns home								
Yes	995	18,096	135	25	29	35	5	6
No	2,102	24,673	113	51	15	29	3	2
Medicaid enrollment in 1996								
Yes	1,648	26,549	103	70	9	18	1	1
No	1,449	18,026	158	0	35	50	8	8

[a]Other payers include Department of Veterans Affairs, health maintenance organizations, and other sources of payment.
*Relative standard error is equal to or greater than 30 percent.

Source: Center for Cost and Financing Studies, Agency for Healthcare Research and Quality: Medical Expenditure Panel Survey Nursing Home Component.

Table 4. Annual expenses of nursing home residents by functional and mental health status: United States, 1996

Functional and mental health status	Nursing home residents in thousands	Mean annual expense per person	Mean expense per day	Source of payment				
				Medicaid	Medicare	Out of pocket	Private insurance	Other[a]
				Percent distribution				
Total	3,097	$22,561	$118	44	19	30	4	3
Vital status at end of year								
Alive	2,215	26,259	116	46	17	30	3	3
Dead	882	13,274	132	34	28	32	5	2
Number of ADL limitations[b]								
0	288	13,170	141	29	26	22	*11	*12
1	188	22,190	99	49	7	35	*1	*8
2-3	377	22,046	103	48	13	34	2	*3
4	328	24,156	117	43	25	27	*2	*3
5	640	21,407	125	37	25	33	4	*2
6	1,276	25,053	121	48	17	30	4	2
Incontinence[c]								
No problem	1,829	20,118	121	38	24	30	4	4
Urinary incontinence only	267	25,329	108	47	10	39	2	*2
Bowel incontinence	1,000	26,288	117	52	14	29	3	3
Dementia[d] and/or other mental disorder[e]								
No mental disorder	1,593	18,951	129	36	29	27	5	*2
Dementia only	1,048	27,098	109	52	10	34	2	3
Other mental disorder only	455	24,747	116	46	15	29	3*	*7

[a]Other payers include Department of Veterans Affairs, health maintenance organizations, and other sources of payment.
[b]Receiving personal assistance with one or more of these activities of daily living (ADLs): dressing, bathing, eating, transferring from a bed or chair, mobility, and toileting.
[c]Has difficulty controlling bladder or bowel several times or more per week. Persons with both types of incontinence are included in the group with bowel incontinence.
[d]Includes Alzheimer's and other dementias.
[e]Includes at least one of the following: anxiety disorder, depression, manic depression, schizophrenia.
*Relative standard error is equal to or greater than 30 percent.

Source: Center for Cost and Financing Studies: Agency for Healthcare Research and Quality: Medical Expenditure Panel Survey Nursing Home Component.

Table 5. Annual expenses of nursing home residents by facility characteristics: United States, 1996

Facility characteristics	Number of days in millions	Annual expense in billions	Mean expense per day	Source of payment				
				Medicaid	Medicare	Out of pocket	Private insurance	Other[a]
				Percent distribution				
Total	592	$70	$118	44	19	30	4	3
Facility type								
Hospital based	48	10	212	19	44	17	6	*14
Nursing home with multiple levels of care	73	7	102	38	11	47	2	*2
Freestanding facility	471	52	111	50	15	31	3	1
Facility ownership								
For-profit independent	120	13	112	48	13	35	2	*1
For-profit chain	261	29	113	44	22	27	5	*2
Nonprofit independent	113	15	133	38	23	33	4	*3
Nonprofit chain	40	5	121	37	*20	41	*2	*0
Public	58	7	123	52	7	21	1	*18
Certification status								
Medicare and Medicaid	475	57	121	48	19	28	4	2
Medicare only	17	*4	233	*0	62	*28	*9	0
Medicaid only	80	6	78	54	*0	42	*0	*3
Noncertified	20	2	123	*4	*2	48	*1	45
Bed size of facility								
3-74	103	14	132	29	37	28	4	*1
75-124	219	24	110	43	16	35	4	*2
125-199	153	17	113	49	15	31	3	*2
200 or more	116	15	127	54	10	24	2	*9
Census Region								
Northeast	136	20	144	53	10	29	3	*5
Midwest	183	20	107	41	17	36	3	*2
South	195	19	97	47	19	28	3	*3
West	78	12	151	30	35	26	6	*3
Metropolitan statistical area (MSA)								
MSA	415	53	128	42	21	30	4	4
Non-MSA	177	17	96	51	14	31	3	*1

[a]Other payers include Department of Veterans Affairs, health maintenance organizations, and other sources of payment.
*Relative standard error is equal to or greater than 30 percent.

Note: 0 indicates greater than zero but less than 0.5.

Source: Center for Cost and Financing Studies, Agency for Healthcare Research and Quality: Medical Expenditure Panel Survey Nursing Home Component.

Technical Appendix

Data Sources and Methods of Estimation

The data in this report were obtained from a nationally representative sample of nursing homes from the Nursing Home Component (NHC) of the 1996 Medical Expenditure Panel Survey (MEPS). The sampling frame was derived from the updated 1991 National Health Provider Inventory. The NHC was primarily designed to provide unbiased national and regional estimates for the population in nursing homes, as well as estimates of these facilities and a range of their characteristics.

The sample was selected using a two-stage stratified probability design, with facility selection in the first stage. The second stage of selection consisted of a sample of residents as of January 1, 1996, and a rolling sample of persons admitted during the year (Bethel, Broene, and Sommers, 1998). Estimates in this report are based on 815 eligible responding facilities and 5,899 sample persons.

The MEPS NHC data analyzed here were collected in person during three rounds of data collection. A computer-assisted personal interview (CAPI) system was used for data collection. The entire three-round data collection effort took place over a $1\frac{1}{2}$ year period, with the reference period being January 1, 1996, to December 31, 1996 (Potter, 1998).

Facility data were obtained from a facility questionnaire during Round 1 of data collection. Respondents were facility administrators or designated staff. The facility questionnaire collected data on facility structure and characteristics (Potter, 1998).

The facility and community background sections were used to collect demographic information from records within the sampled nursing home, as well as from respondents in the nursing home or community. The facility background section was administered just once per person, during the round in which the person was sampled, while the community background section was administered in either Round 2 or 3 (Potter, 1998).

Most of the health status items collected in the nursing home were based on the Resident Assessment Form of the Health Care Financing Administration (HCFA), known as the minimum data set (MDS). The CAPI application collected the MDS information in a question format, with question wording, response categories, and definitions of concepts derived directly from the MDS. There are multiple versions of the MDS. MEPS health status questions were based on wording in Version 2 of the MDS. Health status items not based on the MDS were labeled as such so that interviewers could cue the respondent to check medical records to obtain the information (Potter, 1998).

The expenditures section of the person-level facility questionnaire collected data on the costs of nursing home care during 1996. The data collected included information on the facility's billing practices, such as the length of the billing period, the number of days billed for each billing period, and the rate or rates billed for a person's care. The section also included information, by billing period, on all payments received by the facility, the sources of payment for those services, and the amounts paid by each source of payment. Expenditure data were first collected in eligible nursing homes during Round 2 and collected again during Round 3. Typical respondents were facility billing office personnel, who referred to billing and payment records (Potter, 1998).

The MEPS estimate of national expenditures for services in nursing homes is $70 billion, considerably less than the $89 billion estimate for 1996 expenditures from HCFA's National Health Expenditures (NHE). The NHE figure includes approximately $1.5 billion in nonpatient revenues, including philanthropic expenditures, and $9 billion in Medicaid payments to intermediate care facilities for the mentally retarded (ICF-MR expenditures). These are excluded from the MEPS estimate of nursing home expenditures. Thus the NHE estimate most comparable to the MEPS estimate would be about $78.5 billion (includes $9.0 billion for hospital-based nursing homes from the hospital spending category of NHE), which is $8.5 billion more than the MEPS estimate (Levit, Lazenby, Braden, et al., 1997).

Additionally, the following are possible sources of the observed discrepancy in expenditure estimates.

- NHE estimates are facility-based estimates. If a facility is defined as providing nursing care, then all revenue/receipts to that facility are included in expenditure estimates. There is the possibility that expenditures for unlicensed nursing home beds (e.g., assisted living beds in an assisted living unit) contained within or associated with the nursing home

could be included in expenditure estimates. For MEPS, approximately 10 percent of beds contained within sampled nursing homes or associated with them as part of a larger facility were excluded from expenditure estimates because they were identified as unlicensed nursing home beds.

- The NHE are more inclusive than MEPS with respect to how a nursing home is defined. The following facilities were included in the NHE but not MEPS: establishments primarily engaged in providing some (but not continuous) nursing and/or health-related care, such as convalescent homes for psychiatric patients that have health care; convalescent homes with health care; domiciliary care with health care; personal care facilities with health care; personal care homes with health care; psychiatric patient convalescent homes; and rest homes with health care. NHE estimates do not provide expenditure totals for such facilities separately.
- MEPS excludes nursing homes with fewer than three beds, while NHE has no limitation because of the number of nursing home beds.
- MEPS estimates are based on 16,760 facilities, while NHE estimates are based on 18,600—an additional 1,840 facilities.

There are also differences in expenditure estimates methodology. The MEPS estimate of nursing home expenditures is based on information obtained from the billing records of each facility used by a sampled person. Total expenditures for each person and the amounts paid out of pocket and by third parties were obtained from these records. HCFA, in generating NHE estimates, uses information collected by the Census Bureau on State-level receipt/revenue for taxable and tax-exempt private nursing and personal care facilities from the 1992 Census of Service Industries (CSI). Expenditures for 1996 were generated from the Census Bureau's estimated annual growth in nursing and personal care facilities taxable and tax-exempt receipts/revenues from the Service Annual Survey. An estimate of expenditures for State and local government facilities is added to the estimated expenditures for private facilities. Expenditures for State and local government facilities were estimated from Bureau of Labor Statistics wage data for State and local government nursing homes. Government nursing home wages were inflated to revenues based on wage-to-revenue ratios for private nursing homes that were developed from data collected by the National Center for Health Statistics in the 1977 National Nursing Home Survey.

Facility Eligibility

Only nursing homes were eligible for inclusion in the MEPS NHC. To be included as a nursing home, a facility must have at least three beds and meet one of the following criteria:

- The facility or a distinct portion of the facility must be certified as a Medicare skilled nursing facility (SNF).
- The facility or a distinct portion of the facility must be certified as a Medicaid nursing facility (NF).
- The facility or a distinct portion of the facility must be licensed as a nursing home by the State health department or by some other State or Federal agency and provide onsite supervision by a registered nurse or licensed practical nurse 24 hours a day, 7 days a week (Bethel, Broene, and Sommers, 1998).

By this definition, all SNF- or NF-certified units of licensed hospitals are eligible for the sample, as are all Department of Veterans Affairs (VA) long-term care nursing units. In such cases, and in the case of retirement communities with nursing facilities, only the long-term care nursing unit(s) of the facility were eligible for inclusion in the sample. If a facility also contained a long-term care unit that provided assistance only with activities of daily living (e.g., a personal care unit) or provided nursing care at a level below that required to be classified as a nursing facility, that unit was excluded from the sample (Potter, 1998).

Resident Sample

To allow a chance of selection for all persons in this universe, two samples of persons were selected within each cooperating sampled facility: (1) a cross-sectional sample of persons who were residents on January 1, 1996 (current residents) and (2) a sample of persons admitted to the nursing home at any time during 1996 who had no prior admissions to an eligible nursing home during 1996 (first admissions). For details on sampling, refer to Bethel, Broene, and Sommers (1998).

During Round 1 the interviewer in each sampled facility compiled a list of current residents as of January 1, 1996. Within each facility, a systematic random sample of four current residents was drawn using the CAPI system. For Rounds 2 and 3, the interviewer compiled a list of first admissions. A systematic random sample of two first admissions was drawn for each round and facility.

For a sampled resident to be considered a respondent, the following questionnaires had to have been completed for him or her— the facility residence history questionnaire in the sampled facility in the round in which the person was first sampled, as well as at least three of the following questionnaires: health status, expenditures, prescribed medicines, and use of medical provider services.

Mean Expense Per Day and Annual Estimates

Expenditures for nursing home services, reported in Tables 1-5, refer to the facility charge for both basic (room and board) and ancillary (special supplies and services) services. These charges are limited by the amounts allowed by third-party payers such as Medicaid, Medicare, and private health insurers.

Missing daily basic expenditures were imputed for all billing periods in a facility by means of a weighted sequential hot-deck procedure. This procedure, which was employed for less than 5 percent of all billing periods in 1996, imputed data from individuals with expenditure information to individuals with missing information but similar characteristics. Groups of similar individuals were formed according to facility location and type, sources of payment, Medicaid and Medicare status, family income, and number of limitations in activities of daily living. Daily expenditures and sources of payment for persons missing data for some but not all billing periods in a facility were assigned values based on the available data for that person. Facilities without charges (Department of Veterans Affairs nursing homes) were assigned a facility-level charge based on information provided by the VA. The VA provided facility-level nursing home rates for all VA nursing homes within the United States. These rates were then matched with the small number of VA nursing homes that were sampled.

Definitions of Variables

Age

The age of the sample person as of January 1, 1996, was calculated from the date of birth (1996 minus year of birth) supplied by the respondent. If the date of birth was unknown, the respondent was asked to provide the age of the sample person. If the year of birth and age were both missing (three sample persons), the age of the sample person was imputed using a mean value imputation, cross-classified by sex and institutional status.

Marital Status

A constructed and imputed version of marital status at baseline was used for estimates. Baseline was measured at January 1, 1996, for current residents, and at the date of admission for persons sampled as an admission. Marital status was collapsed to married and not married (includes two sample persons less than 15 years of age). The marital status of sample persons with a value of "don't know" for marital status (less than 1 percent) was imputed to the modal value (not married).

Racial/Ethnic Background

Respondents were asked if the race of each resident was best described as American Indian, Alaska Native, Asian or Pacific Islander, black, white, or other. Race was unknown for eight sample persons; their race was imputed to the modal value (white). During variable construction and editing, the "other specified" text fields associated with an "other race" response were reviewed and recoded into existing categories of racial/ethnic background as appropriate. Ethnicity was unknown for less than 1 percent of the sample (39 sample persons). Missing values for these cases were imputed to a modal value (non-Hispanic). Estimates of racial/ethnic background were collapsed into three categories: white, black, and Hispanic. Other racial/ethnic groups are included in the white category rather than presented separately because of small sample size.

Income and Home Ownership

Information on income was collected in the income and assets section of the community questionnaire.

Income was constructed based on edited versions of the sample person's gross income and spouse's gross income (if the sample person was married). All missing values for gross household income were imputed. The imputation model for gross household income was run on all households with nonzero income levels. A natural logarithmic transformation of gross household income was used to reduce the influence of outliers. Hard boundary categories were used based on responses to a series of unfolding questions on income as a percent of the poverty level (based on marital status and age of the sample person) and Medicaid eligibility status. The soft boundaries used were marital status (married vs. not married), education (high school graduate vs. not), Census Region, age (less than 62 vs. 62 and over), race (white vs. not white), and sex, in that order. Almost 50 percent of the values for gross income were imputed.

Information on home ownership status at the date of interview was collected in the income and assets section of the community questionnaire as well. Additional information on home ownership was collected in the expenditure questionnaire and the background section of both the facility and community questionnaires. This additional information was used to fill in any missing values. The final edited version of home ownership reflects information from the four different sources. When home ownership was unknown, a value was imputed using a weighted sequential hot-deck procedure. Less than 15 percent of the values for home ownership were imputed.

The reference period for questions pertaining to income and home ownership was determined by the round in which the questionnaire was administered. This means that income and home ownership variables contain values representing two reference periods. For example, income refers to 1995 when the questionnaire was administered in Round 2 and 1996 when the questionnaire was administered in Round 3.

Poverty Status

Poverty level status was constructed from gross household income using poverty thresholds published annually by the U.S. Bureau of the Census. Poverty thresholds varied by family size (one vs. two persons) and age of householder (sample person 65 and over vs. under age 65). In the few instances where family size was greater that two, the poverty thresholds for family size equal to two were used. Since the reference period for income was determined by the round of interview, 1995 poverty thresholds were used for sample persons with responses in Round 2 and 1996 values were used for those with responses in Round 3.

Activities of Daily Living

Respondents were asked to indicate whether the sample person had limitations with personal care activities commonly known as activities of daily living (ADLs). Six activities were included: dressing, bathing, eating, transferring from a bed or chair, mobility, and toileting. Less than 1 percent of all sample persons were comatose and initially had all ADLs classified as "inapplicable." These cases, along with all cases for whom it was indicated that the "activity did not occur" (less than 2 percent of the total), were reclassified as having limitations with all ADLs. Persons with missing data (not more than 1 percent of the total sample for any ADL) were assumed to have no difficulty with activities and were reclassified as having no limitations.

Incontinence

Data on bladder and bowel control were collected from the MDS and refer to continence in the last 14 days. Residents were classified as incontinent if the response indicated that they were incontinent or frequently incontinent. Residents reported to be continent, usually continent, or occasionally incontinent were classified as having no incontinence. Responses for bladder and bowel control were collapsed into three categories: no incontinence; urinary incontinence only; and bowel incontinence, with or without urinary incontinence. Less than 1 percent of the sample total were comatose and initially classified as "inapplicable." These cases were reclassified as incontinent. Persons with missing data ("don't know") were assumed to have no difficulty with bowel and/or bladder control and were reclassified as continent.

Mental Conditions

A question regarding the sample person's diagnoses and conditions was presented in a list format similar to that used in the MDS assessment form. It included Alzheimer's disease; anxiety disorder; dementia, other

than Alzheimer's; depression; manic depression; and schizophrenia.

Facility Type

This variable, constructed from data from the facility questionnaire, defines the facility's organizational structure as one of three types:

- *Hospital-based nursing home.* This indicates that the sampled nursing home was part of a hospital or was a hospital-based Medicare SNF.
- *Nursing home with multiple levels of care.* This category includes continuing care retirement communities (CCRCs) and retirement centers that have, in addition to a nursing home or nursing home unit, independent living and/or personal care units. It also includes nursing homes that contain personal care units and non-hospital-based nursing homes with a separate unit in which personal care assistance is provided.
- *Freestanding facilities.* This category refers to nursing homes with only nursing home beds. It includes a small number of nursing homes (less than 1 percent) with an intermediate care unit for the mentally retarded (ICF-MR).

The order of priority for coding facility type followed the sequence listed above.

Facility Ownership

Respondents reported the ownership type that best described their facility (or larger part of the facility, if the sampled nursing home was part of a larger facility), as follows:

- For profit (i.e., individual, partnership, or corporation).
- Private nonprofit (e.g., religious group, nonprofit corporation).
- One of four types of public ownership—city/county government, State government, VA, or other Federal agency.

Respondents also reported whether their facility was part of a chain or group of nursing facilities operating under common management.

Facility Certification Status

Respondents were asked whether any unit in their facility or part of the larger facility (if the sampled nursing home was reported to be part of a larger facility) was certified by Medicare as an SNF and/or by Medicaid as an NF. For the purpose of this report, facilities were assigned to mutually exclusive categories based on their responses.

Facility Size

The size of the sampled nursing home was determined by the number of nursing beds regularly maintained for residents. Beds contained within the sampled nursing home but not licensed for nursing care were excluded. Unlicensed beds represented less than 2 percent of the beds in the sampled nursing homes. If the sampled nursing home was part of a larger facility, only the licensed nursing home beds were included.

Census Region

Sampled nursing homes or units were classified in one of four regions—Northeast, Midwest, South, and West—based on their geographic location according to the MEPS NHC sampling frame. These regions are defined by the U.S. Bureau of the Census.

Facility Location

A metropolitan statistical area (MSA) is defined as including (1) at least one city with 50,000 or more inhabitants or (2) a Census Bureau-defined urbanized area of at least 50,000 inhabitants and a total metropolitan population of at least 100,000 (75,000 in New England) (U.S. Bureau of the Census, 1996). MSA data were missing for 14 facilities; an MSA/non-MSA determination was made after a review of the county's population density according to the 1990 census.

Reliability and Standard Error Estimates

Since the statistics presented in this report are based on a sample, they may differ somewhat from the figures that would have been obtained if a complete census had been taken. This potential difference between sample

results and a complete count is the sampling error of the estimate.

The chance that an estimate from the sample would differ from the value for a complete census by less than one standard error is about 68 out of 100. The chance that the difference between the sample estimate and a complete census would be less than twice the standard error is about 95 out of 100.

Tests of statistical significance were used to determine whether differences between estimates exist at specified levels of confidence or whether they simply occurred by chance. Differences were tested using Z-scores having asymptotic normal properties, based on the rounded figures at the 0.05 level of significance.

Estimates with a relative standard error greater than 30 percent are marked with a footnote. Such estimates cannot be assumed to be reliable.

Rounding

Estimates of percentages presented in the tables have been rounded to the nearest percent. The rounded estimates, including those underlying the standard errors, will not always add to 100 percent or the full total. To avoid conveying a false sense of precision, estimates of the number of nursing home users have been rounded to the nearest thousand, and estimates pertaining to expenditures have been rounded to the nearest dollar.

Standard Errors

The standard errors in this report are based on estimates of standard errors derived using the Taylor series linearization method to account for the complex survey design. The standard error estimates were computed using SUDAAN (Shah, Barnwell, and Bieler, 1995). The direct estimates of the standard errors for the estimates in Tables 1-5 are provided in Tables A-E, respectively.

For example, the estimate of $22,561 for the mean annual expenditure per person (Table 1) has an estimated standard error of $498 (Table A). The estimate that 67 percent of expenditures for persons with an income of less than poverty were paid for by Medicaid (Table 3) has an estimated standard error of 1.6 percent (Table C).

Table A. Standard errors for annual expenses of nursing home residents by institutional and vital status: United States, 1996

Corresponds to Table 1

Institutional and vital status[a]	Nursing home residents in thousands	Mean annual expense per person	Mean expense per day	Source of payment				
				Medicaid	Medicare	Out of pocket	Private insurance	Other[b]
				Percent distribution				
Total	96	$498	$2	1.4	1.6	1.1	0.4	0.8
In nursing home on January 1, 1996								
Died by December 31	14	501	2	1.8	1.1	1.7	0.6	0.4
In institution all year	18	533	2	1.3	0.9	1.2	0.2	*0.9
Discharged during 1996	5	1,322	10	5.2	4.4	6.0	*3.1	*6.4
Admitted to nursing home during 1996								
Died by December 31	37	743	17	1.3	5.7	4.0	1.7	*1.4
In institution on December 31	30	880	6	2.1	3.6	2.2	1.3	*1.6
Discharged during 1996	56	927	26	1.2	3.8	3.7	2.8	*2.7

[a]Vital status by end of year.
[b]Other payers include Department of Veterans Affairs, health maintenance organizations, and other sources of payment.
*Relative standard error is equal to or greater than 30 percent.

Source: Center for Cost and Financing Studies, Agency for Healthcare Research and Quality: Medical Expenditure Panel Survey Nursing Home Component.

Table B. Standard errors for annual expenses of nursing home residents by selected resident characteristics: United States, 1996

Corresponds to Table 2

Resident characteristic	Nursing home residents in thousands	Mean annual expense per person	Mean expense per day	Source of payment				
				Medicaid	Medicare	Out of pocket	Private insurance	Other[a]
				Percent distribution				
Total	96	$498	$2	1.4	1.7	1.1	0.8	0.8
Age in years								
Under 65	22	1,400	6	3.8	2.6	1.8	1.0	*3.7
65-69	15	1,737	13	5.9	7.1	2.6	*3.0	*2.0
70-74	27	1,366	6	3.0	3.8	2.3	*2.1	1.2
75-79	40	986	7	2.9	4.6	2.5	0.7	*2.2
80-84	35	940	3	2.2	2.8	1.7	0.6	*0.8
85-89	23	743	2	1.7	1.2	1.6	0.8	*1.1
90 and over	23	855	4	2.7	3.4	2.3	0.5	*0.1
Men	60	923	5	2.3	3.1	1.7	0.9	2.1
Under 65	15	2,160	8	5.2	*4.3	2.8	*1.4	*6.1
65-69	11	2,558	23	7.6	10.6	4.1	*4.9	*3.2
70-74	23	1,945	13	5.4	*8.9	3.8	*5.3	*2.9
75-79	26	1,528	12	4.4	7.4	4.2	*1.0	*2.8
80-84	15	1,589	8	3.6	5.0	3.1	0.8	*1.7
85-89	14	1,684	5	3.8	2.6	3.3	*2.6	*4.6
90 and over	10	1,824	4	3.6	1.8	3.9	0.6	*0.2
Women	66	492	2	1.4	1.5	1.2	0.3	*0.5
Under 65	11	2,129	7	3.1	1.5	2.4	1.0	*0.9
65-69	10	1,860	6	4.5	3.3	2.6	*1.8	*2.2
70-74	13	1,367	5	3.5	3.2	2.7	0.6	*0.8
75-79	26	1,306	6	3.0	4.0	2.7	0.8	*2.9
80-84	27	1,151	3	2.6	3.1	2.0	0.7	*0.9
85-89	19	788	2	1.8	1.3	1.7	0.6	*0.1
90 and over	21	916	4	3.0	3.9	2.6	0.5	*0.1
Marital status								
Married	53	1,021	7	2.6	3.5	2.0	1.1	*1.7
Not married	67	470	2	1.4	1.5	1.1	0.3	0.7
Racial/ethnic background								
White and other[b]	92	508	3	1.4	1.8	1.2	0.4	0.7
Black	22	1,306	5	3.4	1.9	1.2	*0.5	*3.6
Hispanic	17	1,829	12	5.5	5.9	2.5	*1.3	*2.2
Institutional status								
Resident on January 1, 1996	16	456	1	1.2	0.8	1.1	0.2	*0.8
Admitted in 1996	94	548	7	1.5	2.7	1.8	1.0	1.3

[a]Other payers include Department of Veterans Affairs, health maintenance organizations, and other sources of payment.

[b]Includes other racial/ethnic groups not shown separately.

*Relative standard error is equal to or greater than 30 percent.

Source: Center for Cost and Financing Studies, Agency for Healthcare Research and Quality: Medical Expenditure Panel Survey Nursing Home Component.

Table C. Standard errors for annual expenses of nursing home residents by poverty level, home ownership, and Medicaid status: United States, 1996

Corresponds to Table 3

Poverty level and Medicaid status	Nursing home residents in thousands	Mean annual expense per person	Mean expense per day	Source of payment				
				Medicaid	Medicare	Out of pocket	Private insurance	Other[a]
				Percent distribution				
Total	96	$498	$2	1.4	1.7	1.1	0.8	0.8
Poverty level status								
Less than poverty	25	637	2	1.6	1.1	1.0	0.3	*1.2
100 percent to less than 200 percent of poverty level	41	651	2	1.6	1.8	1.1	0.4	0.8
200 percent to less than 400 percent of poverty level	35	962	4	1.8	3.0	2.2	1.2	*1.5
400 percent of poverty level or more	40	1,471	11	1.2	6.7	5.7	1.5	*1.5
Own home								
Yes	59	808	5	1.6	3.0	2.0	0.8	1.8
No	54	485	2	1.5	1.5	1.1	0.4	0.5
Medicaid enrollment in 1996								
Yes	35	458	1	0.8	0.7	0.5	0.2	0.2
No	94	779	7	0.0	3.3	3.2	0.9	2.0

[a]Other payers include Department of Veterans Affairs, health maintenance organizations, and other sources of payment.
*Relative standard error is equal to or greater than 30 percent.

Source: Center for Cost and Financing Studies, Agency for Healthcare Research and Quality: Medical Expenditure Panel Survey Nursing Home Component.

Table D. Standard errors for annual expenses of nursing home residents by functional and mental health status: United States, 1996

Corresponds to Table 4

Functional and mental health status	Nursing home residents in thousands	Mean annual expense per person	Mean expense per day	Source of payment				
				Medicaid	Medicare	Out of pocket	Private insurance	Other[a]
				Percent distribution				
Total	96	$498	$2	1.4	1.7	1.1	0.8	0.8
Vital status at end of year								
Alive	71	598	2	1.5	1.6	1.2	0.4	0.9
Dead	40	470	5	2.0	3.2	2.0	0.8	0.6
Number of ADL limitations[b]								
0	36	1,545	14	4.6	5.5	3.6	*3.9	*5.9
1	14	1,351	3	3.1	1.2	2.9	*0.4	*3.3
2-3	19	995	3	2.0	2.2	2.1	0.5	*1.1
4	21	1,467	7	4.2	5.9	2.8	*0.6	*1.1
5	37	757	4	2.2	3.3	2.1	0.5	*0.6
6	39	580	3	1.7	1.7	1.3	0.5	0.6
Incontinence[c]								
No problem	89	603	3	1.7	2.5	1.5	0.6	1.1
Urinary incontinence only	14	891	2	2.3	1.1	2.1	0.4	*0.8
Bowel incontinence	32	623	3	1.6	1.5	1.2	0.6	0.6
Dementia[d] and/or other mental disorder[e]								
No mental disorder	87	630	4	1.9	3.1	1.6	0.7	*0.8
Dementia only	25	551	2	1.3	0.7	1.2	0.3	0.7
Other mental disorder only	21	947	4	2.4	1.8	1.8	*1.3	*2.8

[a]Other payers include Department of Veterans Affairs, health maintenance organizations, and other sources of payment.
[b]Receiving personal assistance with one or more of these activities of daily living (ADLs): dressing, bathing, eating, transferring from a bed or chair, mobility, and toileting.
[c]Has difficulty controlling bladder or bowel several times or more per week. Persons with both types of incontinence are included in the group with bowel incontinence.
[d]Includes Alzheimer's and other dementias.
[e]Includes at least one of the following: anxiety disorder, depression, manic depression, schizophrenia.
*Relative standard error is equal to or greater than 30 percent.

Source: Center for Cost and Financing Studies, Agency for Healthcare Research and Quality: Medical Expenditure Panel Survey Nursing Home Component.

Table E. Standard errors for annual expenses of nursing home residents by facility characteristics: United States, 1996

Corresponds to Table 5

Facility characteristics	Number of days in millions	Mean annual expenses in billions	Mean expense per day	Source of payment				
				Medicaid	Medicare	Out of pocket	Private insurance	Other[a]
				Percent distribution				
Total	8	$2	$2	1.4	1.7	1.1	0.8	0.8
Facility type								
Hospital based	5	1	21	4.1	7.0	3.2	1.5	*5.1
Nursing home with multiple levels of care	7	1	3	2.9	1.6	2.9	0.5	*1.4
Freestanding facility	10	1	2	1.2	1.1	1.0	0.4	0.3
Facility ownership								
For-profit independent	9	1	5	2.8	3.1	2.4	0.6	*0.3
For-profit chain	11	2	4	2.1	2.5	1.5	0.7	*0.5
Nonprofit independent	9	2	7	3.7	5.0	3.0	0.9	*1.5
Nonprofit chain	5	1	9	5.2	*6.3	5.0	*0.8	*0.2
Public	6	1	8	4.8	1.7	2.7	0.4	*6.1
Certification status								
Medicare and Medicaid	11	2	2	1.4	1.5	1.0	0.4	0.5
Medicare only	4	*1	50	*0.3	9.4	*9.8	*3.1	0.0
Medicaid only	7	1	2	2.4	*0.2	2.4	*0.0	*1.8
Noncertified	4	1	16	*2.7	*1.3	11.0	*0.8	12.0
Bed size of facility								
3-74	9	2	11	3.6	5.8	3.6	1.2	*0.8
75-124	10	1	2	1.6	1.2	1.5	0.7	*0.9
125-199	10	1	3	1.8	1.3	1.5	0.5	*0.8
200 or more	9	1	5	3.0	1.1	2.0	0.5	*3.1
Census Region								
Northeast	9	1	3	2.4	1.1	2.1	0.7	*2.2
Midwest	9	1	3	2.4	3.0	2.0	0.5	*1.1
South	11	1	3	2.2	2.5	1.6	0.6	*1.1
West	6	1	12	3.8	5.5	3.2	1.4	*1.3
Metropolitan statistical area (MSA)								
MSA	12	2	3	1.7	2.1	1.4	0.4	1.0
Non-MSA	10	1	4	2.4	2.0	1.3	0.9	*0.2

[a]Other payers include Department of Veterans Affairs, health maintenance organizations, and other sources of payment.
*Relative standard error is equal to or greater than 30 percent.

Source: Center for Costs and Financing Studies, Agency for Healthcare Research and Quality: Medical Expenditure Panel Survey Nursing Home Component.

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