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Effects of the Prospective Payment System on Nursing Homes

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This report presents statistics on the utilization of non-Federal short-stay hospitals and nursing homes by persons aged 65 years and over. Estimates are based on data collected in the 1982-85 National Hospital Discharge Surveys and the 1977 and 1985 National Nursing Home Surveys. Measurements of hospital utilization are by frequency, percent, and average length of stay from 1982 through 1985. Nursing home use is examined by demographic characteristics, functional status in the activities of daily living, and diagnosis.

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Symbols

- - -	Data not available
. . .	Category not applicable
-	Quantity zero
0.0	Quantity more than zero but less than 0.05
Z	Quantity more than zero but less than 500 where numbers are rounded to thousands
*	Figure does not meet standard of reliability or precision
#	Figure suppressed to comply with confidentiality requirements

Effects of the Prospective Payment System on Nursing Homes

by Esther Hing, Division of Health Care Statistics

Introduction

Background

Medicare is a federally administered health insurance program for persons aged 65 years and over and for disabled persons who are eligible for benefits. Medicare's hospital insurance pays for medically necessary inpatient hospital care and, after a hospital stay, for inpatient care in a skilled nursing facility and for home care services in the home. Implementation of the Medicare program in July 1966 provided greater access to inpatient care for the majority of elderly individuals (Lubitz and Deacon, 1982).

Medicare costs for inpatient hospital care have continued to increase since the onset of the program. In an attempt to control the growth of Medicare hospital costs, the Health Care Financing Administration (HCFA) changed the basis of hospital reimbursement in 1983. Under the Tax Equity and Fiscal Responsibility Act of 1983, hospitals were reimbursed for inpatient care for Medicare patients based on a prospective payment system (PPS) rather than retrospectively, as was done previously. Under this system, hospitals are reimbursed a preestablished amount based on the diagnosis-related group (DRG) to which a patient's illness is assigned. Diagnosis-related groups are mutually exclusive categories of conditions and treatments used to classify patients into groups that are clinically coherent and homogeneous with respect to resource use.

The PPS using DRG's was implemented on October 1, 1983. Individual hospitals were started in the system beginning with their first fiscal year after this date. By the end of September 1984, virtually 100 percent of hospitals subject to this new payment system were operating under PPS. Hospitals in Maryland, Massachusetts, New Jersey, and New York were waived from inclusion in PPS from its inception, because they were participating in demonstrations of other payment systems. Waivers for New York and Massachusetts ended in fiscal year 1986, and Maryland and New Jersey currently retain waiver status.

Under PPS, hospitals earn a profit when their costs fall below the prospective payment per case or absorb a loss when their costs exceed the prospective payment. Therefore, there are strong incentives for hospitals to limit costs incurred by Medicare patients by controlling the amount of services provided or by limiting the length of stay.

The effects of this new system were highly visible. During the first year of PPS, the decrease in hospital length of stay was more pronounced than had been projected, while admission rates fell. Supply capacity was also affected: The number of short-stay hospital beds decreased, and the occupancy rate decreased from 73.7 percent in fiscal year 1983 to 67.7 percent in fiscal year 1984 (AHA, 1984). At the same time, hospital profits increased during the first year of PPS, primarily because of the reduced length of stay and associated cost reductions (Guterman and Dobson, 1986).

Because PPS gives hospitals strong incentives to reduce patient length of stay, an increase in the rate of transfers to long-term care providers is expected (Guterman and Dobson, 1986; Lave, 1985). Another effect of interest to researchers is the "sicker and quicker" issue. According to Eggers (1987), "Concerns have been raised that shorter lengths of stay (quicker) will lead to patients being discharged in a less stable medical condition (sicker)." This may also be manifested in changes in outcome measures, such as mortality and rehospitalization rates.

This report examines the impact of PPS on nursing home care by presenting estimates of the numbers of elderly patients transferred from hospitals to nursing homes and other long-term care institutions. Data presented are from the National Hospital Discharge Survey (NHDS) and the current resident and discharged resident surveys of the National Nursing Home Survey (NNHS). Viewed together, estimates from these nationally representative surveys provide a more complete description of the changes in nursing home utilization that have taken place since the introduction of PPS than have previously been available.

Sources and limitations of data

The NHDS and the current and discharged resident surveys of the NNHS are nationwide sample surveys of hospital discharges and nursing home patients, respectively, conducted by the National Center for Health Statistics (NCHS). The NHDS is a continuous survey of patients discharged from noninstitutional general and specialty hospitals. The NHDS obtains its information directly from hospital records of inpatients discharged from short-stay

hospitals, exclusive of Federal hospitals, located throughout the 50 States and the District of Columbia. Information is abstracted from the face sheets of a sample of inpatient records in a sample of hospitals. For example, in 1985, 414 hospitals participated in the survey, submitting approximately 194,000 abstracts; and in 1982, 426 hospitals took part in the survey, supplying about 214,000 abstracts. In this report, data from the 1982–85 NHDS are presented for patients 65 years of age and over—the patients most affected by changes in the Medicare system.

Data on nursing home residents are from the current resident surveys of the 1977 and 1985 NNHS. The NNHS is a nationwide sample survey of nursing homes and their residents, discharges, and staff. The scope of the NNHS encompasses all types of nursing homes, including personal care and domiciliary care homes, in the conterminous United States. The sample of current residents in the 1985 NNHS consisted of 5,243 residents in the 1,079 nursing homes participating in the survey; the sample of current residents in the 1977 NNHS consisted of 7,033 residents in 1,451 participating nursing homes. Residents included in the 1985 and 1977 NNHS were those on the nursing home's roster the night before data collection began. Data were collected by interviewing knowledgeable nursing home staff members, who referred to the residents' medical records when necessary. In this report, data from the current resident survey of the NNHS are presented on current residents aged 65 years and over at admission entering nursing homes in 1977 and 1985, according to whether or not they were admitted from short-stay hospitals.

Data presented on nursing home discharges are from the 1977 and 1985 NNHS. Estimates of discharges from the 1977 and 1985 NNHS are based on samples of 5,142 and 6,023 discharges, respectively, from participating nursing homes. The 1985 survey covered all persons discharged from 12 months prior to the survey date to the day immediately before the survey date. Thus the discharge sample was composed of persons discharged from the sample nursing homes from August 1984 through January 1986. (The survey was conducted from August 1985 through January 1986.) The reference period for discharges in the 1977 NNHS was calendar year 1976. For both survey years, data were collected by interviewing nursing home staff, who referred to the discharged resident's medical record. For convenience, the terms "discharges" and "discharged residents" are used interchangeably in this report. Estimates from the 1985 discharged resident survey are comparable to the 1985 current resident estimates in that all discharges aged 65 years and over transferred from short-stay hospitals in 1985 or later are examined. Data from these two NNHS patient samples, together with data from the NHDS, give a more complete description of the population aged 65 years and over moving from hospitals to nursing homes than if only one of these surveys is examined.

A primary difference between the NHDS and NNHS discharge data and the current resident data from the NNHS is that the discharge data reflect annual discharge events (hospital or nursing home discharges) rather than cross-sectional (point) estimates of the number of patients in nursing homes on any given day during the survey period. Sampled patients who were discharged more than once during a calendar year were included in the discharge samples as multiple discharges. In contrast, the current resident sample from the NNHS reflects patients concurrently (at the time of the survey) residing in the nursing home. Because the current resident sample is selected from all patients on the facility roster the night before the survey, however, the data tend to over-represent residents with long nursing home stays and to under-represent residents with short stays. More details on the survey methodology of the NHDS and the NNHS are presented in appendix I.

In appendix II, definitions of terms used in this report are presented. Reference to definitions is essential to the interpretation of the data.

In this report, two types of morbidity rate are presented: crude rates and age-adjusted rates. The method of computing age-adjusted rates is found in appendix III; appendix IV contains a brief discussion of sampling errors for estimates that were not age-adjusted.

For the rates that were not age-adjusted, terms such as "similar" and "the same" mean that there is no statistically significant difference between the rates being compared. Terms such as "greater than" or "less than" indicate that the difference is statistically significant. Lack of comment regarding the difference between any two statistics does not mean that the difference was tested and found not to be significant. For more details on statistical tests performed, see appendix IV.

Because the age distribution of nursing home residents in 1985 differs from that of nursing home residents in 1977, this report contains some age-adjusted rates. For example, the proportion of residents aged 85 years and over increased from 35 percent in 1977 to 40 percent in 1985 (NCHS, 1989). Use of age-adjusted rates assumes identical age distributions of all groups, making age-adjusted rates useful when examining relationships among groups with divergent age distributions. The unadjusted (crude) rates, however, should be quoted rather than the age-adjusted ones. References to rates in this report are to the unadjusted ones unless otherwise stated.

Hospital use by elderly patients discharged to long-term care institutions: 1982–85

Between 1982 and 1985, there were nationwide declines in hospital discharge rates and length of stay according to data from two surveys conducted by NCHS: the National Health Interview Survey (NHIS) and the NHDS (NCHS, 1987a). Declines in the hospital discharge rate occurred for all four major age groups and both sexes. Hospital discharge rates for the elderly decreased 10 to 12 percent between 1983 and 1985, and the average length of stay for the elderly decreased 11 to 14 percent between 1982 and 1985, according to data from the NHIS and the NHDS (NCHS, 1987a).

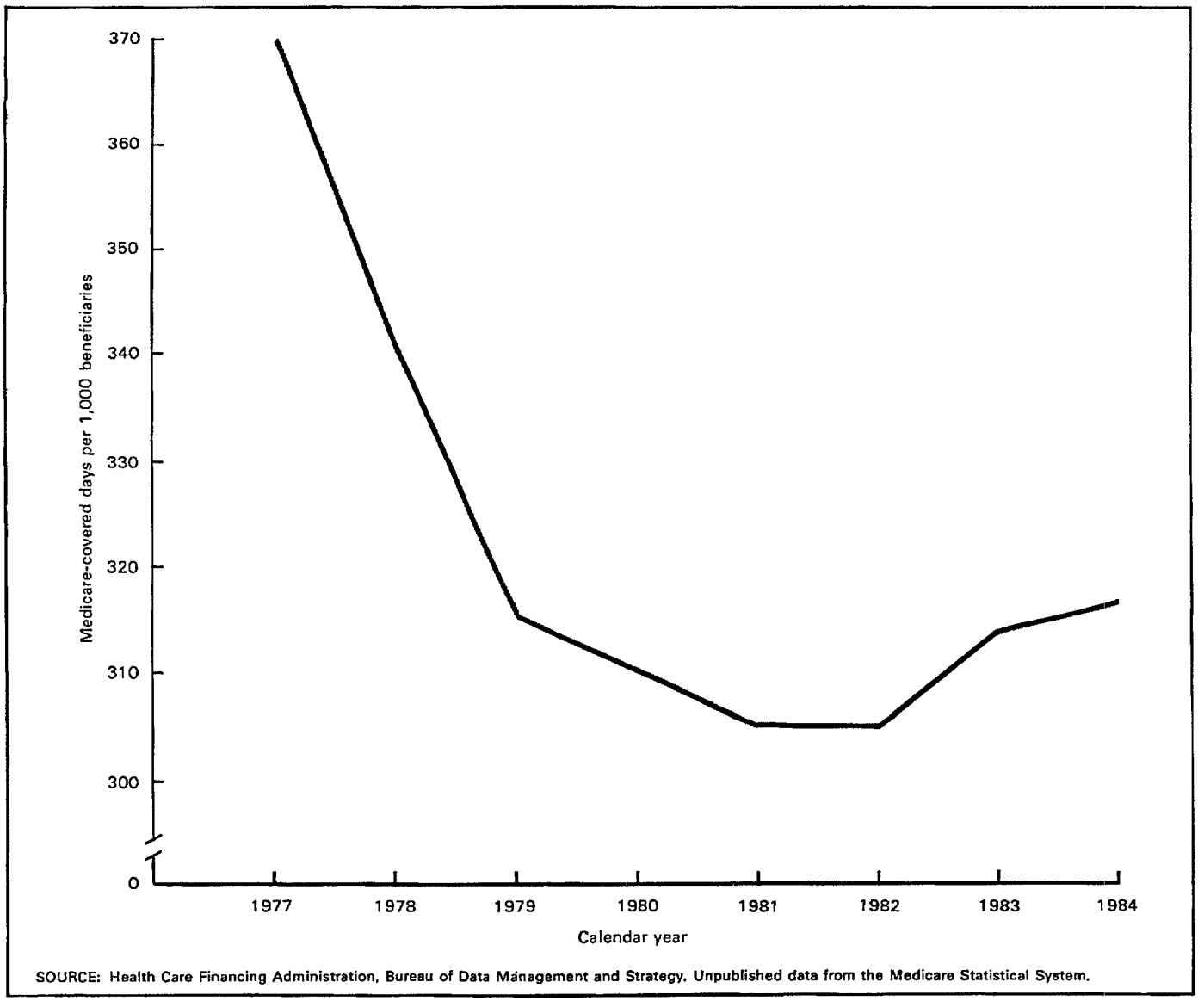
Table 1 shows that between 1982 and 1985, the number of elderly discharges from hospitals remained constant at about 11 million. The number of elderly patients discharged to long-term care institutions, however, increased 36 percent between 1982 and 1985, and the percent of elderly discharges transferred to long-term care institutions also increased significantly during the same period (from 8 percent in 1982 to 11 percent in 1985). Medicare program statistics show similar trends. Between 1981 and 1985 admissions to skilled nursing facilities (SNF's) per 1,000 Medicare enrollees increased from 9.6 to 11.8 (Guterman et al., 1988). The number of SNF days per 1,000 enrollees also increased between 1982 and 1984 (figure 1). These findings confirm a tendency under PPS for the demand for long-term care services to increase as had been predicted (Meiners and Coffey, 1985; Guterman and Dobson, 1986; Lave, 1985).

With the exception of the discharge status categories of "Alive, disposition not stated" and "Transferred to another short-stay hospital," the percent of elderly discharges in the remaining discharge status categories remained the same between 1982 and 1985. The percent of elderly patients discharged alive with unknown dispositions decreased 60 percent between 1982 and 1985. Although it is possible that the change in percent transferred to long-term care institutions after the start of PPS is merely a reflection of better reporting of discharge status by hospitals, Medicare statistics suggest that the increase is real. Furthermore, the reduction in percent of elderly live discharges with unknown disposition may reflect built-in incentives for hospital management efficiency under PPS. According to Guterman and Dobson (1986), and Alsofrom (1983), improvements in hospital management and hospital administrative data systems are some of the expected outcomes of PPS. The percent of elderly patients transferred to another short-stay hospital increased from 2 percent in 1982 to 3 percent in 1985.

Table 1 also shows the average length of stay for elderly patients, by discharge status, between 1982 and 1985. Overall, the average length of stay declined 14 percent during this time for elderly patients discharged from hospitals. This decline primarily reflects the reduction in length of stay for elderly patients routinely discharged home, transferred to long-term care institutions, or discharged dead. Differences in average lengths of stay for the remaining discharge status categories between 1982 and 1985 were not statistically significant. The length of stay for elderly patients routinely discharged home decreased 22 percent between 1982 and 1985, and the declines in length of stay for elderly patients transferred to a long-term care institution and for those discharged dead were 18 and 12 percent, respectively. Despite the dramatic decline in length of hospital stay between 1982 and 1985, elderly patients transferred to long-term care institutions tended to have the longest hospital stays of the discharge status categories shown in table 1. In 1985, the average length of stay for elderly patients transferred to long-term care institutions was 12.9 days, compared with 5.8 to 11.5 days for the remaining discharge status categories. Elderly residents discharged dead (11.5 days) and those transferred to another short-stay hospital (10.2 days) had relatively long stays on the average, but not as long as for those transferred to long-term care institutions. Elderly patients who left against medical advice (5.8 days) and those routinely discharged home (7.8 days) tended to have the shortest average hospital stays.

The tendency of elderly patients transferred to long-term care institutions to have longer hospital stays than other patients was also noted by Meiners and Coffey (1985). In their study of discharges from Maryland hospitals, they found that patients referred to long-term care services tended to stay longer than other patients within the same DRG category.

Table 2 shows the number of discharges, percent distribution, and average length of stay for the 20 most frequent DRG's for elderly patients transferred to long-term care institutions in 1985. The most common DRG for elderly patients transferred to long-term care institutions was "specific cerebrovascular disorders except transient ischemic attack," followed by "simple pneumonia and pleurisy, age 70 or over, and/or substantial comorbidity and



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

Figure 1. Medicare-covered days per 1,000 beneficiaries in skilled nursing facilities by year: United States, 1977–84

complication," "hip and femur procedures except major joint, age 70 or over, and/or substantial comorbidity and complication," and "heart failure and shock." These top four DRG's were also among the top four DRG's for discharges to nursing homes in Maryland noted by Meiners and Coffey. Together, the 20 DRG's presented in table 2 account for 56 percent of all DRG's for the 1.2 million elderly patients discharged to long-term care institutions in 1985.

For purposes of comparison, table 3 presents the 20 most frequent DRG's for elderly patients routinely discharged home. Although many of the DRG's for elderly patients discharged home also were common to elderly patients transferred to long-term care institutions, the rankings varied for these two types of discharges. For example, the top three DRG's for elderly patients transferred to long-term care institutions—"specific cerebrovascular disorders except transient ischemic attack," "simple pneumonia and pleurisy, age 70 or over, and/or substantial comorbidity and complication," and "hip and femur procedures, except major joint, age 70 or over, and/or substantial comorbidity and complication"—were ranked 7th, 4th, and 31st, respectively, for elderly patients discharged home (table 4). Other differences in DRG's between these two types of discharges are the presence among long-term care transferees of DRG categories that reflect mental disorders and behavioral problems: "organic disturbances and mental retardation" and "psychoses." These two DRG's were absent from the top 20 DRG's for elderly patients discharged home. Another difference in DRG's for these two types of discharges is the greater diversity of DRG's among elderly patients discharged home. Although the top 20 DRG's for elderly patients discharged to long-term care institutions applied to 56 percent of all these patients, the

top 20 DRG's for elderly patients discharged home accounted for only 43 percent.

Table 4 shows the average lengths of stay for elderly patients transferred to long-term care institutions and for those discharged home, according to the top 15 DRG's for elderly patients transferred to long-term care institutions. With the exception of the DRG categories "hip and femur procedures, except major joint, age 70 or over, and/or substantial comorbidity and complication," "major joint procedures," "septicemia, age 18 or over," and "gastrointestinal hemorrhage, age 70 or over, and/or substantial comorbidity and complication," the average length of stay was longer for elderly patients discharged to long-term care institutions than for elderly patients discharged home within the same DRG category. For example, stroke patients within the DRG category "specific cerebrovascular disorders except transient ischemic attack" transferred to long-term care institutions had longer average hospital stays (15.0 days) than did stroke patients with the same DRG who were discharged home (11.6 days). Similarly, for elderly patients within the DRG category "heart failure and shock," there was a difference of 4.5 days in the average length of stay between elderly patients discharged to long-term care institutions and elderly patients discharged home. These findings are similar to those reported earlier for Maryland hospital discharges by Meiners and Coffey.

The difference in length of stay between discharges to long-term care institutions and discharges home may be influenced by the seriousness of the patient's medical condition that is not reflected in the assigned DRG category or by the rate of supply (specifically, undersupply) of long-term care services. If the undersupply of long-term care services is in fact responsible for the backlogging of hospital patients and the difference in length of stay for these two types of discharges, it is a problem that preceded the introduction of PPS (Feder and Scanlon, 1982; Connor and Green, 1983).

The data presented thus far are national estimates that mask certain differences by reimbursement systems. During the period 1982 to 1985, not all Medicare-participating hospitals were operating under PPS. Hospitals in four States (Maryland, Massachusetts, New Jersey, and New York) were waived from PPS because they were participating in other payment systems during that time. To show how hospitals operating under PPS differed from hospitals operating under other payment systems, table A presents the Medicare average length of stay for waiver States (the four States mentioned above) and PPS States (all other States) for 1982 through 1985. During this period, the Medicare average length of stay was consistently longer in the waiver States (11.9 to 13.6 days on the average) than in the PPS States (7.9 to 9.8 days on the average). This is in part due to the historically longer hospital stays in the Northeast—which includes three of the waiver States (Massachusetts, New Jersey, and New York)—than in the rest of the country. Between 1983 and 1985, however, the percent decline in average length of stay for Medicare patients was greater in PPS States (17 percent) than in the four waiver States (10 percent) (K. Beebe, W. Callahan, and A. Mariano, 1986). And although the Medicare hospital discharge rate in PPS States declined 3.5 percent between 1983 and 1984, the discharge rate in waiver States increased 1 percent during the same time (Eggers, 1987). There was, however, a slower rate of growth in the waiver States between 1983 and 1984 than before PPS. According to Eggers, the slower rate of growth in discharge rate and the decline in length of stay in waiver States may "represent a spillover effect of PPS." Apparently, providers in the waiver States "were reacting to the PPS changes in ways similar to providers in PPS States" (Eggers, 1987). The same phenomenon was also observed for non-Medicare patients. For example, declines in hospital utilization rates for children after the introduction of PPS were reported by Kozak et al. (1987) and NCHS (1987a).

In the remainder of this report, data from the National Nursing Home Survey are presented. The NHDS provided annual estimates of elderly patients transferred to long-term care institutions (primarily nursing homes); data from the NNHS in the next section of the report show the characteristics of the patient population residing in nursing homes on any given day of the survey period.

Table A. Medicare short-stay hospital average length of stay in days, by year and waiver status: United States, 1982–85

Waiver status	Year			
	1982	1983	1984	1985
	Average length of stay in days			
All States	10.3	10.0	9.1	8.4
Waiver States	13.6	13.2	12.7	11.9
Prospective payment system States	9.8	9.5	8.5	7.9

SOURCE: K. Beebe, W. Callahan, and A. Mariano. 1986. Medicare short-stay hospital length of stay, fiscal years 1981–1985. *Health Care Financing Review* 7(3):119–125.

Changes in nursing home use by elderly residents admitted in 1977 and 1985

In 1985, an estimated 1,491,400 residents lived in 19,100 nursing homes nationwide (NCHS, 1987b). Of these residents, 1,266,300, or 85 percent, were aged 65 years or over at the time of admission. In the remainder of this report, the term "elderly" refers to residents 65 years or older at the time of admission. This subset of the nursing home population is examined to mimimize age differences between current residents from the NNHS admitted from hospitals and persons transferred from hospitals to long-term care institutions as reported in the NHDS. Of these elderly nursing home residents, 39 percent had been admitted from short-stay hospitals. This proportion was significantly higher than the proportion in 1977 (table 5).

At the time of the survey, most elderly nursing home residents had long stays in the facility; 63 percent had resided in the facility 1 year or more (figure 2). About 23 percent of elderly residents had been in the facility less than 6 months, and 13 percent had been in the facility less than 3 months. The mean length of stay since admission for elderly residents, which is influenced by the range of cases, was significantly longer (2.8 years) than the median length of stay for elderly residents (1.7 years). The median length of stay is the point in the distribution at which half of the residents have shorter stays and half have longer stays.

Because of the generally long stays of the nursing home resident population, a relatively small proportion were directly affected by the changes brought about by PPS. Table 5 shows that only 189,900 elderly residents had been transferred from hospitals in 1985, the first full year in which all designated hospitals were participating in PPS.

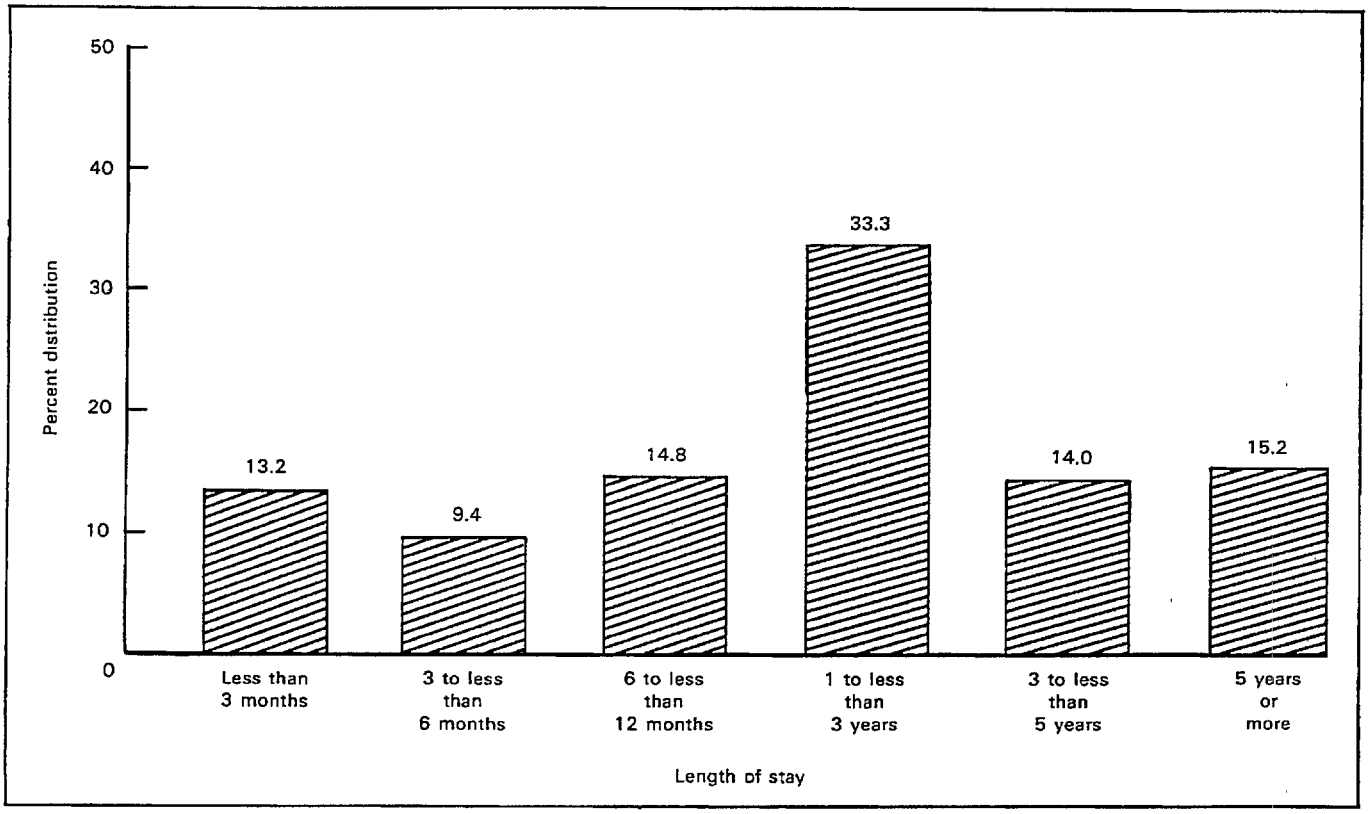


Figure 2. Percent distribution of nursing home residents aged 65 years or over at admission by length of stay since admission: United States, 1985

The difference between this NNHS estimate of elderly residents admitted from short-stay hospitals in 1985 and the NHDS estimate of elderly patients transferred to long-term care institutions in 1985 (table 1) is primarily due to methodologic differences in the surveys. The 1985 NNHS estimate of elderly residents admitted from hospitals in 1985 is a point estimate of residents on any given day during the survey period. Excluded from this estimate are residents admitted in 1985 but discharged before the survey date (including those discharged dead), as well as residents admitted in 1985 after the survey date. The NHDS estimate of elderly patients transferred to long-term care institutions, in contrast, is an annual estimate of all discharges to these institutions during calendar year 1985, including multiple discharges of the same patient to nursing homes. The NHDS estimate also includes elderly patients going to long-term care institutions other than nursing homes, such as chronic disease hospitals and hospices.

Despite the inherent biases of the current resident data, the strength of looking at the NNHS current resident data in conjunction with the NHDS data is that the NNHS current resident survey provides further information, not available from hospital records, about nursing home use by a definable subset of elderly patients transferred to long-term care institutions.

In this section of the report, elderly residents admitted in 1985 are compared with a similar population of elderly residents from the 1977 NNHS. Included in the 1977 study population are all residents aged 65 years or over at admission whose length of stay since admission was 357 days or less (the maximum length of stay for the 1985 study population). The 1977 and 1985 data are compared to see whether there was an increase in nursing home use by those admitted from hospitals after 1977. The benefits of limiting the comparison to elderly residents (65 years and over at admission) with lengths of stay of 357 days or less are as follows:

- The difference between the number of activities of daily living (ADL) dependencies at the time of admission and the number at the time of the survey is minimized, because of the short length of stay of the study populations. The number of ADL dependencies at the time of the survey is the main case-mix variable examined in this report.
- Case-mix differences by length of nursing home stay are controlled (the care needs of those recently admitted to the nursing home may be different from those of longer-staying patients, whose conditions may have stabilized); and
- The under-representation of short-stay nursing home patients, a bias inherent to the survey, should affect the 1977 and 1985 data equally, because the data cover similar time frames.

Table 5 shows that 410,500 elderly residents were admitted in 1985, the year of the survey. The comparable estimate from the 1977 survey was 406,500. The estimate of elderly residents admitted in 1985 includes a small number of residents admitted in January 1986. (The data collection period of the 1985 NNHS was August 1985 through January 1986.) These residents were included because their average length of stay is more similar to that of residents admitted in 1985 than of residents admitted before 1985. Between 1977 and 1985 there was a slight, although not statistically significant, increase in the percent of the study populations transferred from short-stay hospitals—from 44 percent in 1977 to 46 percent in 1985. The lack of change shown by these data, in contrast to the increased long-term care use shown by the NHDS data, may be an indication of biases in the current resident data toward long-stay residents. For example, suppose that the increased use of nursing homes is primarily by residents with short nursing home stays. Their under-representation in the current resident data might then preclude this phenomenon from being measured. Later in this report, characteristics of short-stay nursing home patients likely to be missed in the current resident survey are examined using data from the discharged resident survey of the 1985 NNHS. The discharged resident survey is more representative of nursing home patients with short durations of stay than is the current resident survey.

To show changes in patient characteristics between the 1977 and 1985 study populations, table 6 presents demographic and diagnostic information. The average age of the 1985 study population is higher than that of the 1977 study population, regardless of hospitalization status (whether admitted from a short-stay hospital or not). In general, the average nursing home stay was shorter for residents admitted from hospitals than for residents not admitted from hospitals. This difference between average nursing home stays by hospitalization status, however, was significant only in 1977. A shorter average nursing home stay was also found for the 1985 study population not admitted from short-stay hospitals (133.2 days in 1985, compared with 149.3 days in 1977). The average nursing home stays for residents admitted from short-stay hospitals in 1977 and in 1985 were similar.

Study residents admitted from short-stay hospitals in 1985 were more likely to be female than were 1977 study residents. There were also changes in the ranking of the most current primary diagnoses for residents not admitted from short-stay hospitals. In 1985, residents not admitted from hospitals were less likely (34 percent) to have primary diagnoses involving diseases of the circulatory system than were their 1977 counterparts (43 percent), but they were more likely to have primary diagnoses involving mental disorders (20 percent in 1985 compared with 13 percent in 1977).

Table 7 presents the functional status of the 1977 and 1985 study populations. Functional status is defined by the need for assistance in performing the activities of daily living. The ADL's used in this report are bathing, dressing, using the toilet room, mobility, continence, and eating. (Mobility is used in place of transferring into or out of a chair or bed, because transferring data were not available in

the 1977 survey.) The activities of daily living have been found to be good predictors of resource use in long-term care settings (Stassen and Bishop, 1983) and cost of care (Cameron and Knauf, 1982).

Overall, the 1985 study population admitted from short-stay hospitals were more dependent in ADL than were their 1977 counterparts. For example, a greater proportion of 1985 than of 1977 residents admitted from hospitals required assistance in bathing, dressing, using the toilet room, and eating. In addition, a larger proportion of 1985 residents admitted from hospitals were incontinent of bowels, bladder, or both (57 percent in 1985, compared with 50 percent in 1977). The percents of hospitalized residents who were dependent in mobility were similar for 1977 and 1985. In general, residents not admitted from hospitals were less dependent than were residents admitted from hospitals. However, in only two activities did residents not admitted from hospitals require more assistance in 1985 than in 1977.

The six activities of daily living may be summarized into a single measure of ADL dependency by summing the number of activities in which a resident receives assistance (Katz and Akpom, 1976). The 1985 study population tended to be more dependent in individual activities than did the 1977 study population: The average number of ADL dependencies for residents admitted from hospitals was 4.5 in 1985 compared with 4.0 in 1977. Similarly, the average number of ADL dependencies for residents not admitted from short-stay hospitals was higher in 1985 than in 1977 (3.6 in 1985 compared with 3.4 in 1977).

Because residents admitted in 1985 were older than their 1977 counterparts, regardless of hospitalization status, the number of ADL dependencies for the 1985 and 1977 study populations was age-adjusted (table B). After age-adjusting, the average numbers of ADL dependencies for those admitted from short-stay hospitals in 1985 and 1977 were 4.5 and 4.1, respectively. Therefore, the greater dependency level of these 1985 residents cannot be accounted for by their age structure. This was not the case, however, for residents not admitted from short-stay hospitals. After age-adjusting the average number of ADL dependencies, the difference in this measure between 1977 and 1985 narrowed for those not admitted from hospitals.

Because PPS affects only nursing home residents admitted from short-stay hospitals, the remainder of this section of the report focuses on this group only.

Table B. Average number of dependencies in activities of daily living by age; and age-adjusted rate for residents 65 years of age and over at admission, admitted in 1977 and in 1985, by hospitalization status: United States, 1977 and 1985

Age and age-adjusted rate	*Admitted from a short-stay hospital*		*Not admitted from a short-stay hospital*	
	1977[1]	*1985*[2]	*1977*[1]	*1985*[2]
	Average number of dependencies			
65 years and over	4.0	4.5	3.4	3.6
65–74 years	3.9	4.3	3.0	3.2
75–84 years	4.0	4.3	3.4	3.4
85–89 years	4.3	4.5	3.6	4.0
90 years or over	4.2	4.9	3.8	4.0
Age-adjusted rate [3]	4.1	4.5	3.5	3.6

[1] Matched with 1985 data on age and length of stay since admission.
[2] Includes a small number of residents admitted in January 1986.
[3] Age-adjusted by the direct method to the 1985 resident population aged 65 years and over in nursing homes, using 4 age groups. Nursing home resident population figures are from the 1985 National Nursing Home Survey.

Hospital use by elderly residents admitted from hospitals in 1985

Prospective payment was implemented in 1983–84; therefore, DRG estimates for elderly residents admitted from short-stay hospitals are available only for the 1985 study population. Table 8 presents the top 10 DRG's for elderly residents admitted from short-stay hospitals in 1985. The top 10 DRG's for nursing home residents are similar to those presented earlier for hospital discharges. For example, the top four DRG's for nursing home residents were the top four DRG's for hospital discharges: "specific cerebrovascular disorders except transient ischemic attack," "hip and femur procedures except major joint, age 70 or over, and/or substantial comorbidity and complication," "simple pneumonia and pleurisy, age 70 or over, and/or substantial comorbidity and complication," and "heart failure and shock." Chronic conditions reflected in the DRG categories—"degenerative nervous system disorders" and "diabetes, age 36 and over"—however, were ranked higher among nursing home residents than were hospital discharges. These two DRG's were ranked 5th and 9th among nursing home residents admitted from hospitals but were ranked 15th and 19th among hospital discharges to long-term care institutions. Altogether, the 10 DRG's presented in table 8 accounted for 43 percent of the DRG's for elderly residents admitted from hospitals in 1985.

Table 8 also presents the average hospital length of stay for the 1985 study population as reported by nursing home staff. In six of the seven DRG's common to table 8 and table 2 (NHDS data), the average hospital lengths of stay were statistically similar. The overall hospital length of stay reported by nursing home staff, however, was longer than that reported by NHDS (15.9 days for residents, compared with 12.9 days from NHDS). The difference between these two estimates may be due to methodologic differences between the surveys. Because the current resident estimates tend to underestimate the number of short-stay nursing home residents, the estimate of hospital length of stay may also be affected. That is, it may be that residents with longer nursing home stays also have longer hospital stays.

As with the Medicare data, the overall hospital length of stay masks differences by waiver status. Table C shows that the hospital stays for residents transferred from hospitals in 1985 were higher for residents in the waiver States (33.5 days, on the average) than for those in the PPS States (12.4 days). Table C also shows that the average numbers of ADL dependencies were statistically similar for hospitalized residents in the waiver States (4.6 dependencies) and for those in PPS States (4.4 dependencies). Based on the assumption that the waiver status of the State of residence had no effect on the functional status of the 1985 study population, the analysis of case mix that follows includes data for residents in the waiver States.

Table C. Number and percent distribution of residents 65 years of age and over at admission, transferred from short-stay hospitals in 1985, by waiver status, average hospital length of stay in days, and average number of dependencies: United States, 1985

Average hospital length of stay in days and average number of dependencies	Total		Waiver status			
			Waiver States		Prospective payment system States	
	Number	Percent distribution	Number	Percent distribution	Number	Percent distribution
All residents[1]	189,900	100.0	30,800	16.2	159,100	83.8
Average hospital length of stay in days	15.9	...	33.5	...	12.4	...
Average number of dependencies	4.4	...	4.6	...	4.4	...

[1] Includes a small number of residents admitted in January 1986.

Changes in case mix of elderly residents admitted from hospitals in 1985 and 1977

The previous section on nursing home utilization showed that the declines in hospital length of stay that followed the introduction of PPS also affected patients transferred to nursing homes. Between 1982 and 1985, the average hospital stay for patients transferred to long-term care institutions declined from 15.8 days to 12.9 days (table 1). With shorter hospital stays, elderly patients transferred to nursing homes in 1985 tended to have greater care needs (more ADL dependencies) than their 1977 counterparts had. To examine this change in case mix, this section compares characteristics of elderly residents transferred from short-stay hospitals by Medicare status and facility certification. Medicare status is examined because residents using Medicare for payment of nursing home care must be transferees from a hospital and thus are directly affected by changes brought about by PPS. "Medicare status in the month before interview" is examined for changes in case mix of Medicare beneficiaries since 1977. Medicare statistics have already shown increased utilization of the Medicare skilled nursing facility (SNF) benefit since the start of PPS.

Facility certification is examined for differences in case mix between residents in facilities certified as skilled nursing facilities (including facilities dually certified as SNF and intermediate care facilities) and facilities not certified as SNF. The latter category includes facilities certified for intermediate care only and those not certified (that is, not participating in either the Medicare or Medicaid program). Given the greater care needs of elderly residents transferred from hospitals in 1985, it may be that skilled nursing facilities (SNF) rather than those that are not so classified are meeting the changing needs of the elderly transferred from short-stay hospitals.

Medicare case mix

Medicare's skilled nursing facility benefit was not designed to provide long-term care; rather, it was designed to provide a less costly alternative to extended hospital stays, where medically appropriate. Thus, Medicare's coverage of SNF services for up to 100 days is limited to patients who have had 3 days of hospital care and need daily skilled or rehabilitation services. For the first 20 covered days in an SNF, the beneficiary pays no coinsurance. For days 21 through 100, however, the beneficiary is subject to a daily coinsurance payment of one-eighth of the hospital deductible ($50.00 in 1985). In 1985, the average per diem rate for Medicare patients was $62.02 (NCHS, 1987b). Thus, for Medicare beneficiaries using the SNF benefit, out-of-pocket copayments during the 21st through 100th day of their stay exceeded Medicare's payment for care.

Medicare's SNF coverage is limited, and the coverage requirements are stringent. To qualify for Medicare's SNF benefit, the patient must have been certified by a physician as needing daily skilled nursing care or related rehabilitative services, which as a practical matter can only be provided on an inpatient basis in a skilled nursing facility. In addition, the patient must have been admitted for further treatment of a condition for which he or she was hospitalized, within 30 days of the previous discharge from the hospital, with a stay of at least 3 days. In addition, coverage of SNF benefits applies only as long as these level-of-care requirements are met. Thus many patients admitted under Medicare may have to switch to other payment sources during their stays in nursing homes, because Medicare coverage terminates when Medicare coverage requirements are not met. In 1980, the average time in an SNF covered by Medicare was only 30 days (HCFA, 1985). In contrast, the average stay for all nursing home residents in 1985 was 2.9 years (NCHS, 1989).

Because of the limited coverage of SNF Medicare benefits and the stringent level-of-care requirements necessary to qualify for coverage, utilization of Medicare in nursing homes in 1985 was low. In 1985, Medicare accounted for only 1.7 percent of nursing home expenditures, but Medicaid accounted for 42 percent (Waldo, Levit, and Lazenby, 1986). Medicaid is a joint Federal-State program providing medical benefits to persons who qualify for welfare and to some of the "medically needy" (those who would be on welfare if their incomes were a little lower). The State-set criteria for Medicaid eligibility vary from State to State but cover most poor people in the United States (Davis and Schoen, 1978). Data from the 1985 NNHS show similar trends. At the time of the survey, in 1985, 1.4 percent of nursing home residents used Medicare as the primary source of payment; 50.4 percent of nursing home residents relied on Medicaid as their primarily source of payment (NCHS, 1989).

Of the 1985 study population admitted from hospitals, the proportion using Medicare as a primary or secondary payment source at admission (19 percent) is higher than for all nursing home residents because of the relatively shorter

stays of the study population (Table D). However, even for the 1985 study population transferred from hospitals, the majority (81 percent) used payment sources other than Medicare.

Table D compares selected patient characteristics for residents admitted from hospitals in 1985 by Medicare status at admission. With the exception of shorter stays for Medicare residents, the profiles of Medicare and non-Medicare residents are similar. For example, although it appears that Medicare residents had more severe medical problems, such as cancer, stroke, and hip fractures, the difference between the percents of the Medicare and non-Medicare residents having these conditions was not statistically significant. The average nursing home stay for Medicare residents (106.3 days) was significantly shorter than that for residents using payment sources other than Medicare (130.8 days). The average stay for Medicare residents is more than 100 days (the maximum number of days in an SNF that Medicare covers) because this figure includes residents who used Medicare at admission but later switched to another payment source.

Because Medicare residents, by definition of the SNF benefit, require intensive skilled nursing and rehabilitative care, their care needs tend to be greater than those of residents using other payment sources. Table E shows that Medicare residents required assistance in activities of daily living more often than did non-Medicare residents in four of the six activities. There was no difference in the percent requiring assistance in bathing or eating between Medicare and non-Medicare residents. As a result of the generally more dependent functional status of Medicare residents, the average number of ADL dependencies for Medicare residents (5.0) was greater than that for non-Medicare residents (4.3).

Table F compares the case mix of Medicare and non-Medicare residents in 1977 and 1985. In comparing 1977 and 1985 current resident data, it should be noted that the time frame for Medicare resident data changes from "at admission" to "last month." The "last month" time frame was necessary for comparability, because information on payment sources at admission is available only from the 1985 survey. It should also be noted that the estimate of

Table D. Number of residents 65 years of age and over at admission, transferred from short-stay hospitals in 1985, and percent distribution by selected characteristics, according to Medicare status at admission, with average length of stay, average age, and percent of residents with selected diagnoses: United States, 1985

Characteristic	All residents	Medicare status at admission: Medicare primary or secondary payment at admission	Medicare status at admission: No Medicare used at admission
		Number	
Residents	189,900	35,600	154,300
Age		Percent distribution	
Total	100.0	100.0	100.0
65–74 years	19.0	21.7	18.4
75–84 years	39.5	40.0	39.3
85 years and over	41.5	38.3	42.2
Sex			
Male	24.5	26.1	24.1
Female	75.5	73.9	75.9
Race			
White	91.4	92.5	91.1
Black and other	8.6	7.5	8.9
Current marital status			
Married	18.7	20.4	18.3
Not married	81.3	79.6	81.7
		Days	
Average length of stay[1]	126.2	106.3	130.8
		Years	
Average age	82.3	81.4	82.5
Selected current primary diagnosis and ICD–9–CM code		Percent	
Malignant neoplasms .140–208	4.1	9.0	3.0
Mental disorders .290–319	10.4	5.2	11.6
Diseases of the circulatory system .390–459	34.1	41.4	32.5
Cerebrovascular disease .430–436	13.1	22.1	11.1
Fracture of neck of femur .820	4.0	4.5	3.8

[1]The average stay for Medicare residents is more than 100 days because this figure includes residents who used Medicare at admission but later switched to another payment source.

Table E. Percent of nursing home residents 65 years of age and over at admission, transferred from short-stay hospitals in 1985, by type of dependency in activities of daily living and Medicare status at admission, percent distribution by number of dependencies, and average number of dependencies, according to Medicare status at admission: United States, 1985

Functional status	All residents	Medicare status at admission	
		Medicare primary or secondary payment source at admission	No Medicare used at admission
Type of dependency		Percent	
Requires assistance in bathing	95.8	98.6	95.1
Requires assistance in dressing	85.8	92.7	84.2
Requires assistance in using toilet room	76.5	91.4	73.1
Mobility—walks with assistance or is chairfast or bedfast	84.0	94.8	81.5
Continence—difficulty with bowel and/or bladder control	57.4	69.1	54.7
Requires assistance in eating	47.7	57.1	45.6
Number of dependencies		Percent distribution	
Total	100.0	100.0	100.0
None	2.7	–	3.3
1	5.0	2.3	5.6
2	7.8	3.8	8.7
3	7.6	4.0	8.4
4	18.4	15.5	19.1
5	21.2	27.0	19.9
6	37.4	47.5	35.0
		Average number	
Average number of dependencies	4.5	5.0	4.3

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

residents using Medicare in the last month for primary or secondary payment for care is likely to underestimate the actual number using Medicare because of the time frame (the last month) and because of sample biases. The "last month" time frame excludes residents who used Medicare at the time of admission but who had switched to other payment sources by the time of the survey. Thus, the number of Medicare residents transferred from hospitals in 1985 decreases from 35,600 at admission (table D) to 22,000 in the last month (table F). And to the extent that the current resident data underestimate the number of short-stay nursing home residents, the number of residents using Medicare is affected, because the average Medicare-covered skilled nursing facility stay (30 days, in 1980) is much shorter than the average stay for all nursing home patients (HCFA, 1985).

As was found previously for elderly residents transferred from hospitals, table F shows an apparent change in case mix among Medicare and non-Medicare residents between 1977 and 1985. The difference in average number of ADL dependencies for Medicare residents in 1977 versus 1985, however, was not statistically significant. This lack of significance is probably due to the small number of sample cases involved. Residents using payment sources

Table F. Number of residents 65 years of age and over at admission, transferred from short-stay hospitals in 1977 and in 1985, average number of dependencies in activities of daily living, by age, and age-adjusted rate, by Medicare status in month before interview: United States, 1977 and 1985

Age and age-adjusted rate	Medicare primary or secondary payment source in month before interview		No Medicare used in month before interview	
	1977[1]	1985[2]	1977[1]	1985[2]
Number of residents	25,900	22,000	152,400	167,900
		Average number of dependencies		
65 years and over	4.6	4.9	4.0	4.4
65–74 years	4.4	*4.7	3.7	4.3
75–84 years	4.4	5.0	3.9	4.2
85–89 years	5.1	*4.8	4.2	4.4
90 years or over	*4.6	*5.2	4.1	4.8
Age-adjusted rate[3]	4.6	5.0	4.0	4.4

[1] Matched with 1985 data on age and length of stay since admission.
[2] Includes a small number of residents admitted in January 1986.
[3] Age-adjusted by the direct method to the 1985 resident population 65 years of age and over in nursing homes, using 4 age groups. Nursing home resident population figures are from the 1985 National Nursing Home Survey.

other than Medicare required assistance in performing more ADL activities in 1985 (4.4 dependencies, on the average) than in 1977 (4.0 dependencies), a difference that persists even after age-adjusting. Thus, the case mix of Medicare residents did not change between 1977 and 1985 but that of residents using payment sources other than Medicare worsened in the same time period. Although no change was found in the case mix of Medicare residents in this analysis, it should be noted that in other studies, greater care needs have been found among Medicare nursing home patients in the period following PPS. A study of nursing homes in 10 States, for example, indicated that the "subacute care needs of patients increased in the post-PPS period" in homes serving a large number of Medicare patients (Guterman et al., 1988).

Case mix by facility certification

Table 9 shows selected patient characteristics of the 1977 and 1985 study populations transferred from hospitals by facility certification. The average nursing home stays for the 1985 study population were similar to those for the 1977 study population, regardless of facility certification. The 1985 study population of patients admitted to SNF's were also older (on the average, 82.5 years) than their 1977 counterparts (80.7 years). Other differences between the 1977 and 1985 study populations transferred to SNF's were a larger proportion in 1985 who were aged 85 years and older and a larger proportion in 1985 who were female. The patient profiles of residents transferred in 1985 to facilities not certified as SNF's showed that more of them had mental disorders and that they were older than was true for their 1977 counterparts.

Table 10 presents the functional status of hospitalized elderly residents in 1977 and 1985 by facility certification. As might be expected, residents with greater care needs (more ADL dependencies) tended to be admitted to skilled nursing facilities. For example, 61 percent of SNF residents in 1985, compared with 42 percent of residents in non-SNF facilities, were incontinent of bowels, bladder, or both. In 1985, 51 percent of SNF residents, compared with 35 percent of non-SNF residents, required assistance in eating; and 40 percent of SNF residents, compared with 24 percent of non-SNF residents, required assistance in all 6 activities of daily living. Reflecting the generally more dependent functional status of residents in SNF's, the average number of ADL dependencies among these residents (4.6) was significantly greater than that for residents in facilities not certified as SNF's (3.7).

Table 10 also shows a change in the case mix of elderly residents transferred from hospitals to SNF's after 1977. The average number of ADL dependencies among SNF residents increased from 4.2 in 1977 to 4.6 in 1985. Eighty-one percent of SNF residents in 1985 had 4 to 6 ADL dependencies, compared with 69 percent in 1977. This difference cannot be accounted for on the basis of age, because the difference remains even after the data are age-adjusted (table G). In contrast to the greater care needs of SNF residents in 1985, there was no difference in the average number of ADL dependencies for residents of facilities not certified as SNF's in 1977 or 1985 (3.5 dependencies in 1977 and 3.7 dependencies in 1985).

Table G. Average number of dependencies in activities of daily living, by age; and age-adjusted rate for residents 65 years of age and over at admission, transferred from short-stay hospitals in 1977 and in 1985, by facility certification: United States, 1977 and 1985

Age and age-adjusted rate	Skilled nursing facility[1]		Not certified as a skilled nursing facility	
	1977[2]	1985[3]	1977[2]	1985[3]
	Average number of dependencies			
65 years and over	4.2	4.6	3.5	3.7
65–74 years	4.0	4.6	3.3	3.4
75–84 years	4.1	4.6	3.6	3.3
85–89 years	4.4	4.6	3.6	4.0
90 years or over	4.3	4.9	*3.7	4.7
Age-adjusted rate[4]	4.2	4.7	3.6	3.8

[1]Includes homes dually certified as skilled nursing facilities and intermediate care facilities.
[2]Matched with 1985 data on age and length of stay since admission.
[3]Includes a small number of residents admitted in January 1986.
[4]Age-adjusted by the direct method to the 1985 resident population 65 years of age and over in nursing homes, using 4 age groups. Nursing home resident population figures are from the 1985 National Nursing Home Survey.

Use of nursing homes by discharged residents admitted from hospitals in 1976 and in 1985

As already shown, using data from the current resident sample of the NNHS, elderly residents transferred from short-stay hospitals in 1985 were more dependent in activities of daily living than were their 1977 counterparts. These estimates, however, do not reflect the functional status of all patients transferred from hospitals in 1985—only of those still residing in nursing homes at the time of the survey. They do not apply to residents transferred from hospitals in 1985 but discharged in 1985 before the date of the survey or to residents transferred from hospitals in 1985 after the date of the survey. In this section, characteristics of the former group are examined to identify characteristics of short-stay nursing home residents likely to be missed in the current resident sample. Data from the discharged resident sample of the 1985 NNHS cover all persons discharged from nursing homes in the 12 months prior to the survey date.

It should be noted that by focusing on the subset of the discharged resident sample comparable to the 1985 current resident study population (aged 65 years and over at admission, transferred from short-stay hospitals in 1985 or later), the estimate of discharges will not reflect a full 1-year time period. (Only use of all discharge data will include discharges during a calendar year.) This is due to the fact that the 12-month discharge reference period could have fallen anywhere from the beginning of August 1984 through January 1986.

Data from the 1985 discharged resident survey show that of an estimated 1,223,500 persons discharged from nursing homes during 1984–85 (NCHS, 1987c), 1,070,600 were aged 65 years or over at admission. Of this total, 451,100 (42 percent) were admitted and discharged in 1985. Table H shows that of the 451,100 persons admitted and discharged in 1985, 291,400 (65 percent) were transferred from short-stay hospitals. Whether the percent of discharges transferred from hospitals in 1985 represents an increase over that for 1977 cannot be determined from discharge data from the 1977 NNHS, because information on living arrangements prior to admission was not collected for discharges in 1977.

In general, elderly discharges transferred from short-stay hospitals in 1985 may have had more serious medical conditions than other elderly discharges admitted from places other than short-stay hospitals, because 28 percent of previously hospitalized discharges had died in their nursing home and 34 percent had to be readmitted to short-stay hospitals at the end of their stays (table H). In comparison, elderly discharges admitted from places other than short-stay hospital were less likely (22 percent) to be discharged dead and were less likely (27 percent) to be readmitted to hospitals for further treatment.

Table J compares other differences between elderly discharges from nursing homes in 1985 by hospitalization status. Overall, the demographic profiles of discharges admitted and those not admitted from hospitals were similar. There were no significant differences between these two groups in age, sex, race, or marital status. There were differences, however, in diagnosis and functional status. At the time of admission, discharges transferred from short-stay hospitals were more likely (8 percent) to be admitted

Table H. Number and percent distribution of nursing home discharges 65 years of age and over at admission to nursing homes in 1985 by discharge status, according to hospitalization status: United States, 1985

Hospitalization status	Discharge status							
	All statuses	Discharged dead	Discharged alive to a hospital	Discharged alive to another location[1]	All statuses	Discharged dead	Discharged alive to a hospital	Discharged alive to another location[1]
	Number				Percent distribution			
Total	451,100	116,600	140,300	194,200	100.0	25.8	31.1	43.0
Admitted from a short-stay hospital	291,400	81,700	97,700	112,000	100.0	28.0	33.5	38.4
Not admitted from a short-stay hospital	159,700	34,900	42,600	82,200	100.0	21.8	26.7	51.5

[1]Includes a small number of discharges for whom it was unknown whether they were discharged alive.

Table J. Percent distribution of nursing home discharges 65 years of age and over at admission to nursing homes in 1985 by selected characteristics, according to hospitalization status; and percent of those residents by selected primary diagnosis and type of dependency, with average length of stay in days and average age: United States, 1985

Characteristic	Hospitalization status: Admitted from a short-stay hospital	Hospitalization status: Not admitted from a short-stay hospital
	Percent distribution	
Total	100.0	100.0
Age[1]		
65–74 years	18.8	20.2
75–84 years	49.2	43.9
85 years and over	32.0	35.9
Sex		
Male	34.3	40.1
Female	65.7	59.9
Race		
White	93.5	93.2
Black and other	6.5	6.8
Current marital status[1]		
Married	27.5	28.4
Not married	72.5	71.6
Partial index of dependency[1]		
Not dependent in mobility or continence	27.8	38.4
Dependent in mobility only	16.9	12.9
Dependent in continence only	8.0	9.9
Dependent in mobility and continence	47.3	38.9
Medicare status at admission		
Medicare primary or secondary payment source at admission	40.3	13.1
No Medicare used at admission	59.7	86.9
Selected primary diagnosis at admission and ICD-9-CM code	Percent	
Malignant neoplasms .140–208	8.8	9.4
Mental disorders .290–319	5.3	8.6
Diseases of the circulatory system .390–459	34.6	34.2
Cerebrovascular disease. .430-436	14.1	12.5
Fracture of neck of femur .820	8.3	3.8
Type of dependency[1]		
Chairfast	27.2	21.7
Bedfast	36.9	30.0
Continence—difficulty with bowel and/or bladder control	55.3	48.8
	Days[2]	
Average length of stay	42.5	47.8
	Years[1]	
Average age	81.1	81.4

[1]Reference period for discharge data is at time of discharge.
[2]Length of stay for discharges is the total number of days in nursing home from day of admission through day of discharge.

for hip fractures than were discharges admitted from other locations (4 percent). The latter were, however, more likely to be admitted with diagnoses involving mental disorders (9 percent) than were those transferred from hospitals (5 percent). Higher proportions of discharges transferred from hospitals than of others were bedfast (37 versus 30 percent) and incontinent (55 versus 49 percent). Differences in mobility and continence are summarized in the partial index of dependency in table J. Overall, more discharges admitted from short-stay hospitals (47 percent) than discharges not admitted from hospitals (39 percent) were dependent in both mobility and continence.

As was discussed previously, short-stay nursing home patients using Medicare as a primary or secondary payment source are likely to be under-represented in the current resident survey. Because of the significantly shorter lengths of stay of discharged residents in the study population, Medicare residents were twice as likely to be included among discharges as were residents. In 1985, 40 percent of elderly discharges transferred from hospitals were using Medicare as their primary or secondary source of payment at the time of admission. The comparable rate for residents was only 19 percent (table D).

As was mentioned earlier, comparisons between discharges admitted from hospitals in the 1977 versus the 1985 NNHS are not possible because information on living arrangements prior to admission was not collected for discharges in the 1977 survey. Discharged residents who used Medicare as a primary or secondary SNF payment source, however, had by definition been admitted after a hospital stay of 3 days or more. Table K shows that in 1985, 113,300 discharged residents used Medicare as the primary or secondary payment source at the time of discharge. About 83 percent of these discharges had been directly transferred from short-stay hospitals, and most (71 percent) had only recently been transferred with stays of less than 1 month; therefore, by comparing 1977 and 1985 discharges using Medicare for primary or secondary payment, it may be determined whether there was a change in case mix similar to that found for current residents using Medicare.

Table K. Number of nursing home discharges 65 years of age and over at admission to nursing homes in 1985, and percent distribution by length of stay and hospitalization status, according to Medicare status at discharge: United States, 1985

Length of stay and hospitalization status	Medicare status at discharge: Medicare primary or secondary payment source	Medicare status at discharge: No Medicare used
	Number	
Discharges	113,300	337,800
	Percent distribution	
Total	100.0	100.0
Length of stay		
Less than 1 month	70.5	49.2
1 month or more	29.5	50.8
Hospitalization status		
Admitted from a short-stay hospital	83.1	58.4
Not admitted from a short-stay hospital	16.9	41.6

In comparing 1976 and 1985 data for discharges using Medicare for primary or secondary payment for care, the time reference used was "at time of discharge" rather that "at admission," as shown in table J. The change in time reference was necessary for comparability, because information on payment sources at admission is available only from the 1985 survey. Again, because information on living arrangements prior to admission was not collected in the 1977 NNHS survey of discharges, Medicare discharges from both the 1977 and 1985 surveys are compared without regard to whether or not they were admitted from a hospital.

Table L shows that, between 1976 and 1985, there was an increase in percent of Medicare discharges with nursing home stays of less then 1 month: from 56 percent in 1976 to 71 percent in 1985. This finding is similar to that noted by Guterman et al. of increased use of SNF's by Medicare beneficiaries with nursing home stays of 7 days or less between 1981 and 1984–85 (Guterman et al., 1988). Table L also reveals a change in the partial index of dependency. In 1985, Medicare discharges were more dependent on mobility and continence than were their 1976 counterparts—50 percent of Medicare discharges were dependent in both mobility and continence in 1985, compared with 37 percent in 1976. Similarly, a smaller proportion of Medicare discharges in 1985 were independent in mobility and continence (28 percent) than in 1977 (37 percent). These findings corroborate findings reported earlier of a worsening of the Medicare patients case mix after the introduction of PPS (Guterman et al., 1988).

Although there were observable differences by primary diagnosis at admission between 1976 and 1985, the only statistically significant difference between these two data years was a decline in percent of Medicare discharges admitted with fracture of neck of femur (14 percent in 1976, compared with 9 percent in 1985). Further research is needed to investigate the reasons for the decline in Medicare discharges admitted with this diagnosis.

Table L. Number of nursing home discharges 65 years of age and over using Medicare for primary or secondary payment at the time of discharge and admitted in 1976 and 1985; percent distribution by selected patient characteristics, and percent of discharges by selected primary diagnosis: United States, 1976 and 1985

Characteristic	*1976*	*1985*[1]
	Number	
Discharges	192,200	113,300
	Percent distribution	
Total	100.0	100.0
Length of stay		
Less than 1 month	56.1	70.5
1 month or more	43.9	29.5
Partial index of dependency[2]		
Not dependent in mobility or continence	36.6	27.7
Dependent in mobility only	14.9	18.1
Dependent in continence only	11.3	4.3
Dependent in mobility and continence	37.2	49.9
Selected primary diagnosis at admission and ICD-9-CM code		
Malignant neoplasms .140–208	10.8	8.0
Mental disorders .290–319	3.7	2.1
Diseases of the circulatory system .390–459	41.3	35.5
Cerebrovascular disease .430–436	15.4	20.1
Fracture of neck of femur .820	14.2	8.8

[1]Includes a small number of patients admitted in January 1986.
[2]Reference period for discharge data is at time of discharge.

Conclusions

Data from the NHDS and NNHS provide a more complete description of changes in nursing home utilization under PPS when viewed together than when seen separately. Data from the NHDS show a decreased hospital length of stay for elderly patients transferred to long-term care institutions and increased utilization of long-term care institutions (nursing homes, for the most part). Using the 1977 NNHS data as a surrogate for the pre-PPS period, the NNHS current resident data show a slight although not statistically significant increase in the percent of residents transferred from short-stay hospitals and a change in the case-mix of residents transferred from short-stay hospitals since the start of PPS. The resident population transferred from hospitals in 1985 are more dependent in ADL than are their 1977 counterparts. The functional status of elderly residents not admitted from hospitals also worsened during the same period. Much of the change in ADL function for elderly residents not admitted from hospitals is accounted for by their age. After age-adjustment, the average number of ADL dependencies for elderly residents not admitted from hospitals in 1985 more closely resembled the average in 1977.

This study has also revealed that the greater care needs of residents admitted from short-stay hospitals in 1985 are being served by skilled nursing facilities. The age-adjusted number of ADL dependencies for residents in skilled nursing facilities was 4.2 in 1977 and 4.7 in 1985. There was no difference between 1977 and 1985 in the number of ADL dependencies of residents of facilities not certified as skilled nursing facilities. This study also revealed no difference between 1977 and 1985 in the case mix of residents relying on Medicare for primary or secondary source of payment in the month before interview; the case mix of residents who did not use Medicare for payment in the month before the interview, however, worsened.

Data from the current resident survey of the NNHS, however, have limitations, both because of the small number of sample cases involved and because of inherent biases that tend to under-represent short-stay residents. Examination of the discharge resident survey from the 1985 NNHS, for example, revealed that of a study population of discharges 65 years of age and over and admitted in 1985 or later, those admitted from short-stay hospitals had an average nursing home stay of 43 days and those not admitted from hospitals had an average stay of 48 days. Because of the shorter nursing home stays of discharged residents in the study population, Medicare residents were twice as likely to be included in the discharge study population as in the resident study population. Comparison of Medicare discharges between 1976 and 1985 revealed increases in both of the percent of discharges with nursing home stays of less than 1 month and of the percent dependent in both mobility and continence.

Findings from this study are consistent with Medicare program statistics as reported by Guterman et al. (1988) and in several studies based on small area samples. Lewis et al. (1987), for example, found increased SNF utilization by Medicare beneficiaries between 1980 and 1984 in the San Bernardino-Riverside Standard Metropolitan Statistical Area in Southern California, and Guterman et al. (1988) found increased SNF utilization among Medicare beneficiaries nationwide. Small area studies of Medicare hospital discharges also showed greater care needs for Medicare patients after the implementation of PPS (Guterman et al., 1988). This report also revealed that PPS affects not only persons using Medicare for payment but also those not relying on Medicare. Between 1977 and 1985, the average number of ADL dependencies for residents in the study populations not relying on Medicare for payment increased from 4.0 to 4.4.

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List of detailed tables

Table 1. Number, percent distribution, and average length of stay of patients 65 years of age and over discharged from short-stay hospitals by discharge status: United States, 1982–85

Discharge status	1982	1983	1984	1985	1982	1983	1984	1985	1982	1983	1984	1985
	Number of discharges in thousands				Percent distribution				Average length of stay in days			
All discharge statuses	10,697	11,302	11,226	10,508	100.0	100.0	100.0	100.0	10.1	9.7	8.9	8.7
Routine discharge to home	8,164	8,740	8,690	7,997	76.3	77.3	77.4	76.1	9.2	8.8	8.1	7.8
Left against medical advise	34	33	25	33	0.3	0.3	0.2	0.3	6.0	5.4	4.1	5.8
Transferred to another short-term hospital	218	224	260	279	2.0	2.0	2.3	2.7	10.4	8.5	9.0	10.2
Transferred to long-term care institution	882	1,019	1,100	1,202	8.2	9.0	9.8	11.4	15.8	15.6	13.3	12.9
Alive, disposition not stated	543	437	338	212	5.1	3.9	3.0	2.0	9.7	9.8	8.9	9.8
Dead	721	726	689	669	6.7	6.4	6.1	6.4	13.1	13.0	12.5	11.5
Status not stated	135	124	125	116	1.3	1.1	1.1	1.1	10.2	10.3	10.1	9.6

Table 2. Number, percent, and average length of stay of patients 65 years of age and over discharged from short-stay hospitals to long-term care institutions, by selected diagnosis-related groups: United States, 1985

Diagnosis-related group	Number of discharges	Percent	Average length of stay in days
All diagnosis-related groups	1,201,700	100.0	12.9
Specific cerebrovascular disorders except transient ischemic attack	84,900	7.1	15.0
Simple pneumonia and pleurisy, age 70 or over, and/or substantial comorbidity and complication	73,600	6.1	11.8
Hip and femur procedures except major joint, age 70 or over, and/or substantial comorbidity and complication	66,200	5.5	14.0
Heart failure and shock	58,900	4.9	11.6
Nutritional and miscellaneous metabolic disorders, age 70 or over, and/or substantial comorbidity and complication	50,600	4.2	9.0
Kidney and urinary tract infections, age 70 or over, and/or substantial comorbidity and complication	44,500	3.7	9.2
Major joint procedures	35,600	3.0	14.8
Unrelated operating room procedures	29,700	2.5	21.8
Esophagitis, gastroenteritis, and miscellaneous digestive disorders, age 70 or over, and/or substantial comorbidity and complication	25,100	2.1	8.0
Chronic obstructive pulmonary disease	23,400	1.9	11.4
Transient ischemic attack	21,900	1.8	9.3
Septicemia, age 18 or over	20,400	1.7	14.8
Gastrointestinal hemorrhage, age 70 or over, and/or substantial comorbidity and complication	19,500	1.6	7.7
Cardiac arrhythmia and conduction disorder, age 70 or over, and/or substantial comorbidity and complication	18,800	1.6	10.1
Degenerative nervous system disorders	17,300	1.4	23.6
Circulatory disorders with acute myocardial infarction and cardiovascular complications, discharged alive	16,800	1.4	13.5
Organic disturbances and mental retardation	16,300	1.4	18.1
Respiratory infections and inflammation, age 70 or over, and/or substantial comorbidity and complication	15,900	1.3	12.9
Psychoses	14,900	1.2	16.4
Diabetes, age 36 or over	14,800	1.2	11.0

Table 3. Number, percent, and average length of stay of patients 65 years of age and over routinely discharged home from short-stay hospitals, by selected diagnosis-related groups: United States, 1985

Diagnosis-related group	Number of discharges	Percent	Average length of stay in days
All diagnosis-related groups	7,997,100	100.0	7.8
Heart failure and shock	343,300	4.3	7.1
Angina pectoris	275,000	3.4	5.1
Esophagitis, gastroenteritis, and miscellaneous digestive disorders, age 70 or over, and/or substantial comorbidity and complication	252,900	3.2	5.6
Simple pneumonia and pleurisy, age 70 or over, and/or substantial comorbidity and complication	216,000	2.7	8.4
Chronic obstructive pulmonary disease	207,000	2.6	7.2
Cardiac arrhythmia and conduction disorder, age 70 or over, and/or substantial comorbidity and complication	205,000	2.6	5.6
Specific cerebrovascular disorders except transient ischemic attack	174,900	2.2	11.6
Bronchitis and asthma, age 70 or over, and/or substantial comorbidity and complication	162,100	2.0	6.8
Transurethral prostatectomy, age 70 or over, and/or substantial comorbidity and complication	157,200	2.0	6.7
Transient ischemic attack	150,600	1.9	5.2
Circulatory disorders with acute myocardial infarction without cardiovascular complications, discharged alive	143,400	1.8	9.2
Atherosclerosis, age 70 or over, and/or substantial comorbidity and complication	143,300	1.8	6.5
Unrelated operating room procedures	139,000	1.7	12.9
Medical back problems	137,300	1.7	6.9
Nutritional and miscellaneous metabolic disorders, age 70 or over, and/or substantial comorbidity and complication	137,200	1.7	6.8
Lens procedures	126,600	1.6	1.4
Gastrointestinal hemorrhage, age 70 or over, and/or substantial comorbidity and complication	116,100	1.5	6.6
Major joint procedures	116,000	1.5	14.4
Diabetes, age 36 or over	109,500	1.4	7.2
Kidney and urinary tract infections, age 70 or over, and/or substantial comorbidity and complication	109,200	1.4	6.8

Table 4. Rankings and average length of stay of patients 65 years of age and over discharged from short-stay hospitals, by discharge status and selected diagnosis-related groups: United States, 1985

Diagnosis-related group	Discharged to long-term care institutions	Discharged home	Discharged to long-term care institutions	Discharged home
	Ranking[1]		Average length of stay in days	
Specific cerebrovascular disorders except transient ischemic attack	1	7	15.0	11.6
Simple pneumonia and pleurisy, age 70 or over, and/or substantial comorbidity and complication	2	4	11.8	8.4
Hip and femur procedures except major joint, age 70 or over, and/or substantial comorbidity and complication	3	31	14.0	16.1
Heart failure and shock	4	1	11.6	7.1
Nutritional and miscellaneous metabolic disorders, age 70 or over, and/or substantial comorbidity and complication	5	15	9.0	6.8
Kidney and urinary tract infections, age 70 or over, and/or substantial comorbidity and complication	6	20	9.2	6.8
Major joint procedures	7	18	14.8	14.4
Unrelated operating room procedures	8	13	21.8	12.9
Esophagitis, gastroenteritis, and miscellaneous digestive disorders, age 70 or over, and/or substantial comorbidity and complication	9	3	8.0	5.6
Chronic obstructive pulmonary disease	10	5	11.4	7.2
Transient ischemic attack	11	10	9.3	5.2
Septicemia, age 18 or over	12	50	14.8	11.4
Gastrointestinal hemorrhage, age 70 or over, and/or substantial comorbidity and complication	13	17	7.7	6.6
Cardiac arrhythmia and conduction disorder, age 70 or over, and/or substantial comorbidity and complication	14	6	10.1	5.6
Degenerative nervous system disorders	15	38	23.6	14.4

[1] Ranking of patients by proportion to which each diagnosis-related group applies, with 1 being most common.

Table 5. Number and percent distribution of nursing home residents 65 years of age and over at admission by hospitalization status, according to year of admission: United States, 1977 and 1985

Hospitalization status	1977 survey			1985 survey		
	All residents	Year of admission		All residents	Year of admission	
		Before 1977	1977		Before 1985	1985[1]
	Number					
Total	1,084,600	678,100	406,500	1,266,300	855,800	410,500
Admitted from a short-stay hospital	367,900	189,600	178,300	499,100	309,200	189,900
Not admitted from a short-stay hospital	716,700	488,500	228,200	767,200	546,600	220,600
	Percent distribution					
Total	100.0	100.0	100.0	100.0	100.0	100.0
Admitted from a short-stay hospital	33.9	28.0	43.9	39.4	36.1	46.3
Not admitted from a short-stay hospital	66.1	72.0	56.1	60.6	63.9	53.7

[1]Includes a small number of residents admitted in January 1986.

NOTE: Data for residents admitted in 1977 matched with 1985 data on age and length of stay after admission.

Table 6. Percent distribution of nursing home residents 65 years of age and over at admission to nursing homes in 1977 and in 1985 by selected characteristics, according to hospitalization status, and percent by selected primary diagnosis, with average length of stay and average age by hospitalization status: United States, 1977 and 1985

Characteristic	1977[1]			1985[2]		
	All residents	Hospitalization status		All residents	Hospitalization status	
		Admitted from a short-stay hospital	Not admitted from a short-stay hospital		Admitted from a short-stay hospital	Not admitted from a short-stay hospital
Average length of stay since admission in days	140.0	128.0	149.3	130.0	126.2	133.2
Average age	80.9	80.5	81.2	82.2	82.3	82.0
	Percent distribution					
Total	100.0	100.0	100.0	100.0	100.0	100.0
Age						
65–74 years	21.6	23.7	20.0	18.4	19.0	17.9
75–84 years	44.3	44.1	44.5	40.5	39.5	41.3
85 years and over	34.0	32.2	35.5	41.1	41.5	40.8
Sex						
Male	30.9	31.2	30.7	27.3	24.5	29.7
Female	69.1	68.8	69.3	72.7	75.5	70.3
Race						
White	93.7	93.9	93.5	92.5	91.4	93.5
Black and other	6.3	6.1	6.4	7.5	8.6	6.5
Current marital status						
Married	17.1	16.0	18.1	18.5	18.7	18.3
Not married	82.9	84.0	81.9	81.5	81.3	81.7
Selected current primary diagnosis and ICD-9-CM code						
Malignant neoplasms .140–208	4.1	6.4	2.3	3.3	4.1	2.6
Mental disorders .290–319	11.0	8.8	12.7	15.4	10.4	19.6
Diseases of the circulatory system .390–459	41.5	39.6	43.0	33.8	34.1	33.5
Cerebrovascular disease .430–436	9.9	12.8	7.6	11.6	13.1	10.2
Fracture of neck of femur .820	4.4	6.6	2.7	2.9	4.0	1.9

[1]Matched with 1985 data on age and length of stay after admission.
[2]Includes a small number of residents admitted in January 1986.

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

Table 7. Percent of nursing home residents 65 years of age and over at admission to nursing homes in 1977 and in 1985, by type of dependency in activities of daily living and hospitalization status, percent distribution by number of dependencies, and average number of dependencies, according to hospitalization status: United States, 1977 and 1985

Functional status	1977[1]			1985[2]		
		Hospitalization status			Hospitalization status	
	All residents	Admitted from a short-stay hospital	Not admitted from a short-stay hospital	All residents	Admitted from a short-stay hospital	Not admitted from a short-stay hospital
Dependency in activities of daily living			Percent			
Requires assistance in bathing	89.6	92.2	87.6	91.8	95.8	88.4
Requires assistance in dressing	72.8	79.0	68.0	79.8	85.8	74.6
Requires assistance in using toilet room	57.0	65.2	50.6	66.0	76.5	57.0
Mobility—walks with assistance or is chairfast or bedfast	71.1	80.5	63.7	74.4	84.0	66.1
Continence—difficulty with bowel and/or bladder control	44.2	50.0	39.7	50.2	57.4	44.0
Requires assistance in eating	32.6	37.3	29.0	39.5	47.7	32.5
Number of dependencies			Percent distribution			
Total	100.0	100.0	100.0	100.0	100.0	100.0
None	6.0	3.7	7.8	6.0	2.7	8.8
1	11.6	7.8	14.6	7.5	5.0	9.7
2	13.0	12.6	13.2	10.1	7.8	12.0
3	11.4	9.0	13.3	9.6	7.6	11.3
4	16.3	17.6	15.3	17.3	18.4	16.4
5	19.7	22.0	18.0	21.1	21.2	21.0
6	21.9	27.3	17.8	28.4	37.4	20.7
			Average number			
Average number of dependencies	3.7	4.0	3.4	4.0	4.5	3.6

[1]Matched with 1985 data on age and length of stay after admission.
[2]Includes a small number of residents admitted in January 1986.

Table 8. Number, percent, and average hospital length of stay for nursing home residents 65 years of age and over transferred from short-stay hospitals in 1985, by selected diagnosis-related groups: United States, 1985

Diagnosis-related group	Number of residents	Percent	Average hospital length of stay in days
All diagnosis-related groups	189,900	100.0	15.9
Specific cerebrovascular disorders except transient ischemic attack	16,400	8.6	18.6
Hip and femur procedures except major joint, age 70 or over, and/or substantial comorbidity and complication	13,200	6.9	14.2
Simple pneumonia and pleurisy, age 70 or over, and/or substantial comorbidity and complication	9,300	4.9	12.4
Heart failure and shock	7,400	3.9	8.5
Degenerative nervous system disorders	6,500	3.4	15.6
Fracture of hip and pelvis	6,500	3.4	11.9
Nutritional and miscellaneous metabolic disorders, age 70 or over, and/or substantial comorbidity and complication	6,500	3.4	12.1
Kidney and urinary tract infections, age 70 or over, and/or substantial comorbidity and complication	*5,600	*2.9	7.6
Diabetes, age 36 or over	*4,900	*2.6	*22.0
Atherosclerosis, age 70 or over, and/or substantial comorbidity and complication	*4,600	*2.4	25.3

NOTE: Includes a small number of residents admitted in January 1986.

Table 9. Number of residents 65 years of age and over at admission, transferred from short-stay hospitals in 1977 and in 1985, and percent distribution by selected characteristics, according to facility certification, with average length of stay, average age, and percent of residents with selected diagnoses: United States, 1977 and 1985

Characteristic	1977			1985[1]		
		Certification			Certification	
	All residents	Skilled nursing facility[2]	Not certified as a skilled nursing facility	All residents	Skilled nursing facility[2]	Not certified as a skilled nursing facility
Number of residents	178,300	147,100	31,200	189,900	153,600	36,300
Average length of stay since admission in days	128.0	125.6	139.7	126.2	123.1	139.1
Average age	80.5	80.7	79.8	82.3	82.5	81.7
			Percent distribution			
Total	100.0	100.0	100.0	100.0	100.0	100.0
Age						
65–74 years	23.7	22.8	28.0	19.0	18.6	20.8
75–84 years	44.1	43.6	46.2	39.5	39.2	40.7
85 years and over	32.2	33.6	25.8	41.5	42.2	38.5
Sex						
Male	31.2	31.0	32.4	24.5	24.2	25.6
Female	68.8	69.0	67.6	75.5	75.8	74.4
Race						
White	93.9	93.3	96.8	91.4	91.6	90.6
Black and other	6.1	6.7	3.2	8.6	8.4	9.4
Current marital status						
Married	16.0	16.7	12.6	18.7	18.5	19.8
Not married	84.0	83.3	87.4	81.3	81.5	80.2
Selected current primary diagnosis and ICD-9-CM code						
Malignant neoplasms .140–208	6.4	7.5	*0.8	4.1	5.0	0.4
Mental disorders .290–319	8.8	9.3	*6.2	10.4	8.6	18.0
Diseases of the circulatory system .390–459	39.6	39.2	41.3	34.1	34.9	30.9
Cerebrovascular disease .430-436	12.8	13.2	*10.8	13.1	14.2	8.6
Fracture of neck of femur .820	6.6	6.7	*6.1	4.0	3.5	6.0

[1] Includes a small number of residents admitted in January 1986.
[2] Includes homes dually certified as skilled nursing facilities and intermediate care facilities.

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

Table 10. Percent of nursing home residents 65 years of age and over at admission, transferred from short-stay hospitals in 1977 and in 1985, by type of dependency in activities of daily living and facility certification; percent distribution by number of dependencies, and average number of dependencies, according to facility certification: United States, 1977 and 1985

Functional status	1977			1985[1]		
		Certification			Certification	
	All residents	Skilled nursing facility[2]	Not certified as a skilled nursing facility	All residents	Skilled nursing facility[2]	Not certified as a skilled nursing facility
Type of dependency			Percent			
Requires assistance in bathing	92.2	92.9	88.5	95.8	96.9	90.9
Requires assistance in dressing	79.0	81.7	66.4	85.8	88.5	74.5
Requires assistance in using toilet room	65.2	66.9	57.1	76.5	80.9	57.9
Mobility—walks with assistance or is chairfast or bedfast	80.5	82.0	73.6	84.0	86.6	73.0
Continence—difficulty with bowel and/or bladder control	50.0	51.9	40.9	57.4	60.9	42.4
Requires assistance in eating	37.3	40.1	24.2	47.7	50.8	34.9
Number of dependencies			Percent distribution			
Total	100.0	100.0	100.0	100.0	100.0	100.0
None	3.7	3.3	5.3	2.7	1.9	6.0
1	7.8	6.2	15.4	5.0	3.4	11.4
2	12.6	12.0	15.9	7.8	7.3	9.8
3	9.0	9.9	4.7	7.6	6.4	12.5
4	17.6	17.2	19.4	18.4	17.8	21.0
5	22.0	21.6	23.9	21.2	22.7	14.9
6	27.3	29.8	15.4	37.4	40.4	24.4
			Average number			
Average number of dependencies	4.0	4.2	3.5	4.5	4.6	3.7

[1] Includes a small number of residents admitted in January 1986.
[2] Includes homes dually certified as skilled nursing facilities and intermediate care facilities.

Appendixes

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Appendix I
Sources of data

National Hospital Discharge Survey methodology

Source and description

The National Hospital Discharge Survey samples the records of inpatients discharged from noninstitutional hospitals, exclusive of military and Veterans Administration hospitals, located in the 50 States and the District of Columbia. Only hospitals with six beds or more for patient use and those in which the average length of stay for all patients is less than 30 days are included in the survey. Discharges from Federal hospitals are excluded.

The National Master Facility Inventory of Hospitals (NMFI) is the universe from which the NHDS sample is drawn. The original universe for the survey consisted of 6,965 short-stay hospitals contained in the 1963 NMFI. New hospitals were sampled for inclusion in the survey in 1972, 1975, 1977, 1979, 1981, 1983, and 1985.

The number of hospitals participating in the survey varies from year to year, as do the number of abstracts of medical records provided by participating hospitals. This is because each year some of the sampled hospitals refuse to participate in the survey or are found to be out of scope, either because they have gone out of business or fail to meet the definition of a short-stay hospital. In all, 558 hospitals were sampled in 1985. Of these hospitals, 82 refused to participate and 62 were out of scope. The 414 participating hospitals provided approximately 194,000 abstracts of medical records.

The medical record data consist of items relating to the personal characteristics of the patient, including birth date, sex, race, and marital status (but not name and address); administrative information, including admission and discharge dates, discharge status, and medical record number; and medical information, including diagnoses and surgical and nonsurgical operations or procedures. Since 1977, patient ZIP Code, expected source of payment, and dates of surgery have also been collected.

Sample design

All hospitals with 1,000 beds or more in the universe of short-stay hospitals are selected with certainty in the sample. All hospitals with fewer than 1,000 beds are stratified, the primary strata being 24 size-by-region classes. Within each primary stratum, allocation of the hospitals in the sample is made through a controlled selection technique, so that hospitals in the sample are properly distributed with regard to type of ownership and geographic division. Sample hospitals are drawn with probabilities ranging from certainty for the largest hospitals to 1 in 40 for the smallest hospitals.

Until 1985, all sample discharges were selected using the daily listing sheet of discharges as the sampling frame. These discharges were selected using a random technique, usually on the basis of the terminal digit or digits of the patient's medical record number. The within-hospital sampling ratio for selecting sample discharges varied inversely with the probability of selection of the hospital. Sample selection and abstraction of data from the face sheet and discharge summary of the medical records were performed by the hospital staff or by representatives of the National Center for Health Statistics, after which the completed forms were forwarded to NCHS for coding, editing, and weighting.

In 1985, two data collection procedures were used in the NHDS. The first was the traditional manual system of sample selection and data abstraction previously described. The second was an automated method used in approximately 17 percent of the sample hospitals, which involved the purchase of data tapes from commercial abstracting services. For the automated hospitals, tapes containing machine-readable medical record data are subjected to NCHS sampling, editing, and weighting procedures. A detailed description of the automated process is to be published.

Presentation of estimates

Statistics from NHDS are derived using a complex estimating procedure. The basic unit of estimation is the sample inpatient discharge abstract. The estimating procedure used to produce essentially unbiased national estimates in NHDS has three principal components: inflation by reciprocals of the probabilities of sample selection, adjustment for nonresponse, and ratio adjustment to fixed totals. These components of estimation are described in appendix I of two earlier publications (NCHS, 1967a and 1967b).

As in any survey, results are subject to nonsampling or measurement errors, which include errors resulting from

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NOTE: A list of references follows the text.

hospital nonresponse, missing abstracts, information incompletely or inaccurately recorded on the abstract forms, and processing errors. For example, the age and sex of the patient are not stated on the hospital records for about one-half of 1 percent of the discharges. Imputations of these missing items are made by assigning the patient an age or sex consistent with the age or sex of other patients with the same diagnostic code.

If the dates of admission or discharge are not given and cannot be obtained from the monthly sample listing sheet transmitted by the sample hospital, a length of stay is imputed by assigning the patient a length of stay characteristic of those of other patients of the same age. About one-tenth of 1 percent of the records are missing the date of admission or discharge.

National Nursing Home Survey methodology

Source and description of data

The National Nursing Home Survey (NNHS) is a cross-sectional nationwide survey of nursing homes, their residents, discharges, and staff conducted by the National Center for Health Statistics. The most recent survey, which was conducted from August 1985 through January 1986, was the third of a continuing series of nursing home surveys. The first survey was conducted from August 1973 through April 1974, and the second was conducted from May through December 1977.

In this report only data from the current and discharged resident surveys of the 1977 and 1985 NNHS are presented. The NNHS, however, involved not only data on residents and discharges but also on nursing homes and staff. Resident data were collected in personal interviews with a nurse familar with the care provided to the resident. The nurse relied on the medical record and personal knowledge of the resident. Discharge data were collected by personal interview with nursing home staff, who based their response on information recorded in the medical record. Additional data about current and discharged residents were obtained by telephone interviews with next of kin in the 1985 survey only.

The scope of the 1977 NNHS encompassed all types of nursing homes, including personal care and domiciliary care homes. The sample of 1,698 facilities was selected from 23,105 nursing homes in the sampling frame, which consisted of all homes listed in the 1973 NMFI and those opening for business between 1973 and December 1976. Data were obtained from 1,451 facilities, 13,634 staff providing direct services to residents, 7,033 residents, and 5,142 discharged residents. Response rates were 95 percent for facilities, 85 percent for expenses, 81 percent for staff, 99 percent for residents, and 97 percent for discharges.

The scope of the 1985 NNHS was similar in that it included all types of nursing homes. The sample of 1,220 homes was selected from a sampling frame of 20,479 nursing and related care homes. The frame consisted of all homes in the 1982 NMFI, homes identified in the 1982 Complement Survey of the NMFI as "missing" from the 1982 NMFI, facilities that opened for business from 1982 through June 1984, and hospital-based nursing homes identified in the records of the Health Care Financing Administration. Data were obtained from 1,079 facilities, 2,763 registered nurses, 5,243 residents, and 6,023 discharges. Response rates were 93 percent for facilities, 68 percent for expenses, 80 percent for registered nurses, 97 percent for residents, 95 percent for discharges, and 90 percent for next of kin.

Sample design

The sampling was basically a stratified two-stage probability design. The first stage was the selection of facilities, and the second stage was a selection of residents, discharges, and staff from the sample facilities. In the 1977 survey, 24 primary types of service-size strata were employed in the selection of facilities. Homes of originally unknown bed size were also included in the sample. (For a more detailed description of the survey design of the 1977 NNHS, see NCHS, 1979.) In the 1985 NNHS, 20 certification-size primary strata were used in the selection of facilities. (For a more detailed description of the survey design of the 1985 NNHS, see Shimizu, 1987.)

The second stage sampling of residents and discharges was carried out by the interviewers at the time of their visits to facilities, in accordance with specific instructions given for each sample facility. The sample frame for residents was the total number of residents on the register of the facility on the evening prior to the day of the survey. Residents who were physically absent from the facility because of overnight leave or a hospital visit but who had a bed maintained for them at the facility were included in the sample frame. In the 1977 survey, an average of five residents per facility were selected. In the 1985 survey, a sample of five or fewer residents per facility were selected.

The sampling frame for discharges in the 1985 NNHS was the total number of persons discharged alive or dead during the 12 months prior to the survey date. The sampling frame for discharges in the 1977 NNHS was the total number of persons discharged alive or dead during calendar year 1976. Persons who were discharged more than once during these 12-month periods were listed for each discharge. In 1985, 91 of the sampled discharges were listed more than once in the same home. It is also possible that some current residents were included in the discharge sampling frame who were discharged during the 12 months prior to the survey and then readmitted to the sample nursing home. In 1985, 45 sampled discharges were also included in the current resident sample. In the 1977 survey, an average of five discharges per facility were selected. In the 1985 survey, a sample of six or fewer discharges per facility were selected.

NOTE: A list of references follows the text.

Presentation of estimates

Because the design of the NNHS is a complex, multistage probability sample, it is necessary to reflect these complex procedures in the derivation of estimates. The NNHS estimates presented in this report are based upon sample person counts weighted to produce national estimates. The estimating procedure used to produce these estimates has three principal components: inflation by reciprocals of the probabilities of sample selection, adjustment for nonresponse, and ratio adjustment to fixed totals.

Because NNHS estimates are based on a sample, they may differ somewhat from the figures that would have been obtained had a complete census been taken using the same survey and processing procedures. To the extent possible, sampling and nonsampling errors were kept to a minimum by methods built into the survey procedures.

Descriptive material on data collection, field procedures, and questionnaire development in the NNHS have been published, as well as a detailed description of the sample design, estimation procedure, and qualifications of the data (NCHS, 1979 and NCHS, 1989).

NOTE: A list of references follows the text.

Appendix II
Definitions of terms

Diagnosis-related groups

The DRG's referred to in this report were produced using the DRG program available in the summer of 1983 and are identical to those in the August 31, 1984, issue of the *Federal Register*. This is a computer program that groups patients into DRG's based on diagnostic, surgical, and patient information. The program is maintained and is commercially available at Health Systems International (DRG Support Group, 100 Broadway, New Haven, Conn. 06511). However, the actual program used to produce estimates in this report was obtained from the Health Care Financing Administration. For NHDS estimates, the entire NHDS file was used to produce estimates, including outliers. No data were excluded or trimmed because of an abnormal length of stay. This was also true for NNHS estimates of residents by DRG categories.

National Hospital Discharge Survey—terms relating to hospitalization

Hospitals—Short-stay specialty and general hospitals have six beds or more for inpatient use and an average length of stay of less than 30 days. Federal hospitals and hospital units of institutions are not included.

Patient—A person who is formally admitted to the inpatient service of a short-stay hospital for observation, care, diagnosis, or treatment is considered a patient. In this report, the number of patients refers to the number of discharges during the year, including any multiple discharges of the same individual from one short-stay hospital or more. The terms "patient" and "inpatient" are used synonymously.

Discharge—Discharge is the formal release of a patient by a hospital; that is, the termination of a period of hospitalization by death or by disposition to place of residence, nursing home, or another hospital. The terms "discharge" and "patient discharge" are used synonymously.

Average length of stay—The average length of stay is the total number of patient days accumulated at the time of discharge by patients discharged during the year divided by the number of patients discharged.

Age—The patient's age refers to age at the last birthday prior to admission to the hospital inpatient service. To approximate the Medicare population, estimates of patients age 65 years and over only are presented in this report.

Waiver status—Waiver status refers to whether or not the State in which the hospital is located has a waiver from participation in the Medicare prospective payment system. During 1982–85, four States had waivers from PPS participation because they were participating in demonstrations of other payment systems. These four States were: Maryland, Massachusetts, New Jersey, and New York. All remaining States are included in the "PPS States" category.

Discharge status—The discharge status of a patient upon the termination of a period of hospitalization is classified according to one of seven categories in this report. The "routinely discharged home" category consists of patients who returned to their previous place of residence after discharge, including patients discharged to private homes and those discharged to nonmedical residential facilities, such as prisons, orphanages, and other nonmedical custodial care facilities. The "left against medical advice" category comprises patients who refused further medical care and left the hospital, whether or not a release of responsibility statement was signed, and patients who left without informing any members of the medical staff. The "discharged, transferred to another short-term hospital" category refers to patients who were transferred to another short-term hospital for short-term care. The "discharged, transferred to long-term care institution" category consists of patients transferred to a nursing home, chronic disease hospital, or other long-term care facility. Deaths refers to patients who died during an inpatient stay.

National Nursing Home Survey—terms relating to nursing homes

Facility—All types of nursing and related care homes, including personal care and domiciliary care homes, in the conterminous United States were included in the 1977 and 1985 National Nursing Home Surveys. A nursing home must have three beds or more set up for use by residents and may be either free-standing or a distinct unit of a larger facility.

Waiver status—see National Hospital Discharge Survey—terms relating to hospitalization: Waiver status.

Certification—Certification refers to the facility certification under Medicare and/or Medicaid.

Medicare—Medicare refers to the medical assistance provided in title XVIII of the Social Security Act. Medicare is a health insurance program administered

by the Social Security Administration for persons aged 65 years and over and for disabled persons who are eligible for benefits.

Medicaid—Medicaid refers to the medical assistance provided in title XIX of the Social Security Act. Medicaid is a State-administered program for the medically indigent.

Skilled nursing facility—Skilled nursing facility refers to certification as a skilled nursing facility under Medicare, under Medicaid, or under both programs.

Intermediate care facility—Intermediate care facility refers to certification as an intermediate care facility under Medicaid.

Not certified—Not certified refers to facilities that are not certified as providers of care under either Medicare or Medicaid.

National Nursing Home Survey—terms relating to residents

Resident—A resident is a person on the roster of the nursing home as of the night before the survey. All residents for whom beds are maintained are included, even those on overnight leave or in a hospital.

Hospitalization status—Hospitalization status refers to whether or not the resident was admitted to the nursing home from a short-stay hospital.

Medicare status last month—Medicare status last month refers to whether Medicare funds were the primary or the secondary source of payment for care in the last completed calendar month prior to the survey. Persons who did not use Medicare funds in the last completed calendar month before the survey are in the "No Medicare used last month" category. This category describes residents who used the following payment sources in the last month: own income or family support, Medicaid, other government assistance or welfare, religious organizations, foundations, volunteer agencies, Veterans Administration contracts, initial payment arrangements, life care arrangements, miscellaneous sources, and no-charge arrangements.

Length of stay since admission—Length of stay since admission refers to the resident's period of stay, from the date of the most recent admission to the facility to the date of the survey interview.

Demographic items

Age—The age of the resident is age on the day of the survey, as calculated from the date of birth.

Race—Race refers to the racial background as reported by the nursing home staff respondent.

Functional status

Activities of daily living—In this report, the activities of daily living are six everyday activities (bathing, continence, dressing, eating, mobility, and using the toilet room) for which the nursing home staff respondent reported the resident's current performance in terms of need for the help of special equipment or another person.

Number of dependencies in activities of daily living—The number of dependencies in activities of daily living, based on the work of Dr. Sidney Katz (Katz and Akpom, 1976), is a measure that summarizes the level of dependency in performing the six activities of daily living. The following criteria are used in classifying a resident as dependent:

Bathing—Resident requires assistance.

Dressing—Resident requires assistance or does not dress.

Using the toilet room—Resident requires assistance or does not use toilet room.

Mobility—Resident requires assistance, is chairfast, or is bedfast.

Continence—Resident has difficulty controlling bowels, bladder, or both or has an ostomy.

Eating—Resident requires assistance, including tube or intravenous feeding.

Diagnoses—One or more diseases or injuries (or some factor that influences health status and leads to contact with health services that is not itself a current illness or injury) were listed by the attending physician on the resident's medical record. In 1977, the primary diagnosis was the one condition reported by the nursing home staff respondent as the major diagnosis noted at the resident's last examination. The list of conditions corresponded to that in the Eighth Revision International Classification of Diseases, Adapted for Use in the United States (NCHS, 1967). The respondent reported the information based on the resident's medical record. In 1985, diagnoses were those recorded at the time of the survey. All diagnoses were transcribed in the order listed. Each sample resident was assigned a maximum of eight 5-digit codes according to the International Classification of Diseases, 9th Revision, Clinical Modification (USPHS and HCFA, 1980). The primary diagnosis is the coded diagnosis identified as the primary diagnosis or first listed on the medical record.

Hospital length of stay—The average hospital length of stay is the total number of nights spent in a hospital during the stay preceding nursing home admission for residents as reported by nursing home staff, divided by the number of residents admitted from hospitals. The average hospital length of stay excludes cases for which the number of nights spent in a hospital is missing.

National Nursing Home Survey—terms relating to discharges

Discharge—A discharge is a person who was formally discharged from a nursing home during the appropriate discharge reference period. Both live and dead discharges

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NOTE: A list of references follows the text.

are included. Theoretically, the same person can be counted more than once if discharged more than once from a nursing home during the discharge reference period.

Discharge status—The discharge status of a resident upon the termination of a stay is classified into one of three categories in this report. "Discharged dead" refers to discharges who died during the sampled nursing home stay. The category "Discharged alive to a hospital" refers to discharges who were transferred to a short-stay hospital for short-term care. All remaining discharges were classified in the "Discharged alive to another location" category, including those for whom it was unknown whether they were discharged alive.

Hospitalization status—see *National Nursing Home Survey—terms relating to residents: Hospitalization status.*

Medicare status at discharge—see *National Nursing Home Survey—terms relating to residents—Medicare status last month.* The time frame for Medicare status for discharges in 1976 and 1985 was at the time of discharge rather than last month (for current residents).

Health status

Activities of daily living—Data on activities of daily living were collected for discharges in the areas of continence and mobility only, based on information in the medical record or on performance at the time of discharge.

Continence

No difficulty controlling bowels or bladder—The discharge did not have any difficulty in controlling either bowels or bladder at the time of discharge.

Difficulty controlling bowels—The discharge had difficulty controlling bowels at the time of discharge.

Difficulty controlling bladder—The discharge had difficulty controlling bladder at the time of discharge.

Ostomy in either bowels or bladder—The discharge had undergone a surgical procedure that resulted in the creation of an artificial opening for the elimination of waste.

Mobility

Walks with or without assistance—The discharge was able to walk at the time of discharge, either with or without assistance of special equipment or another person. This excludes those discharges who were chairfast or bedfast or whose status was unknown.

Chairfast—The discharge was confined to a chair at the time of discharge.

Bedfast—The discharge was confined to a bed at the time of discharge.

Partial index of dependency in activities of daily living—The partial index is modeled after the seven-level hierarchy of dependence developed by Dr. Sidney Katz (Katz et al., 1963). The partial index is a measure that permits overall classification of individuals according to their dependency at the time of discharge in performing the two activities of daily living just described. The resident index covers six activities; the partial index covers only two, because information on the others was not available in the medical records of discharges. The partial index has four categories, with categories 2 and 3 approximating the category "dependent in only one activity" in the resident index. Two activities, ordered in hierarchy sequence, are the criteria for classifying a discharge as dependent:

Mobility—Discharge was chairfast or bedfast.

Continence—Discharge had difficulty controlling bowels, bladder, or both or had an ostomy.

Diagnoses—see *National Nursing Home Survey—terms relating to residents: Diagnoses.* The time frame for primary diagnosis of discharges in 1976 and 1985 was at admission rather than currently (for current residents).

NOTE: A list of references follows the text.

Appendix III
Notes on age-adjusted rates

The age-adjusted rates presented in this report were computed by the direct method; that is, by applying the age-specific rates to the standard population distributed by age (Fleiss, 1981). To age-adjust data by this method, two basic pieces of information are needed:

- Age-specific rates for the population being studied, say $C_1, C_2, \ldots, C_n$.
- The distribution across the same age groups for a selected standard population, say $P_{s1}, P_{s2}, \ldots, P_{sn}$. For this report, the standard population chosen was the total resident population aged 65 years or over in nursing homes of the United States, as enumerated in 1985 in the National Nursing Home Survey.

The direct adjusted rate is then simply

$$C \text{ direct} = \sum_{i=1}^{n} C_i P_{si}$$

As an example, the age distribution of the standard population (total 1985 resident population aged 65 years or over in nursing homes in the United States) and the 1985 age-specific number of ADL dependencies for hospitalized residents in 1977 and 1985 are shown in table I.

The conclusion drawn from the comparison of these age-adjusted rates is that the average number of ADL dependencies for the 1985 study population admitted from short-stay hospitals (4.5) is greater than that for their 1977 counterparts (4.2).

Standard errors were not computed for the age-adjusted statistics. However, the standard error for an adjusted rate may be approximated using the standard error of the nonadjusted statistics, presented in appendix IV.

NOTE: A list of references follows the text.

Table I. Average age-adjusted number of dependencies in activities of daily living for elderly residents admitted from short-stay hospitals by year of admission, distribution, and age: United States, 1977 and 1985

Age	Distribution for standard population P_{si}	1977		1985	
		C_i	$C_i P_{si}$	C_i	$C_i P_{si}$
65 years and over	1.000000	...	4.096940	...	4.482171
65–74 years	0.160861	3.9	0.627358	4.3	0.691702
75–84 years	0.386103	4.0	1.544412	4.3	1.660243
85–89 years	0.224139	4.3	0.963798	4.5	1.008626
90 years and over	0.228898	4.2	0.961372	4.9	1.121600

Appendix IV
Notes on standard errors and statistical tests

Standard errors

The three surveys used as primary sources for data contained in this report are all based on multistage probability samples. The sampling errors for each survey were calculated taking their complex sample designs into account.

For the National Hospital Discharge Survey, estimates of sampling variability were calculated directly. For the 1985 National Nursing Home Survey, estimates of sampling variability were calculated using half-sample replication. A description of the development and evaluation of the replication technique for error estimation has been published (NCHS, 1966 and 1969). Estimates of sampling variability for the 1977 NNHS were calculated using Taylor series linearizations. Descriptions of this method for obtaining approximations of standard errors in large samples have been published (Kendal and Stuart, 1963; Woodruff, 1971; and Folsom, Bayless, and Shah, 1971).

To derive error estimates that would be applicable to a wide variety of statistics and could be prepared at a moderate cost, several approximations were required.

Rather than calculate standard errors for particular estimates S_x, the calculated variances for a wide variety of estimates for each of these surveys were fitted into curves using the empirically determined relationship between the size of an estimate X and its relative variance (rel var X). This relationship is expressed as

$$\text{rel var}\, X = \frac{S^2_x}{X^2} = a + \frac{b}{X}$$

where a and b are regression estimates determined in an iterative procedure.

The relative standard error is then derived by calculating the square root of the relative variance curve. The relative standard error estimates used for this report were read directly from these curves. Because of the relationship between the relative standard error of an estimate and the estimate itself, the standard error S_x can be derived from its relative standard error by multiplying the relative standard error of the estimate by the estimate itself.

General relative standard error curves for NHDS estimates of discharges in 1982 and 1985 are presented in figure I. General relative standard error curves for NNHS estimates of current residents in 1977 and 1985 are presented in figure II, as are the general relative standard error curves for NNHS estimates of discharges in 1976 and in 1985. An example of the use of these figures follows.

In 1985, 189,900 residents aged 65 years and over were transferred from short-stay hospitals (table 5). In curve C of figure II, the estimate of 189,900 residents has a relative standard error of 5.2 percent or a standard error of 9,875. Figure I can be used in a similar manner to calculate the relative standard error and standard error for hospital discharges.

Table II presents the standard errors of average length of stay for hospital discharges in 1982 and 1985 from the NHDS. Table III presents the standard errors of the average number of ADL dependencies for residents presented in this report.

Statistical tests

In this report, the determination of statistical inference of rates (those that were not age-adjusted) and proportions is based on the two-tailed t-test with 20 degrees of freedom. At the 0.05 (5 percent) level, the critical value for the t-test is 2.09. For more details on hypothesis testing performed for NHDS and NNHS, see NCHS, 1989, and Shimizu, 1987.

Table II. Approximate standard errors of average length of stay by number of discharges: 1982 and 1985 National Hospital Discharge Surveys

Year and number of discharges	Average length of stay			
	4 days	6 days	8 days	10 days
	Standard error in days			
1982				
500,000	0.2	0.3	0.3	0.4
1,000,000	0.2	0.2	0.3	0.4
5,000,000	0.1	0.2	0.2	0.3
10,000,000	0.1	0.2	0.2	0.3
30,000,000	0.1	0.1	0.2	0.2
1985				
500,000	0.1	0.2	0.3	0.3
1,000,000	0.1	0.2	0.2	0.3
5,000,000	0.1	0.1	0.2	0.3
10,000,000	0.1	0.1	0.2	0.2
30,000,000	0.1	0.1	0.1	0.2

NOTE: A list of references follows the text.

Table III. Standard errors of average number of dependencies in activities of daily living for elderly residents entering nursing homes, by year and selected characteristics: 1977 and 1985 National Nursing Home Surveys

Characteristic	*1977*	*1985*[1]
	Standard errors of average number of dependencies	
All elderly residents entering nursing homes in year of survey	0.05	0.04
Hospitalization status		
Admitted from a short-stay hospital	0.07	0.06
Not admitted from a short-stay hospital	0.06	0.07
Admitted from a short-stay hospital		
Medicare status in month before interview:		
Medicare primary or secondary source	0.13	0.17
No Medicare used	0.07	0.07
Facility certification:		
Skilled nursing facility[2]	0.07	0.07
Not certified as a skilled nursing facility	0.16	0.20
Waiver status:		
Waiver State	...	0.15
Prospective payment system State	...	0.07

[1]Includes a small number of residents admitted in January 1986.
[2]Includes facilities dually certified as skilled nursing facilities and intermediate care facilities.

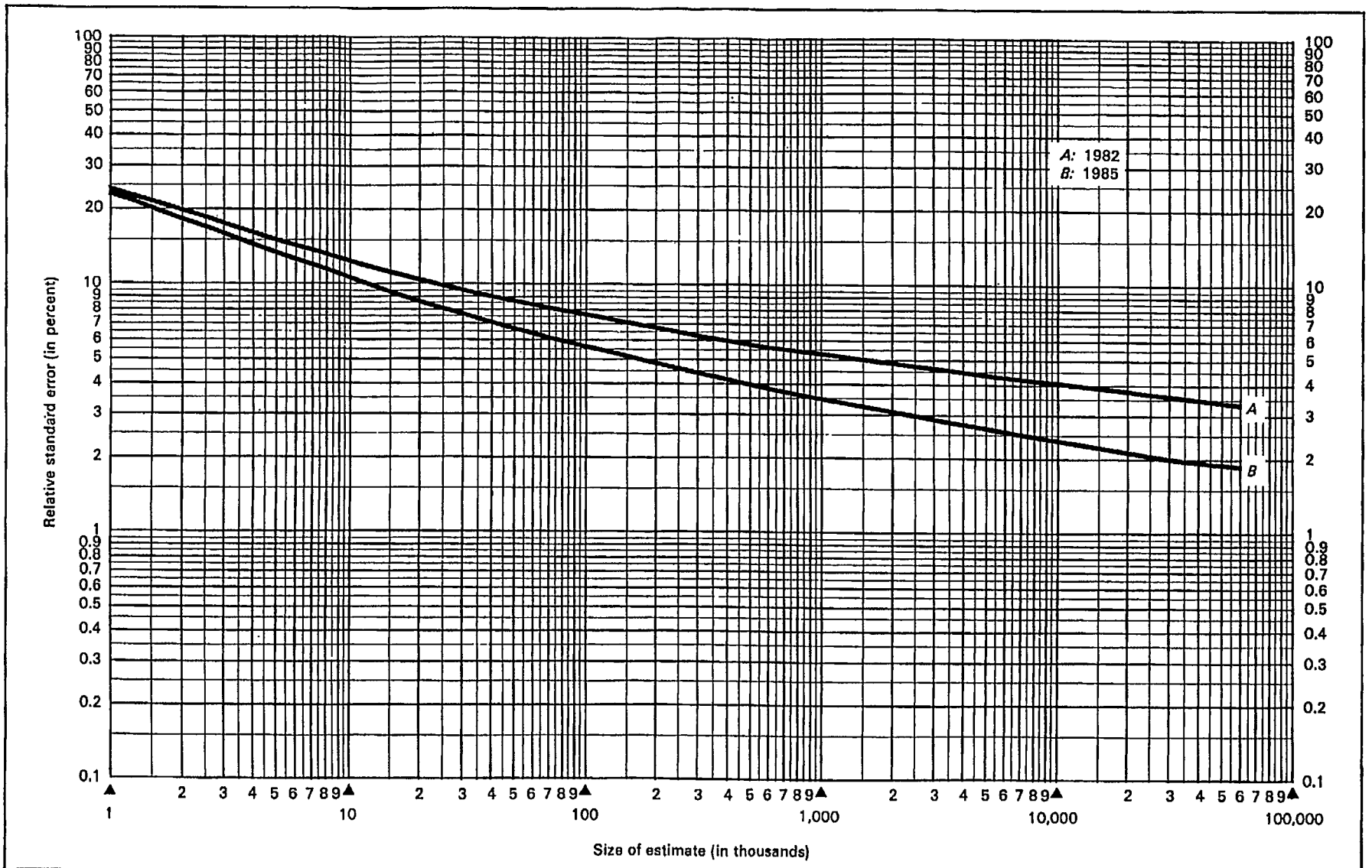

Figure I. Relative standard errors of estimated number of discharges from short-stay hospitals: 1982 and 1985 National Hospital Discharge Surveys

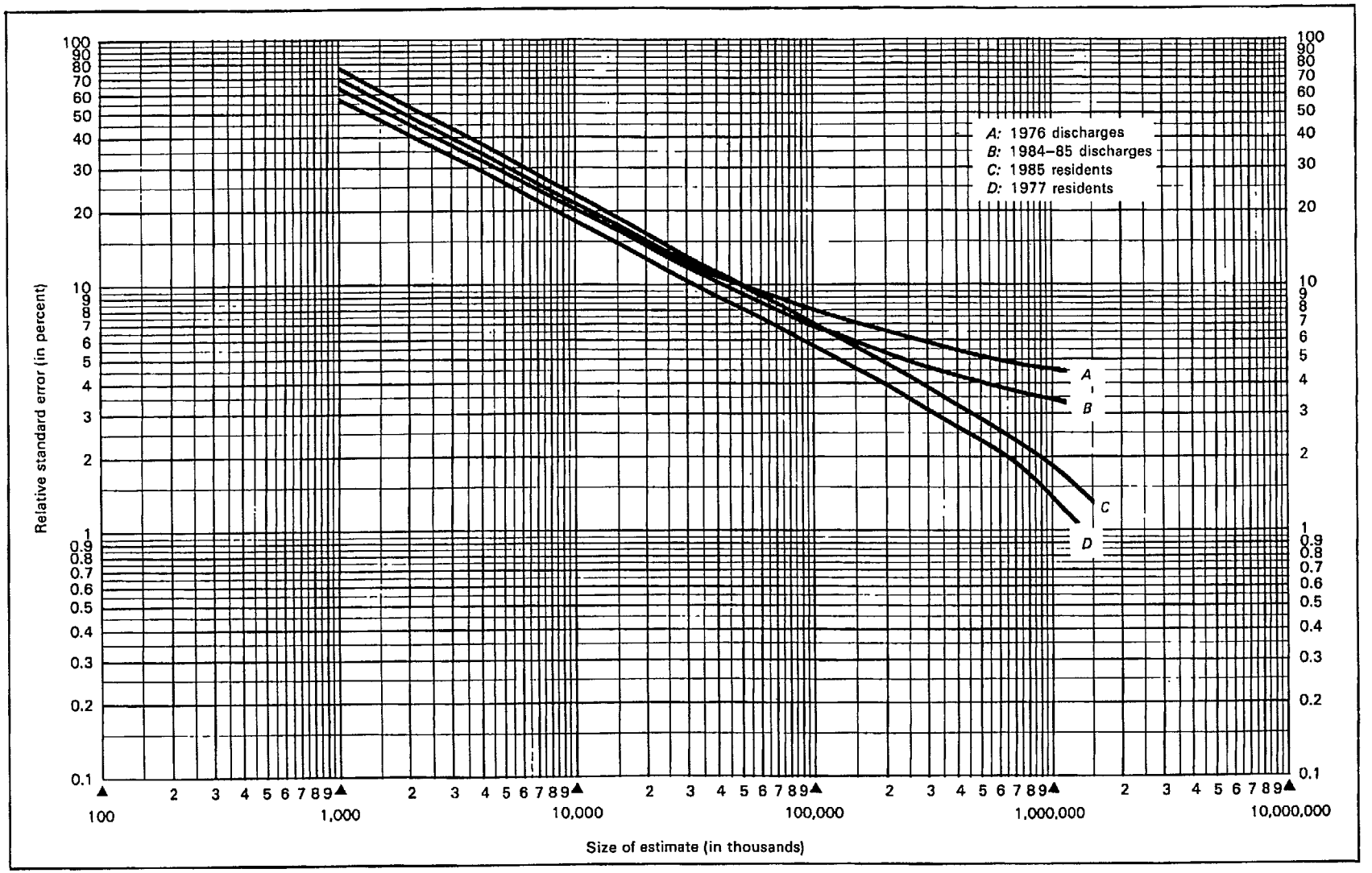

Figure II. Relative standard errors of estimated number of residents in 1977 and 1985 and of number of discharges in 1976 and 1984–85: 1977 and 1985 National Nursing Home Surveys

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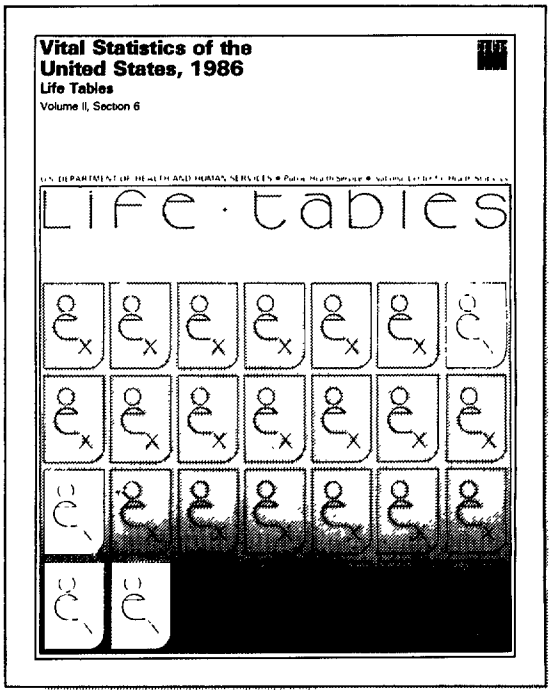

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Scientific and Technical Information Branch
National Center for Health Statistics
Centers for Disease Control
Public Health Service
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