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An Overview of Nursing Home Facilities: Data from the 1997 National Nursing Home Survey

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Abstract

Objective—This report presents estimates on the number and distribution of nursing home facilities, their services, current residents, and discharges in the United States during 1997.

Methods—Data presented in this report are estimates based on a sample of nursing home facilities, residents, and discharges from the 1997 National Nursing Home Survey (NHHS). The survey collects information about providers and recipients of care from nursing home facilities. NHHS has been periodically conducted by the National Center for Health Statistics since 1973.

Results—In 1997, there were an estimated 1.6 million current residents and 2.4 million discharges from 17,000 nursing homes nationwide. These facilities were predominately proprietary and certified by both Medicare and Medicaid. There was an average of 107 beds per nursing home with an occupancy rate of 88 percent and a discharge rate of 130 patients per 100 beds. The majority of nursing home residents and discharges were elderly, white, and female.

Keywords: facility characteristics • nursing home • current residents • utilization • discharges

Introduction

Only a small percent of the elderly population resides in nursing homes in the United States. However, as the huge number of baby boomers reach old age, an increased need for nursing home care in the future is inevitable. Elderly people face more complex health issues that often lead to debilitation or disability and thus the need for long-term care. According to Beck and Chumbler (1), the number of consumers needing long-term care services, including nursing home care, will more than triple during the next 30 years. Because nursing homes are an important health care provider for the elderly, information on their distribution, utilization, and services are vital.

Nursing homes vary significantly in size, services, and the population served. This report presents information on nursing home facilities, their type, ownership, chain affiliation, certification, size, beds, geographic region, and services. The report also presents the following data on utilization: number of current residents, discharges, admissions, admissions per bed, occupancy rates, and employees. The number and rates per 100 beds of full-time and part-time equivalent employees are shown by occupational category.

The 1997 National Nursing Home Survey is the fifth in a series of nationwide sample surveys of nursing homes that have been conducted by the National Center for Health Statistics (NCHS). The survey collects information on nursing homes, their residents, discharges, and staff. Nursing homes are defined as facilities with three or more beds that routinely provide nursing care services. Facilities may be certified by Medicare or Medicaid, or not certified but licensed by the state as a nursing home. These facilities may be freestanding or a separate unit of a larger facility. Other surveys, such as the Nursing Home Component (NHC) of the Medical Expenditure Panel Survey (MEPS) conducted by the Agency for Healthcare Research and Quality (AHRQ), use a narrower definition of nursing home that requires the home to be certified and to provide 24-hour skilled nursing care.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
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CENTERS FOR DISEASE CONTROL AND PREVENTION

Methods

The data in this report were obtained from the 1997 National Nursing Home Survey (NNHS). The sampling frame for the 1997 survey was derived from a frame that consisted of all nursing home facilities identified in the 1991 National Health Provider Inventory (NHPI) (2) and updated with 1997 files of nursing homes. These updated files were obtained from the Health Care Financing Administration (HCFA) and other national organizations. A sample consisting of 1,488 nursing homes was selected.

Data collection for the 1997 NNHS was conducted between July and December 1997. Estimates in this report are based on the 1,406 responding facilities, 8,138 of their current residents, and 6,676 of their discharges. The sample of current residents was obtained by randomly selecting up to six residents who were on the nursing home rolls as of midnight the day prior to the day of the survey. The discharge sample consisted of residents who had been removed from the rolls of the facility (including those whose care ended because of death) during a designated month (between October 1996 and September 1997) that was randomly selected for each facility. A person discharged more than once from a nursing home during the discharge reference period might be counted more than once. Additional information on survey procedures are in the Technical notes section of this report.

NNHS collected information from each participating facility on a number of facility characteristics that include ownership, certification status, bed size, location, affiliation, and services provided. In addition, the survey also collects the following information for each current resident and discharge: demographic characteristics (age, sex, race, marital status), date of admission, discharge, primary and other diagnoses at admission and discharge and at the time of survey, source of payment, and functional status (activities of daily living and instrumental activities for daily living).

Results

Facility characteristics

In 1997, there were an estimated 17,000 nursing home facilities with a total of 1.8 million beds, 1.6 million residents, and 2.4 million discharges. These facilities varied by ownership, certification status, bed size, geographic region, affiliation, and by whether they are located in a metropolitan statistical area (MSA). Table 1 provides detailed information about these facility characteristics.

The proprietary sector was the largest portion of the nursing home industry, comprising 67 percent of all facilities (figure 1), and having the largest number of beds (1.2 million). Nonprofit nursing homes, on the other hand, accounted for 26.1 percent of all nursing facilities, while government and other-operated nursing homes accounted for about 8 percent of all facilities. Nearly all nursing homes (95.9 percent) had some form of certification in 1997. More than three-fourths of all facilities were certified by both Medicare and Medicaid. Only 4 percent of the 17,000 nursing homes were not certified. More information on certification status and nursing home characteristics can be found in table 2.

As shown in table 1, the average size of nursing homes was 107 beds. Seventy-nine percent of nursing home facilities were midsized (50–199 beds) and only 8 percent had more than 200 beds. By geographic region, the largest proportion of nursing homes were in the Midwest and South. Each of these regions accounted for 34.2 and 31.8 percent of facilities and 31.7 and 33 percent of all beds, respectively. Fifty-six percent of nursing homes were affiliated with other nursing homes in a chain. These facilities accounted for 56.9 percent of all beds, 56.5 percent of all residents, and 61 percent of all discharges. Sixty-two percent of the facilities were located in metropolitan statistical areas.

Utilization

The overall occupancy rate in nursing homes in 1997 was 88 percent (table 3). There was little or no variation in occupancy rate across facility characteristics. By ownership, the occupancy rate ranged from 86.8 for proprietary facilities to 93.1 percent for those owned by the government and other organizations. By bed size, nursing homes ranged from 83.7 percent for facilities with fewer than 50 beds to 88.7 percent for those with 100–199 beds and more than 200 beds, respectively. The regional occupancy rate ranged from 85.3 percent in the West to 94.6 percent in the Northeast.

Information was collected on the number of admissions to nursing homes during 1996, the calendar year prior to the year of the survey year. There were 1.8 million admissions and the admission rate per 100 beds was 100.1 for 1996. Both the number of admissions (1.7 million) and the admissions per 100 beds (96.4) has increased since 1994 (3). There were 130 discharges per 100 beds in nursing homes, and facilities with fewer than 50 beds had a discharge rate of 354.9 per 100 beds. The discharge rate for nursing homes in the West (223 per 100 beds) was twice the rate of the Northeast (112 per 100 beds).

Table 4 presents data by facility characteristics for 1,608,700 current residents. The vast majority of nursing home residents were 65 years and over (91 percent) and 46 percent were 85 years and older. The mean age for all current nursing home residents was 81 years. Women have historically accounted for 75 percent of residents in nursing homes. In 1997, women accounted for 72 percent of the total. The average age for women in nursing homes was 83 years while for men it was 76 years. The majority of nursing home residents were white (87 percent), and black and other races comprised 12 percent. The race was unknown for the remaining 1 percent.

The estimated 2,369,000 discharges from nursing homes in 1996–97 are shown in table 5. About 37 percent of

Table 1. Number and percent distribution of nursing homes, beds, current residents, and discharges by selected facility characteristics: United States, 1997

Facility characteristic	Nursing homes		Beds			Current residents		Discharges	
	Number	Percent distribution	Number	Percent distribution	Beds per nursing home	Number	Percent distribution	Number	Percent distribution
All facilities	17,000	100.0	1,820,800	100.0	106.9	1,608,700	100.0	2,369,000	100.0
Ownership									
Proprietary	11,400	67.1	1,213,900	66.7	106.2	1,054,200	65.5	1,569,500	66.3
Voluntary nonprofit	4,400	26.1	465,400	25.6	104.7	422,700	26.3	681,900	28.8
Government and other	1,200	6.8	141,500	7.8	122.5	131,700	8.2	117,600	5.0
Certification									
Certified by Medicare and Medicaid	13,200	77.7	1,526,000	83.8	115.4	1,365,500	84.9	2,043,100	86.2
Certified by Medicare only	*800	*4.7	61,000	3.4	76.3	47,400	3.0	197,100	8.3
Certified by Medicaid only	2,300	13.6	184,700	10.1	79.9	156,300	9.7	100,000	4.2
Not certified	*700	*4.1	49,000	2.7	71.0	39,400	2.5	28,800	1.2
Bed size									
Less then 50 beds	2,200	12.9	74,200	4.1	33.7	62,000	3.9	263,200	11.1
50–99 beds	6,300	37.2	451,000	24.8	71.2	397,200	24.7	525,500	22.2
100–199 beds	7,200	42.2	941,500	51.7	131.1	835,200	51.9	1,206,600	50.9
200 beds or more	1,300	7.7	354,100	19.5	270.1	314,300	19.5	373,800	15.8
Census region									
Northeast	2,900	17.3	396,300	21.8	134.9	374,700	23.3	443,700	18.7
Midwest	5,800	34.2	577,100	31.7	99.1	498,200	31.0	676,300	28.6
South	5,400	31.8	600,300	33.0	111.0	525,000	32.6	697,100	29.4
West	2,900	16.8	247,100	13.6	86.4	210,700	13.1	551,900	23.3
Metropolitan statistical area (MSA)									
MSA	10,500	61.5	1,259,900	69.2	120.4	1,116,100	69.4	1,814,300	76.6
Not MSA	6,600	38.5	560,900	30.8	85.5	492,600	30.6	554,700	23.4
Affiliation[1]									
Chain	9,600	56.3	1,035,700	56.9	108.0	909,400	56.5	1,444,800	61.0
Independent	7,400	43.2	772,800	42.4	105.0	690,200	42.9	915,200	38.6

*Data should not be assumed reliable because the sample size is 30–59 or is greater than 59 but has a relative standard error over 30 percent.
[1]Excludes a small number of homes with unknown affiliation.
NOTE: Numbers may not add to totals because of rounding.

all discharges were men and 63 percent were women. At the time of discharge, the mean age of all discharges was 79 years. The average age for female discharges (81 years) was higher than for male discharges (76 years). According to the survey, 87.3 percent were white discharges and 10.4 percent were black and other races.

Employees

Employee data presented in this report are expressed in terms of full-time equivalent (FTE) employees. The number of full-time equivalent or full-time and part-time employees for selected occupational categories, was collected in the 1997 survey. When full-time and part-time employees were reported, they were converted to FTE employees. An estimated 1,434,100 FTE employees provided direct and indirect services to nursing home residents. Administrative, medical, and other staff categories are listed in table 6, along with the number and rate per 100 beds. The number of FTE administrative, medical, and therapeutic staff in nursing homes was approximately 99,700 and accounted for about 7 percent of the total FTE nursing home staff.

For this report, the nursing staff was divided into three categories: registered nurses, licensed practical or vocational nurses, and nurses' aides/orderlies. Nursing care was provided by an estimated 950,300 FTE nursing staff. The certified nurse aide is the largest category of staff in most nursing facilities (4). Certified nurse aides are responsible for any direct resident care not provided by a licensed health care professional. Nurses' aides/orderlies accounted for nearly two-thirds of the nursing staff. However, registered nurses accounted for only 15 percent of the nursing staff.

The staff-to-bed ratio for staff providing direct resident care in nursing homes was 57.7 per 100 beds. Employees providing nursing care had a ratio of 52.2 FTE's per 100 beds. Nurses' aides/orderlies had the highest ratio (33.9) followed by licensed practical nurses and registered nurses (10.6 and 7.8, respectively). The staff-to-resident ratio was 89.2 per 100

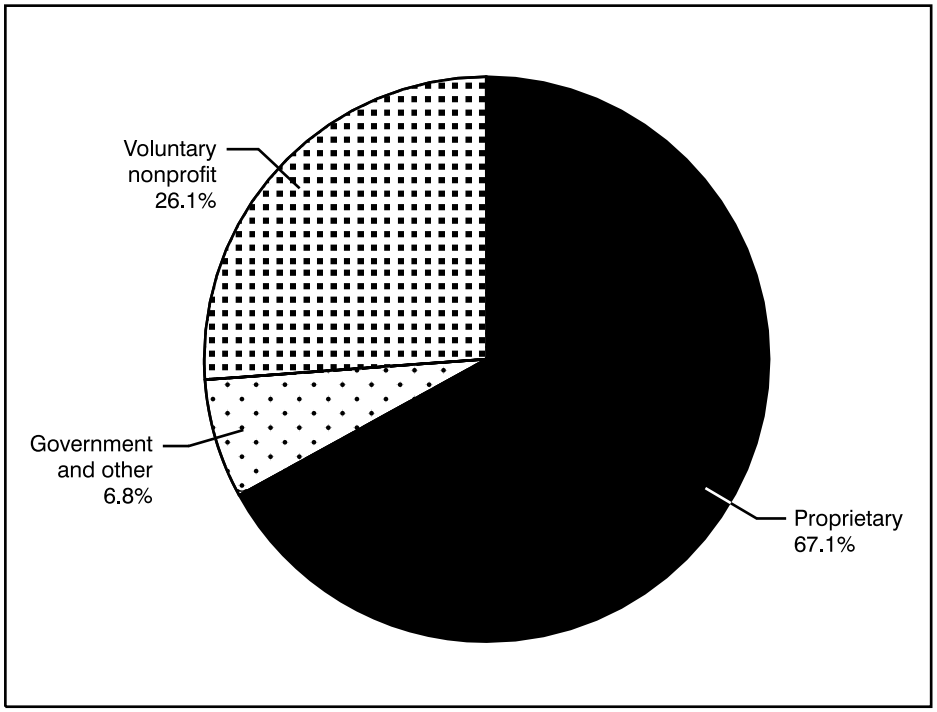

Figure 1. Percent distribution of nursing home facilities by ownership: United States, 1997

residents with nursing staff having a total rate of 59.1 per 100 residents and all other staff, excluding administrative, medical, and therapeutic staff, having a ratio of 23.9 per 100 residents.

The employees provide a variety of services and programs to nursing home residents. These services may include dental, home health, hospice, and mental health services (table 7). In 1997, almost all nursing homes reported providing nursing services (99.6 percent), medical services (96.9 percent), and personal care services that included activities of daily living (96.7 percent). The nonmedical services most frequently offered by nursing homes were nutrition (99.2 percent); social services (98.3 percent), which included assistance to residents and their families in handling social, environmental, and emotional problems; and physical therapy (97.1 percent). The least frequently offered services included

Table 2. Number of nursing homes by certification status and selected facility characteristics: Unites States, 1997

Facility characteristic	Total	Certified by			Not certified
		Medicare and Medicaid	Medicare only	Medicaid only	
			Number		
All facilities	17,000	13,200	*800	2,300	*700
Ownership					
Proprietary	11,400	9,100	*	1,600	*
Voluntary nonprofit	4,400	3,400	*	*	*
Government and other	1,200	700	*	*	*
Bed size					
Less then 50 beds	2,200	*1,100	*	*	*
50–99 beds	6,300	4,500	*	1,200	*
100–199 beds	7,200	6,400	*	*500	*
200 beds or more	1,300	1,200	*	*	*
Census region					
Northeast	2,900	2,600	*	*	*
Midwest	5,800	4,300	*	1,000	*
South	5,400	4,000	*	1,000	*
West	2,900	2,400	*	*	*
Metropolitan statistical area (MSA)					
MSA	10,500	8,500	*600	900	*500
Not MSA	6,600	4,700	*	1,400	*
Affiliation[1]					
Chain	9,600	8,100	*	900	*
Independent	7,400	5,100	*	1,400	*600

*Data do not meet standards of reliability or precision (sample size less than 30) and are therefore not reported. If shown with a number, data should not be assumed reliable because the sample size is 30–59 or is greater than 59 but has a relative standard error over 30 percent.

[1]Excludes a small number of homes with unknown affiliation.

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

Table 3. Occupancy rate, discharge rate, number of admissions, and admission rate of nursing homes by selected facility characteristics: United States, 1996–97

Facility characteristic	Occupancy rate, 1997[1]	Discharge rate per 100 beds, 1996–97	Admissions, 1996	Admissions per 100 beds, 1996
All facilities	88.3	130.1	1,822,100	100.1
Ownership				
Proprietary	86.8	129.3	1,223,100	100.8
Voluntary nonprofit	90.8	146.5	503,800	108.2
Government and other	93.1	83.1	95,300	67.4
Certification				
Certified by Medicare and Medicaid	89.5	133.9	1,554,300	101.9
Certified by Medicare only	77.6	322.6	172,400	282.1
Certified by Medicaid only	84.6	54.1	71,300	38.6
Not certified	80.5	58.9	24,100	49.2
Bed size				
Less then 50 beds	83.7	354.9	192,100	259.0
50–99 beds	88.1	116.5	412,400	91.4
100–199 beds	88.7	128.2	941,200	100.0
200 beds or more	88.7	105.6	276,400	78.1
Census region				
Northeast	94.6	112.0	336,100	84.8
Midwest	86.3	117.2	488,100	84.6
South	87.5	116.1	545,300	90.8
West	85.3	223.3	452,700	183.2
Metropolitan statistical area (MSA)				
MSA	88.6	144.0	1,381,800	109.7
Not MSA	87.8	98.9	440,300	78.5
Affiliation[2]				
Chain	87.8	139.5	1,158,100	111.8
Independent	89.3	118.4	654,900	84.7

[1]Occupancy rate is calculated by dividing residents by available beds.
[2]Excludes a small number of homes with unknown affiliation.

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

home health services (23 percent) and hospice services (72 percent).

Nursing home per diem rates

Table 8 shows the average basic daily charge for private-pay residents by the level of care of the facility as well as Medicare and Medicaid per diem rates. As expected, the average daily charge for private-pay residents increased as the level of care increased. Skilled care had the highest average daily charge of $136 per day. The average charge decreased to $107 for intermediate care and to $97 for residential care. Voluntary nonprofit nursing homes had the highest charge for skilled and intermediate levels of care. By region, homes in the Northeast tended to have higher charges than the other regions for all three levels of care. As expected, charges were higher in metropolitan statistical areas when compared to nonmetropolitan statistical areas. Average per diem rates for Medicare were higher than for Medicaid across all types of facility characteristics.

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Table 4. Number and percent distribution of current residents by age, sex, and race, according to selected nursing home characteristics: United States, 1997

Facility characteristic	All current residents	Age at interview					Sex		Race			
		Total	Under 65 years	65–74 years	75–84 years	85 years and over	Unknown	Male	Female	White	Black and other Total[1]	Black	Unknown
	Number	Percent distribution											
All facilities	1,608,700	100.0	8.5	12.3	32.8	45.9	*0.4	27.8	72.2	87.1	11.8	10.4	1.1
Ownership													
Proprietary	1,054,200	65.5	9.5	13.6	33.3	43.0	*0.5	28.2	71.8	85.3	13.5	11.9	1.2
Voluntary nonprofit	422,700	26.3	5.3	9.4	30.5	54.7	*	23.3	76.7	91.1	7.9	6.9	*
Government and other	131,700	8.2	11.0	11.7	36.6	40.5	*	39.6	60.4	88.4	10.4	*9.5	*
Certification													
Certified by Medicare and Medicaid	1,365,500	84.9	8.3	12.5	33.1	45.7	*	27.3	72.7	87.0	11.7	10.5	1.2
Certified by Medicare only	47,400	3.0	*	*	31.7	60.1	*	25.2	74.8	98.6	*	*	*
Certified by Medicaid only	156,300	9.7	12.3	13.6	30.1	43.1	*	31.1	68.9	83.0	16.4	14.0	*
Not certified	39,400	2.5	*	*	35.1	48.2	*	35.4	64.6	91.7	*	*	*
Bed size													
Less then 50 beds	62,000	3.9	*7.8	*11.4	30.6	49.9	*	29.9	70.1	90.8	*7.9	*	*
50–99 beds	397,200	24.7	7.7	12.0	31.9	48.0	*	28.1	71.9	90.2	9.3	8.0	*
100–199 beds	835,200	51.9	7.9	12.5	33.3	46.0	*	26.2	73.8	87.6	11.2	10.1	*1.2
200 beds or more	314,300	19.5	11.3	12.7	33.2	42.2	*	31.4	68.6	81.1	17.0	15.1	*
Census region													
Northeast	374,700	23.3	7.3	12.1	34.3	46.1	*	26.5	73.5	89.7	9.1	7.9	*
Midwest	498,200	31.0	8.5	11.0	31.1	48.6	*	27.8	72.2	91.3	7.8	7.2	*
South	525,000	32.6	8.7	13.5	33.8	43.6	*	28.0	72.0	82.3	16.9	16.4	*
West	210,700	13.1	10.1	12.9	32.0	44.8	*	30.0	70.0	84.3	13.1	7.6	*2.6
Metropolitan statistical area (MSA)													
MSA	1,116,100	69.4	9.4	12.5	32.6	45.1	*	27.2	72.8	85.4	13.2	11.8	1.4
Not MSA	492,600	30.6	6.6	12.0	33.5	47.6	*	29.3	70.7	91.1	8.4	7.2	*
Affiliation[2]													
Chain	909,400	56.5	9.1	13.5	32.9	44.0	*	28.1	71.9	86.8	12.1	10.7	*1.0
Independent	690,200	42.9	7.7	10.9	32.8	48.3	*	27.5	72.5	87.4	11.3	10.0	*1.3

*Data do not meet standards of reliability or precision (sample size less than 30) and are therefore not reported. If shown with a number, data should not be assumed reliable because the sample size is 30–59 or is greater than 59 but has a relative standard error over 30 percent.

[1]Includes races other than white or unknown.

[2]Excludes a small number of homes with unknown affiliation.

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

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Table 5. Number and percent distribution of discharges by age, sex, and race, according to selected nursing home characteristics: United States, 1997

Facility characteristic	All discharges	Age					Sex		Race			
		Total	Under 65 years	65–74 years	75–84 years	85 years and over	Unknown	Male	Female	White	Black and other Total[1]	Black	Unknown
	Number	Percent distribution											
All facilities	2,369,000	100.0	10.6	17.1	35.3	36.2	*0.7	36.9	63.1	87.3	10.4	8.2	2.3
Ownership													
Proprietary	1,569,500	66.3	10.4	17.9	34.4	36.3	*0.7	38.2	61.8	85.1	12.5	9.7	2.4
Voluntary nonprofit	681,900	28.8	10.8	14.6	36.7	37.8	*	33.4	66.6	93.2	5.9	4.7	*
Government and other	117,600	5.0	12.6	21.4	39.2	26.2	*	39.3	60.7	82.3	*9.0	*8.7	*
Certification													
Certified by Medicare and Medicaid	2,043,100	86.2	11.0	16.7	35.8	35.7	*0.7	37.9	62.1	86.7	11.2	8.9	2.1
Certified by Medicare only	197,100	8.3	*	*23.2	33.8	35.3	*	28.9	71.1	93.6	*	*	*
Certified by Medicaid only	100,000	4.2	*9.9	16.1	24.3	48.6	*	33.4	66.6	85.0	14.4	10.2	*
Not certified	28,800	1.2	*	*	*45.8	*37.7	–	32.8	67.2	93.9	*	*	*
Bed size													
Less then 50 beds	263,200	11.1	*	*25.2	31.7	30.7	*	28.7	71.3	83.5	*	*	*
50–99 beds	525,500	22.2	10.5	10.8	37.9	39.8	*	41.6	58.4	90.4	8.6	6.3	*
100–199 beds	1,206,600	50.9	8.7	18.5	35.8	36.5	*	36.1	63.9	88.1	9.8	8.7	*2.1
200 beds or more	373,800	15.8	15.8	16.0	32.7	34.5	*	38.5	61.5	83.2	14.9	13.8	*1.9
Census region													
Northeast	443,700	18.7	12.2	16.9	33.1	37.1	*	36.2	63.8	90.2	8.1	7.1	*1.7
Midwest	676,300	28.6	10.8	16.0	34.2	38.4	*	32.4	67.7	88.9	10.2	9.6	*
South	697,100	29.4	7.8	17.3	35.1	38.6	*	37.4	62.6	87.2	11.8	11.3	*
West	551,900	23.3	12.8	18.4	38.6	30.0	*	42.3	57.7	83.1	10.9	3.4	*6.0
Metropolitan statistical area (MSA)													
MSA	1,814,300	76.6	11.2	17.4	34.9	35.9	*0.6	37.2	62.8	86.2	11.6	9.1	2.2
Not MSA	554,700	23.4	8.9	16.2	36.4	37.4	*	35.7	64.3	90.8	6.7	5.2	*
Affiliation[2]													
Chain	1,444,800	61.0	10.3	18.1	35.8	35.2	*	38.2	61.8	86.3	11.0	8.3	2.7
Independent	915,200	38.6	11.2	15.6	34.5	38.0	*	34.8	65.2	88.9	9.6	81.0	*1.5

*Data do not meet standards of reliability or precision (sample size less than 30) and are therefore not reported. If shown with a number, data should not be assumed reliable because the sample size is 30–59 or is greater than 59 but has a relative standard error over 30 percent.

– Quantity zero.

[1]Includes races other than white or unknown.

[2]Excludes a small number of homes with unknown affiliation.

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

Table 6. Number and rate per 100 beds of full-time equivalent employees by occupational categories and selected nursing home characteristics: United States, 1997

Facility characteristic	Occupational category																			
	All full-time equivalent employees			Administrative, medical, and therapeutic[1]			Nursing													
							Total			Registered nurse			Licensed practical nurse			Nurse's aide and orderly			All other staff		
	Number	Rate per 100 beds	Rate per 100 residents	Number	Rate per 100 beds	Rate per 100 residents	Number	Rate per 100 beds	Rate per 100 residents	Number	Rate per 100 beds	Rate per 100 residents	Number	Rate per 100 beds	Rate per 100 residents	Number	Rate per 100 beds	Rate per 100 residents	Number	Rate per 100 beds	Rate per 100 residents
Total	1,434,100	78.8	89.2	99,700	5.5	6.2	950,300	52.2	59.1	141,300	7.8	8.8	192,200	10.6	11.9	616,800	33.9	38.3	384,100	21.1	23.9
Ownership																					
Proprietary	910,400	75.0	86.4	66,700	5.5	6.3	610,300	50.3	57.9	87,700	7.2	8.3	125,200	10.3	11.9	397,500	32.7	37.7	233,400	19.2	22.1
Voluntary nonprofit	398,000	85.5	94.2	26,500	5.7	6.3	258,000	55.4	61.0	41,100	8.8	9.7	51,700	11.1	12.2	165,200	35.5	39.1	113,600	24.4	26.9
Government and other	125,700	88.8	95.4	6,500	4.6	4.9	82,000	58.0	62.3	12,600	8.9	9.5	15,200	10.8	11.6	54,200	38.3	41.1	37,200	26.3	28.2
Certification																					
Certified by Medicare and Medicaid	1,215,100	79.6	89.0	85,300	5.6	6.2	808,600	53.0	59.2	122,200	8.0	8.9	164,400	10.8	12.0	522,000	34.2	38.2	321,200	21.0	23.5
Certified by Medicare only	51,900	84.9	109.4	4,300	7.1	9.1	33,300	54.4	70.1	6,900	11.3	14.6	6,600	10.8	13.9	19,800	32.3	41.6	14,300	23.4	30.2
Certified by Medicaid only	129,800	70.3	83.0	7,500	4.1	4.8	86,600	46.9	55.4	9,200	5.0	5.9	16,700	9.1	10.7	60,700	32.8	38.8	35,700	19.3	22.8
Not certified	37,300	76.2	94.7	2,500	5.2	6.4	21,800	44.6	55.4	3,000	6.2	7.7	4,400	9.0	11.2	14,400	29.4	36.5	13,000	26.5	32.9
Bed size																					
Less then 50 beds	73,400	99.0	118.3	9,800	13.2	15.8	46,800	63.1	75.4	8,500	11.5	13.8	10,000	13.5	16.2	28,200	38.1	45.5	16,800	22.7	27.1
50–99 beds	357,400	79.3	90.0	25,800	5.7	6.5	231,900	51.4	58.4	34,000	7.5	8.5	45,300	10.1	11.4	152,600	33.8	38.4	99,700	22.1	25.1
100–199 beds	732,500	77.8	87.7	47,800	5.1	5.7	491,400	52.2	58.8	70,100	7.4	8.4	101,200	10.8	12.1	320,000	34.0	38.3	193,400	20.5	23.2
200 beds or more	270,800	76.5	86.2	16,300	4.6	5.2	180,200	50.9	57.3	28,700	8.1	9.1	35,500	10.0	11.3	116,000	32.8	36.9	74,200	21.0	23.6
Census region																					
Northeast	345,600	87.2	92.2	21,300	5.4	5.7	230,700	58.2	61.6	39,100	9.9	10.4	41,300	10.4	11.0	150,300	37.9	40.1	93,600	23.6	25.0
Midwest	428,700	74.3	86.0	29,000	5.0	5.8	281,400	48.8	56.5	46,600	8.1	9.3	57,000	9.9	11.4	177,900	30.8	35.7	118,200	20.5	23.7
South	450,300	75.0	85.8	34,400	5.7	6.5	307,100	51.1	58.5	33,700	5.6	6.4	68,400	11.4	13.0	204,900	34.1	39.0	108,900	18.1	20.7
West	209,500	84.8	99.4	14,900	6.0	7.1	131,100	53.1	62.2	21,900	8.9	10.4	25,500	10.3	12.1	83,700	33.9	39.7	63,500	25.7	30.1
Metropolitan statistical area (MSA)																					
MSA	1,005,100	79.8	90.1	69,100	5.5	6.2	665,400	52.8	59.6	104,400	8.3	9.4	135,200	10.7	12.1	425,800	33.8	38.2	270,600	21.5	24.2
Not MSA	429,000	76.5	87.1	30,600	5.5	6.2	284,900	50.8	57.8	37,000	6.6	7.5	56,900	10.2	11.6	191,000	34.1	38.8	113,500	20.2	23.0
Affiliation[2]																					
Chain	798,300	77.1	87.8	57,000	5.5	6.3	527,700	50.9	58.0	76,500	7.4	8.4	109,400	10.6	12.0	341,800	33.0	37.6	213,600	20.6	23.5
Independent	626,300	81.0	90.7	42,100	5.5	6.1	416,200	53.9	60.3	63,900	8.3	9.3	81,300	10.5	11.8	271,000	35.1	39.3	167,900	21.7	24.3

[1]Includes dentists, dental hygienists, physical therapists, speech pathologists and/or audiologists, dieticians or nutritionists, podiatrists, and social workers.

[2]Excludes a small number of homes with unknown affiliation.

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

Table 7. Number and percent of nursing homes by selected services to residents and ownership: United States, 1997

Service	Total[1]		Ownership		
			Proprietary	Voluntary nonprofit	Government and other
	Number	Percent			
Total	17,000	...	...	...	...
Dental services	14,000	82.3	81.9	85.1	75.5
Help with oral hygiene	16,100	94.7	93.9	97.0	93.2
Home health services	3,900	23.2	22.2	27.3	*
Hospice services	12,200	71.5	72.7	72.1	57.7
Medical services	16,500	96.9	97.0	97.6	93.1
Mental health services	13,800	81.3	81.4	81.3	80.1
Nursing services	17,000	99.6	99.5	99.9	100.0
Nutrition services	16,900	99.2	99.5	99.0	97.2
Occupational therapy	16,100	94.5	94.4	96.5	87.7
Personal care	16,500	96.7	97.2	96.2	93.1
Physical therapy	13,500	97.1	97.0	97.6	96.0
Podiatry services	15,500	90.9	91.9	90.8	81.5
Medication	16,700	98.2	98.6	98.1	95.7
Social services	16,700	98.3	98.4	98.1	98.6
Speech or hearing therapy	15,900	93.6	93.1	95.2	92.2
Transportation	13,500	79.5	77.3	83.3	86.0
Equipment or devices	16,200	95.2	94.4	97.1	95.8

. . . Category not applicable.
*Data should not be assumed reliable because the sample size is 30–59 or is greater than 59 but a relative standard error over 30 percent.
[1]Numbers add to more than total because a facility may provide more than one type of service.

Table 8. Average daily charge for private-pay residents by level of care of facility and Medicare or Medicaid residents by certification status of facility by selected nursing home characteristics: United States, 1997

Facility characteristic	Level of care			Certification status	
	Skilled	Intermediate	Residential	Medicare	Medicaid
Total	$135.94	$106.58	$96.75	$216.51	$97.86
Ownership					
Proprietary	132.25	103.49	100.87	228.14	91.04
Voluntary nonprofit	147.47	118.01	80.91	201.45	116.49
Government and other	129.01	99.21	*	150.52	99.71
Certification					
Certified by Medicare and Medicaid	138.66	110.97	105.62	215.68	101.95
Certified by Medicare only	*160.86	*	*	*229.31	. . .
Certified by Medicaid only	94.01	83.09	*72.36	. . .	76.07
Not certified	*	*	*	. . .	. . .
Bed size					
Less then 50 beds	*150.53	*114.34	*	*232.85	*114.91
50–99 beds	122.64	97.16	112.96	199.68	94.13
100–199 beds	138.04	110.88	92.81	223.14	94.44
200 beds or more	160.57	120.11	*97.64	229.78	112.75
Census region					
Northeast	176.25	153.49	*181.14	206.94	119.62
Midwest	123.08	99.09	80.66	193.87	87.81
South	115.57	93.67	81.81	220.88	89.27
West	149.84	119.30	*94.32	259.52	111.27
Metropolitan statistical area (MSA)					
MSA	148.78	116.25	108.69	234.72	102.13
Not MSA	113.41	93.29	80.60	183.19	91.38
Affiliation[1]					
Chain	135.01	106.78	90.56	228.56	93.31
Independent	137.57	106.44	103.48	197.05	104.33

. . . Category not applicable.
*Data do not meet standards of reliability or precision (sample size less than 30) and is therefore not reported. If shown with a number, data should not be assumed reliable because the sample size is 30–59 or is greater than 59 but has a relative standard error over 30 percent.
[1]Excludes a small number of homes with unknown affiliation.

Technical notes

Sample design

The sample design for the 1997 NNHS was a stratified two-stage probability design (5). The first stage of selection is a probability sample of the nursing facilities in the sampling frame. The primary sampling strata of nursing facilities were defined by bed size and certification status. The bed size categories used were 3–14, 5–24, 25–49, 50–99, 100–199, 200–399, 400–599, and 600 beds or more. The strata of certified facilities consisted of facilities certified by either Medicare or Medicaid as a skilled nursing or intermediate care facility.

Within primary strata, facilities were surveyed by whether they were hospital based or nonhospital based, type of ownership, geographic region, metropolitan status, state, county, and zip code. Nursing homes were then selected using systematic sampling with probability proportional to their bed size.

The second stage of sample selection, sampling six current residents and six discharges within each facility, was done using a sample selection table to obtain systematic probability samples of current residents and discharges. The residents and discharges were selected from lists constructed for each facility at the time of the interview. Current residents were defined as those residents who were on the rolls of the facility as of midnight on the day immediately before the date of the survey. Discharges referred to those residents who were discharged from the facility during a designated month between October 1996 and September 1997. Discharges that occurred because of death were included.

Estimation procedures

Estimates presented in this report were derived by a multistage estimation procedure (6) that produces essentially unbiased national estimates and has three principal components. The first component, inflation by the reciprocals

of the probabilities of sample selection, is the basic inflation weight. This component consists of the inverse of the probability of selecting the facility and resident or discharge within each facility. The second component, consisting of an adjustment for nonresponse, brings estimates based only on the responding cases up to the level that would have been achieved if all eligible cases had responded. The third component, ratio adjustment to fixed totals, adjusts for over- or undersampling of facilities reported in the sampling frame.

Data collection procedures

A letter was sent to the sampled nursing home informing the administrator of the authorizing legislation, the purpose, and the content of the survey. Within a week to 10 days after the letter was mailed, the interviewer assigned to conduct the survey in a particular nursing home made telephone contact to discuss the survey and to arrange an appointment with the administrator or person designated by the administrator.

Three questionnaires and two sampling lists were used to collect the data. The Facility Questionnaire was completed with the administrator or his or her designee. The interviewer then completed the Current Resident Sampling List and the Discharged Resident Sampling List. These lists were used to select the sample residents and discharges. Using a set of sampling tables, the interviewer selected a sample of up to six current residents and six discharges. After the samples were selected, the Current Resident Questionnaire or the Discharged Resident Questionnaire was completed for each sampled resident by a staff member familiar with the care received by the resident and with the resident's medical records. No resident was interviewed directly.

When all interviews were completed, the interviewer thanked the administrators for their time and cooperation and left a copy of a thank-you letter.

The data were then converted into machine-readable form by NCHS. Extensive editing was then conducted by computer to ensure that all responses were accurate, consistent, logical, and complete. The medical information recorded on the resident questionnaires was coded by NCHS staff according to the *International Classification of Diseases, 9th Revision, Clinical Modification* (7).

Table I. Parameters used to compute relative standard errors by type of estimate

Type of estimate	Parameters	
	A	*B*
Facilities	0.002888	8.364379
Admissions	0.015809	850.354391
Beds	−0.000519	1096.816184
Full-time equivalent employees	−0.000568	1044.497366
Current residents	0.001692	250.959236
Discharged residents	0.028768	634.470897

Reliability of estimates

Because the statistics presented in this report are based on a sample, they will differ somewhat from figures that would have been obtained if a complete census had been taken using the same schedules, instructions, and procedures. The standard error (SE) is primarily a measure of the variability that occurs by chance because only a sample, rather than the entire universe, is surveyed. The standard error also reflects part of the measurement error, but it does not measure any systematic biases in the data or other nonsampling error. The chances are about 95 in 100 that an estimate from the sample differs from the value that would be obtained from a complete census by less than twice the standard error.

The standard errors used in this report were approximated using SUDAAN software. SUDAAN computes standard errors by using a first-order Taylor approximation of the deviation of estimates from their expected values. A description of the software and the approach it uses had been published (8). Although exact standard error estimates were used in tests of significance in this report, standard errors for aggregate estimates presented may be estimated using the general formula:

$$\mathrm{SE}(X) = X \bullet \mathrm{RSE}(X)$$

where X is the estimate and RSE(X) is the relative standard error of the estimate. The relative standard error (RSE(X)) may be estimated using the following general formula (9):

$$\mathrm{RSE}\ (X) = \sqrt{A + \frac{B}{X}}$$

where X is the estimate and A and B are the appropriate coefficients from table I.

To approximate the relative standard error (RSE(p)) and the standard error (SE(p)) of a percent p, the appropriate value of parameter B from table I is used in the following equation:

$$\mathrm{RSE}(p) = \sqrt{\frac{B \bullet (100 - p)}{p \bullet y}}$$

where $p = 100 \bullet X/Y$, X = the numerator of the estimated percent, and Y = the denominator of the estimated percent and

$$\mathrm{SE}(p) = p \bullet \mathrm{RSE}(p)$$

The standard error of a percent is valid only when one of the following conditions is satisfied: The relative standard error of the denominator is 5 percent or less (10) or the relative standard errors of the numerator and the denominator are both 10 percent or less (11).

Presentation of estimates

Publication of estimates for the NNHS is based on the relative standard error of the estimate and the number of a sample record on which the estimate is based. Estimates are not presented in NCHS reports unless a reasonable assumption regarding the probability distribution of the sampling error is possible.

Because of the complex sample design of the NNHS, the following guidelines are used for presenting the estimates:

If the sample size is less than 30, the value of the estimate is not reported.

If the sample size is 30–59, or if the sample size is 60 or more and the relative standard error is 30 percent or more, the estimate is reported but should not be assumed reliable. This is indicated by an asterisk (*) in the tables.

If the sample size is 60 or more and the relative standard error is less than 30 percent, the estimate is reported and is considered reliable.

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