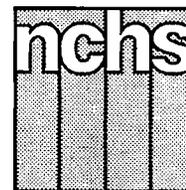


Advance Data



From Vital and Health Statistics of the CENTERS FOR DISEASE CONTROL AND PREVENTION/National Center for Health Statistics

Characteristics of Elderly Home Health Care Users Data From the 1993 National Home and Hospice Care Survey

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Introduction

The proliferation of home health care agencies in recent years leaves no doubt that this is one of the fastest growing segments of the U.S. health care system. Medicare-certified home health agencies rose from 5,676 in 1989 to 7,521 in 1994, an increase of 33 percent (1). There are three factors primarily responsible for the rapid growth of these agencies. First, home health agencies have the ability to provide quality health care services at a much lower cost in the patient's home than in institutional settings (2). Second, the enactment of Medicare laws in 1965 authorized payment for certain home health care services, thereby making them more accessible to the elderly. Finally, the changing age structure of the population, that is, the increasing number of elderly members in the total population has increased the demand for home health care services. Older patients generally prefer recovering from an illness at home instead of in a hospital or a nursing home (3).

This report presents information on elderly persons who utilize home health care services, including sociodemographic characteristics, primary admission diagnosis, and patterns of service utilization. It also includes the disposition status of persons who terminated services during the survey period. Service utilization is discussed in terms of (a) assistance with activities of daily living (ADL) and instrumental activities of daily living (IADL), (b) types of services received, and (c) length of service in days. For current home health care patients, service utilization refers to the 30 days prior to the survey. However, for home health care discharges, the service utilization refers to the 30 days prior to discharge.

In this report, the ADL's, which reflect an individual's capacity for self care, refer to five sociobiological functions: bathing, dressing, eating, transferring in or out of bed or chair, and using the toilet. The IADL's, which involve more complex tasks that enable

an individual to live independently in the community, include doing light housework, managing money, shopping for groceries or clothes, using the telephone, preparing meals, and taking medications. This report focuses on help provided by home health care agencies in relation to ADL's and IADL's and does not include help provided by other sources.

The data presented in this report are from the 1993 National Home and Hospice Care Survey (NHHCS), a segment of the Long-Term Care Component of the National Health Care Survey (4). The 1993 NHHCS is the second annual survey of home health care agencies and hospices, their current patients, and discharges. The National Center for Health Statistics (NCHS) began this nationwide sample survey in response to the rapid growth in the numbers of these agencies in the United States (5). The 1,500 agencies included in the first 1992 NHHCS were selected from a universe of 8,859 agencies classified by the 1991 National Health

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Provider Inventory (NHPI) as agencies providing home health or hospice care (6). Also included in the universe was a sample of new agencies identified between November 1991 (when the 1991 NHPI was completed) and June 1992. All of these agencies were revisited during the 1993 survey. Excluded from the 1993 survey were 42 agencies that had merged with other agencies, that were determined to be a duplicate of other agencies, or were out of scope for the survey. Data collection for the 1993 NHHCS was conducted between September and December 1993. Information on sample design, data collection procedures, and sampling errors is included in the Technical notes.

Estimates in this report are based on the current patient sample and discharged patient sample. Current patients refer to persons on the rolls of the agency as of midnight on the day immediately before the date of the survey. Discharges are defined as patients removed from the rolls of the agency (including those whose episodes of care ended because of death) during a designated month randomly selected for that agency. Discharges represent discharge events, not discharged patients. Thus, the same patients could be included more than once if they had multiple episodes of care in one or more agencies that ended during the designated month.

Data were collected by interviewing the staff member most familiar with the care provided to the patient. Although the survey included patients of all ages from hospices and home health care agencies, data presented in this report are limited to home health care patients who were 65 years of age and over at the time they began using home health care services. The estimates are based on responses for 3,906 current patients and 3,403 discharges. The estimates in this report are based on final data and will differ from those in an earlier report (7) that was based on preliminary data.

Current elderly patients

Sociodemographic characteristics

At any given time during 1993, there were an estimated 1.5 million

persons served by home health care agencies. Of these persons, about 1,080,200 or 72 percent were 65 years of age and over at the time they began using home health care.

Sociodemographic characteristics of elderly current home health care patients as measured at the time of admission are shown, by sex, in table 1. Elderly current patients were predominantly women (70 percent), in the 75–84 years age group (43 percent), white (70 percent), non-Hispanic (65 percent), widowed (48 percent), living in a private residence (93 percent), and living with their family members (55 percent). For a large percent of elderly current patients, race and ethnicity were reported as unknown. Fifteen percent were reported unknown in the race category and 30 percent were reported unknown in the Hispanic origin category. Although a majority of elderly current home health care patients were widowed and living with their family members, there are differences between the sexes in marital status and living arrangements. The data show elderly women were more likely to be widowed (59 percent) than elderly men (22 percent) and the percent of elderly women living alone was double that of elderly men (45 percent vs. 22 percent). This is similar to the distribution of elderly women living alone compared with elderly men in the general population (8).

Service utilization

Help with functional activities—The most common ADL for which assistance was received by elderly patients was bathing or showering (55 percent), followed by dressing (47 percent), transferring (35 percent), using the toilet (27 percent), and eating (12 percent) (table 2). Of all elderly current patients, 59 percent were reported as receiving help in at least one ADL. No significant differences were noted between elderly men and women in receiving help with ADL's.

With respect to IADL's, the most common activity for which assistance was received by elderly patients was doing light house work (38 percent). Taking medications (26 percent), preparing meals (25 percent), shopping

for groceries or clothes (14 percent), using the telephone (3 percent), and managing money (2 percent) were the next most common types of assistance received by elderly current patients. The percent of elderly patients who received help in shopping for groceries or clothes was significantly greater for women than for men (16 percent vs. 9 percent). Fifty-four percent of women and 49 percent of men received help in at least one IADL. Over one-fourth of elderly men were reported as having difficulty in controlling both bowels and bladder. Sixteen percent of elderly men were reported as having an ostomy or an indwelling catheter and 14 percent of those with either device were reported as receiving help in caring for that device. Of all elderly women patients, less than one-fourth were reported as having difficulty in controlling both bowels and bladder; 8 percent had an ostomy or an indwelling catheter and 6 percent of those with a device received help with the device.

Types of services—Table 3 presents information on the types of services received by home health care current patients during the 30 days prior to the survey. In 1993, the most frequent service used by elderly current patients was skilled nursing services. Eighty-seven percent of men and 81 percent of women used these services. Personal care (55 percent of men and 58 percent of women), physical therapy (19 percent of men and 17 percent of women), homemaker/companion services (14 percent of men and 21 percent of women), and social services (11 percent of men and 12 percent of women) were the next most frequently used services. Other services, such as administering medications, occupational and/or vocational therapy, high-tech care and counseling were less frequently used.

Length of service—For current patients, length of service does not cover the complete episode of care. It was calculated from the day of their admission to the day of the interview. Table 4 indicates that 59 percent of the elderly current patients had been using the home health care service for more than 90 days. The average length of service among elderly patients was 326 days. Length of service was, on average,

Table 1. Number and percent distribution of elderly home health care current patients 65 years and over by selected demographic characteristics, according to sex: United States, 1993

Demographic characteristic	Both sexes		Male		Female	
	Number	Percent distribution	Number	Percent distribution	Number	Percent distribution
Total	1,080,200	100.0	318,900	100.0	761,400	100.0
Age						
65–74 years	348,000	32.2	125,300	39.3	222,700	29.2
75–84 years	460,600	42.6	135,100	42.4	325,400	42.7
85 years and over	271,700	25.2	58,500	18.5	213,200	28.0
Race						
White	756,000	70.0	225,700	70.8	530,300	69.7
Black and other	160,400	14.8	49,300	15.4	111,100	14.6
Black	138,500	12.8	34,900	10.9	103,600	13.6
Unknown	163,800	15.2	43,900	13.8	119,900	15.8
Hispanic origin						
Hispanic	52,000	4.8	21,200	6.7	30,800	4.0
Non-Hispanic	702,400	65.0	208,200	65.3	494,300	64.9
Unknown	325,800	30.2	89,500	28.1	236,300	31.0
Marital status						
Married	340,100	31.5	181,500	56.9	158,600	20.8
Widowed	516,200	47.8	70,400	22.1	445,800	58.6
Divorced or separated	31,500	2.9	12,600	3.9	18,900	2.5
Never married/single	72,100	6.7	26,100	8.2	46,100	6.1
Unknown	120,300	11.1	28,300	8.9	92,000	12.1
Living quarters						
Private residence	1,004,000	92.9	300,800	94.3	703,200	92.4
Rented room and board	8,400	0.8	*	*	6,700	0.9
Retirement home	17,900	1.7	*	*	13,900	1.8
Board and care or residential care facility	23,100	2.1	*	*	17,300	2.3
Health facility	7,900	0.7	*	*	*	*
Other or unknown	19,000	1.8	*	*	16,000	2.1
Living arrangement						
Family members	594,000	55.0	226,000	70.9	368,000	48.3
Nonfamily members	52,700	4.9	15,200	4.8	37,500	4.9
Alone	413,400	38.3	70,800	22.2	342,600	45.0
Other or unknown	20,100	1.9	6,850	2.2	13,300	1.7

longer for women (351 days) than for men (266 days).

Primary admission diagnosis

Primary admission diagnosis was collected from the current patients' medical records and coded according to the *International Classification of Diseases, Ninth Revision, Clinical Modifications*, (ICD-9-CM) (9). Table 5 shows that, for both elderly men and women, the most frequent primary admission diagnosis was heart disease (17 percent for men and 15 percent for women). For elderly men, the next most

frequent primary admission diagnoses were malignant neoplasms (8 percent), chronic obstructive pulmonary disease (5 percent), diabetes (4 percent), and essential hypertension (3 percent). However, for elderly women, the most frequent primary admission diagnoses after heart disease were diabetes (8 percent), essential hypertension (5 percent), malignant neoplasms (4 percent), and chronic obstructive pulmonary disease (4 percent).

Discharges

As mentioned earlier, a discharge represents an event, not a person. The

advantage of using discharge data is that it enables the complete episode of care, that is, from admission to discharge, to be reviewed. A discharge may occur in response to either an improvement or stabilization of a condition, a worsening of a condition that led to hospital or nursing home admission, or to death. A discharge may also occur for other reasons such as relatives resuming care of the patient. When this occurs, home health care services are no longer needed and are referred to as "goals met." Figure 1 shows that in 1993, 40 percent of the older men and

Table 2. Number and percent of elderly home health care current patients 65 years and over receiving help with activities of daily living and instrumental activities of daily living and percent distribution by number of functional activities for which help was received, according to sex: United States, 1993

<i>Functional status</i>	<i>Both sexes</i>	<i>Male</i>	<i>Female</i>
		Number	
Total	1,080,200	318,900	761,400
		Percent	
Received personal help with the following ADL's			
Bathing or showering	54.5	51.7	55.7
Dressing	47.1	46.8	47.2
Eating	12.2	12.6	12.1
Transferring in or out of beds or chairs	35.2	35.5	35.0
Using toilet room	26.5	27.4	26.2
		Percent distribution	
Received personal help with number of ADL's			
0	41.1	43.5	40.2
1	7.1	4.8	8.0
2	16.0	15.5	16.3
3	14.5	14.7	14.4
4	13.4	13.4	13.5
5	7.8	8.1	7.7
		Percent	
Received personal help with the following IADL's			
Doing light housework	38.2	32.9	40.4
Managing money	2.1	1.4	2.4
Shopping for groceries or clothes	13.6	8.8	15.6
Using telephone	3.4	1.8	4.0
Preparing meals	25.4	23.3	26.3
Taking medications	25.8	25.6	25.9
		Percent distribution	
Received personal help with number of IADL's			
0	47.7	50.9	46.3
1	22.2	22.5	22.1
2	13.1	14.0	12.8
3	10.6	8.1	11.7
4	4.1	3.7	4.3
5	1.6	*	2.1
6	0.6	*	*
		Percent	
Continence status			
Difficulty controlling bowels	14.1	16.3	13.2
Difficulty controlling bladder	21.1	24.5	19.7
Difficulty controlling bowels and bladder	24.7	28.5	23.1
Have an ostomy or an indwelling catheter	9.9	15.6	7.6
Received personal help in caring for this device	8.4	14.0	6.0

NOTE: ADL is activities of daily living and IADL is instrumental activities of daily living.

43 percent of the older women were discharged because of goals met. Nineteen percent of the older men and 18 percent of the older women were discharged because they recovered and/or stabilized. Sixteen percent of the older men and 14 percent of the older women were hospitalized, and 5 percent of older men and women admitted to nursing home. The level of mortality among elderly discharges was 7 percent for men and 5 percent for women. The percent of patients who recovered and/or stabilized in the 1993 NHHCS was much lower than the percent reported in the 1992 NHHCS. The reason may be

because of the absence of the "goals met" category in the 1992 NHHCS. A large portion of discharges counted in the "goals met" category in the 1993 NHHCS was probably counted in the "recovered and/or stabilized" category in the 1992 NHHCS.

Sociodemographic characteristics

In 1993, there were an estimated 3.7 million discharges from home health care agencies, which represents an increase of 0.6 million compared with the number reported in the 1992 survey (10). Of these 3.7 million discharges, 71 percent were aged 65 years and over

at the time they began using home health care services. Persons ages 75–84 years at the time of admission comprised the largest group (43 percent) among all elderly discharges (see table 6). As with current home health care patients, elderly discharges were also predominantly women (65 percent), white (71 percent), non-Hispanic (58 percent), widowed (42 percent), had lived in a private residence (91 percent), and had lived with family members (57 percent). For a large percent of elderly discharges, race and ethnicity were reported as unknown. In the race category, 20 percent were reported as

Table 3. Number and percent of elderly home health care current patients 65 years and over who received services during the last 30 days: United States, 1993

Service received	Both sexes	Male		Female	
		Number	Percent	Number	Percent
Total	1,080,200	318,900		761,400	
Continuous home care	3.8	4.9		3.4	
Counseling	4.1	4.0		4.1	
Dietary and nutritional services	2.5	2.6		2.5	
Durable medical equipment and supplies	4.7	5.9		4.2	
High-tech care (for example, intravenous therapy)	1.2	2.0		0.8	
Homemaker/companion services	18.6	14.0		20.6	
Medications	5.9	4.6		6.4	
Occupational therapy/vocational therapy	3.7	4.1		3.5	
Personal care ¹	58.9	56.5		59.8	
Physical therapy	17.5	18.8		16.9	
Skilled nursing services	82.8	86.8		81.1	
Social services	11.5	10.5		11.9	
Speech therapy/audiology	1.3	2.2		1.0	
Other services	2.5	2.1		2.6	

¹Includes people receiving help in activities of daily living who were not reported as receiving personal care.

Table 4. Number and percent distribution and standard error of the percent of elderly home health care current patients 65 years and over by length of service and average length of service since admission: United States, 1993

Length of services	Both sexes (S.E.) ¹		Male (S.E.) ¹		Female (S.E.) ¹	
	Number	Percent distribution	Number	Percent distribution	Number	Percent distribution
Total	1,080,200		318,900		761,400	
0-14 days	7.4	(0.6)	8.3	(1.1)	7.0	(0.7)
15-30 days	9.6	(0.7)	9.5	(1.1)	9.6	(0.9)
31-60 days	14.3	(0.9)	14.7	(1.4)	14.1	(1.1)
61-90 days	9.3	(0.8)	11.1	(2.4)	8.5	(0.8)
91-180 days	17.0	(1.2)	19.8	(1.5)	15.8	(1.7)
181 days and more	42.4	(1.4)	36.5	(2.1)	44.9	(1.6)
Average length of service (in days)	325.9	(16.1)	266.1	(18.9)	350.9	(18.2)

¹S.E. is standard error.

unknown, and in Hispanic origin category, 39 percent were reported as unknown. The proportion of discharges who were widowed and who lived alone was higher among older women than among older men.

Service utilization

Help with functional activities—Table 7 shows the percent of elderly home health care discharges who received help in ADL's and IADL's and their continence status. The most common ADL for which assistance was received by elderly discharges was bathing (40 percent), followed by dressing (33 percent), transferring in or out of beds or chairs (30 percent), using the toilet (20 percent), and eating (9 percent). Forty-seven percent of

elderly discharges were reported as receiving help in at least one ADL. No significant differences were found between elderly men and women in receiving help with ADL's.

The most common IADL's for which assistance was received by elderly discharges were taking medications (25 percent) and doing light house work (24 percent), followed by preparing meals (16 percent), shopping for groceries or clothes (8 percent), using a telephone (1 percent), and managing money (1 percent). Forty percent of elderly discharges received help with at least one IADL. Nineteen percent of all elderly discharges were reported as having difficulty in continence. Ten percent of elderly discharges had an ostomy or an

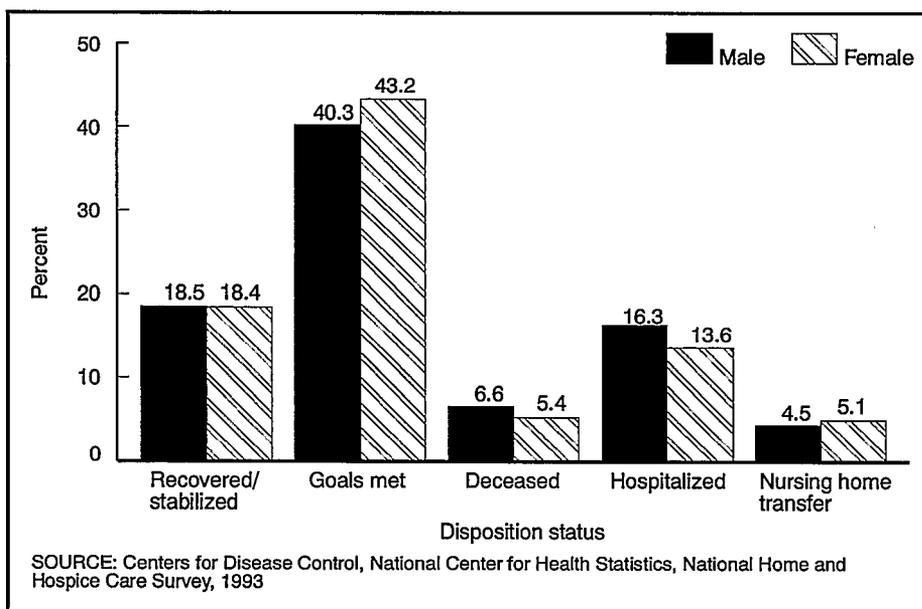
indwelling catheter, and 8 percent received help in caring for that device.

Types of services—Table 8 presents information on the types of services received by discharged persons during the 30 days prior to discharge. The services used most frequently by men were skilled nursing services (87 percent), personal care services (40 percent), physical therapy (27 percent), and social services (12 percent). For discharged women, services most often used included skilled nursing services (82 percent), personal care services (46 percent), physical therapy (34 percent), homemaker/companion services (12 percent), and social services (11 percent).

Length of service—For the discharge sample, the length of service

Table 5. Number and percent distribution of elderly home health care current patients 65 years and over by primary diagnosis at admission, according to sex: United States, 1993

ICD-9-CM procedure category and code	Both sexes	Male	Female
		Number	Number
Total	1,080,200	318,900	761,400
		Percent distribution	
Percent distribution	100	100	100
Infectious and parasitic diseases001-139	0.7	*	*
Neoplasms140-239	5.7	8.4	4.6
Malignant neoplasms140-208,230-234	5.4	8.2	4.2
Endocrine, nutritional and metabolic diseases, and immunity disorders240-279	8.8	6.3	9.8
Diabetes mellitus250	6.9	4.4	7.9
Diseases of the blood and blood-forming organs280-289	3.1	2.8	3.3
Mental disorders290-319	2.0	*	2.2
Diseases of the nervous system and sense organs320-389	5.1	7.2	4.2
Diseases of the circulatory system390-459	31.7	33.1	31.0
Essential hypertension401	4.6	3.1	5.2
Heart disease391-392.0,393-398,402,404,410-416,420-429	16.0	17.3	15.4
Cerebrovascular disease430-438	2.3	1.2	2.8
Diseases of the respiratory system460-519	6.4	8.8	5.4
Chronic obstructive pulmonary disease494-496	4.1	5.2	3.6
Diseases of the digestive system520-579	3.9	4.1	3.8
Diseases of the genitourinary system580-629	2.3	2.4	2.3
Diseases of the skin and subcutaneous tissue680-709	3.3	4.5	2.7
Diseases of the musculoskeletal system and connective tissue710-739	9.5	4.0	11.8
Congenital anomalies740-759	0.1	*	*
Symptoms, signs, and ill-defined conditions780-799	6.8	9.0	5.9
Injury and poisonings800-999	8.7	6.2	9.8
Supplementary classification or unknown	1.8	*	2.1

**Figure 1. Disposition of elderly home health care discharges: United States, 1993**

refers to completed episodes of care, that is, from admission to discharge. The average length of service for elderly discharges was 96 days with about 70 percent having stays of 60 days or

less (table 9). For men, the average length of service was 85 days and for women it was 102 days. This shorter length of service for older men may be the consequences of their marital status

or living arrangements. As shown earlier, a higher percent of older men were married or living with others. Therefore, they may have received help from their spouses or from others and thus needed less help from the home health care agency.

Primary admission diagnosis

Table 10 presents the percent distribution of elderly home health care discharges by primary admission diagnosis. For both elderly men and women discharges, the most frequent primary admission diagnosis was heart disease. For elderly men, the next most common diagnoses were malignant neoplasms and injury and poisonings and, for women, injury and poisonings and diseases of the musculoskeletal system and connective tissue.

Discussion

The overall results of the survey indicate that the elderly in both the current patient and discharge samples were predominantly women, 75-84

Table 6. Number and percent distribution of elderly home health care discharges 65 years and over by selected demographic characteristics, according to sex: United States, 1993

Demographic characteristic	Both sexes		Male		Female	
	Number	Percent distribution	Number	Percent distribution	Number	Percent distribution
Total	2,622,700	100.0	910,500	100.0	1,712,200	100.0
Age						
65-74 years	907,100	34.6	381,600	41.9	525,500	30.7
75-84 years	1,121,700	42.8	351,200	38.6	770,500	45.0
85 years & over	593,800	22.6	177,600	19.5	416,200	24.3
Race						
White	1,870,800	71.0	666,400	73.2	1,204,400	70.3
Black and other	221,900	8.5	67,100	7.4	154,800	9.1
Black	188,300	7.2	51,900	5.7	136,400	8.0
Unknown	530,000	20.2	177,000	19.8	353,000	20.6
Hispanic origin						
Hispanic	94,100	3.6	39,600	4.4	54,500	3.2
Non-Hispanic	1,513,700	57.7	549,700	60.4	964,000	56.3
Unknown	1,014,900	38.7	321,100	35.3	693,700	40.5
Marital status at discharge						
Married	973,300	37.1	573,900	63.0	399,400	23.3
Widowed	1,102,100	42.0	169,000	18.6	933,100	54.5
Divorced or separated	88,200	3.4	40,200	4.4	48,000	2.8
Never married/single	167,000	6.4	53,600	5.9	113,400	6.7
Unknown	292,100	11.1	73,800	8.1	218,300	12.7
Living quarters						
Private residence	2,397,700	91.4	846,800	93.0	1,550,900	90.6
Rented room and board	21,800	0.8	*	*	*	*
Retirement home	54,000	2.1	*	*	38,400	2.2
Board and care or residential care facility	76,400	2.9	19,800	2.2	56,600	3.3
Health facility	31,900	1.2	*	*	22,800	1.3
Other or unknown	41,000	1.6	*	*	28,800	1.7
Living arrangement						
Family members	1,488,200	56.7	657,600	72.2	830,600	48.5
Nonfamily members	155,800	5.9	43,600	4.8	112,300	6.6
Alone	901,500	34.4	180,500	19.8	721,000	42.1
Other or unknown	77,100	5.9	28,800	3.2	48,300	2.8

years old at the time of admission, white, non-Hispanic, widowed, and most often lived in a private residence with their family members. In both samples, a larger proportion of elderly women were widowed and living alone than elderly men were. This is also true in the general population. It was also noted that, in both samples, the proportion of men who were reported as having had an ostomy or an indwelling catheter and who received help in caring for that device was larger than for women. For both elderly men and women, the most commonly used home health care service was skilled nursing services, and the most common primary admission diagnosis was heart disease. In both the current patient and discharge samples,

women had longer length of service than men. The longer length of service for women may be partly related to their living arrangements. Because women are more likely than men to live alone, they may depend more on home health care agencies to provide services for a longer period of time following an illness.

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Table 7. Number and percent distribution of elderly home health care discharges 65 years and over receiving help with activities of daily living and instrumental activities of daily living and percent distribution by number of functional activities for which help was received, according to sex: United States, 1993

<i>Functional status</i>	<i>Both sexes</i>	<i>Male</i>	<i>Female</i>
Number			
Total	2,622,700	910,500	1,712,200
Percent			
Received personal help with the following ADL			
Bathing or showering	40.4	36.8	42.3
Dressing	33.3	30.1	35.0
Eating	8.7	8.2	8.9
Transferring in or out of bed or chair	29.9	29.4	30.1
Using toilet room	20.3	21.0	20.0
Percent distribution			
Received personal help with the number of ADL			
0	52.5	56.2	50.5
1	9.9	8.9	10.4
2	11.5	9.9	12.3
3	10.7	9.2	11.4
4	9.8	9.9	9.7
5	5.7	5.9	5.6
Percent			
Received personal help with the following IADL			
Doing light housework	24.1	19.4	26.6
Managing money	0.8	*	*
Shopping for groceries or clothes	7.5	6.2	8.2
Using telephone	1.3	*	1.3
Preparing meals	16.4	12.3	18.5
Taking medications	24.8	25.2	24.6
Percent distribution			
Received personal help with the number of IADL			
0	59.8	61.5	58.8
1	21.5	24.5	19.9
2	7.4	5.2	8.5
3	8.0	5.7	9.3
4	2.7	2.6	2.7
5	*	*	*
6	*	*	*
Percent			
Continence status			
Difficulty controlling bowels	9.7	9.6	9.8
Difficulty controlling bladder	15.2	16.1	14.7
Difficulty controlling bowels and bladder	18.7	20.2	17.9
Have an ostomy or an indwelling catheter	9.8	13.7	7.7
Received personal help in caring for this device	8.1	10.9	6.6

NOTE: ADL is activities of daily living and IADL is instrumental activities of daily living.

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Table 8. Number and percent of elderly home health care discharges 65 years and over who received services during the 30 days prior to discharge: United States, 1993

<i>Service received</i>	<i>Both sexes</i>	<i>Male</i>	<i>Female</i>
		Number	
Total	2,622,700	910,500	1,712,200
		Percent	
Continuous home care	3.2	3.2	3.2
Counseling	4.5	4.0	4.7
Dietary and nutritional services	2.7	2.8	2.7
Durable medical equipment and supplies	5.4	5.8	5.2
High-tech care (for example, intravenous therapy)	1.9	2.7	1.5
Homemaker/companion services	10.5	8.1	11.7
Medications	6.7	7.2	6.4
Occupational therapy/vocational therapy	5.1	4.3	5.5
Personal care ¹	47.5	43.8	49.5
Physical therapy	31.4	26.5	34.0
Skilled nursing services	84.0	87.3	82.3
Social services	11.4	11.6	11.3
Speech therapy/audiology	1.6	*	1.5
Other services	1.8	2.6	1.3

¹Includes people receiving help in activities of daily living who were not reported as receiving personal care.

Table 9. Percent distribution and standard error of the percent of elderly home health care discharges by length of service since admission: United States, 1993

<i>Length of services</i>	<i>Both sexes (S.E.)¹</i>	<i>Male (S.E.)¹</i>	<i>Female (S.E.)¹</i>
Total	2,622,700	910,500	1,712,200
	Percent distribution		
0-14 days	19.1 (1.0)	19.3 (1.7)	18.9 (1.3)
15-30 days	22.7 (1.2)	24.0 (1.8)	22.0 (1.4)
31-60 days	29.3 (1.2)	30.7 (2.0)	28.6 (1.5)
61-90 days	7.0 (0.7)	7.2 (1.1)	6.9 (0.9)
91-180 days	10.1 (0.8)	7.9 (1.0)	11.2 (1.0)
181 days and more	11.8 (0.9)	10.9 (1.2)	12.3 (1.1)
Average length of service (in days)	96.0 (5.1)	84.6 (6.1)	102.0 (6.8)

¹S.E. is standard error.

Table 10. Number and percent distribution of elderly home health care discharges 65 years and over by primary diagnosis at admission, according to sex: United States, 1993

<i>ICD-9-CM procedure category and code</i>	<i>Both sexes</i>	<i>Male</i>	<i>Female</i>
		Number	
Total	2,622,700	910,500	1,712,200
		Percent distribution	
Percent distribution	100	100	100
Infectious and parasitic diseases001-139	*	*	*
Neoplasms140-239	7.7	10.3	6.3
Malignant neoplasms140-208,230-234	7.6	10.3	6.1
Endocrine, nutritional and metabolic diseases, and immunity disorders240-279	6.4	5.4	7.0
Diabetes mellitus250	5.1	4.6	5.3
Diseases of the blood and blood-forming organs280-289	1.4	*	1.6
Mental disorders290-319	2.2	*	2.9
Diseases of the nervous system and sense organs320-389	2.6	2.9	2.5
Diseases of the circulatory system390-459	28.5	30.0	27.7
Essential hypertension401	3.5	2.0	4.3
Heart disease391-392.0,393-398,402,404,410-416,420-429	23.8	25.3	23.0
Cerebrovascular disease430-438	1.3	1.2	1.4
Diseases of the respiratory system460-519	7.9	8.8	7.4
Chronic obstructive pulmonary disease494-496	3.7	4.5	3.2
Diseases of the digestive system520-579	4.4	4.3	4.4
Diseases of the genitourinary system580-629	2.7	3.9	2.1
Diseases of the skin and subcutaneous tissue680-709	4.0	4.1	3.9
Diseases of the musculoskeletal system and connective tissue710-739	11.2	7.9	13.0
Congenital anomalies740-759	*	*	*
Symptoms, signs, and ill-defined conditions780-799	6.4	7.2	6.0
Injury and poisonings800-999	12.2	10.3	13.2
Supplementary classification or unknown	1.7	*	1.6

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

Technical notes

Source of data

With a few exceptions, the sample for the 1993 National Home and Hospice Care Survey (NHHCS) was the same as that used in the 1992 survey. The 1993 sample contained 1,458 agencies. About 40 agencies were removed from the 1992 sample because they had merged with other agencies in the sample, they were determined to be duplicates of other agencies in the sample, or they were considered out of scope for the survey. The original sample was taken from a frame that consisted of all home health care agencies and hospices identified in the 1991 National Health Provider Inventory (NHPI) and all agencies opened for business between 1991 and June 30, 1992, as identified through the Agency Reporting System (11). The NHPI is a comprehensive census of nursing and related care homes, residential care homes, home health care agencies, and hospices conducted periodically by the National Center for Health Statistics (12).

Sample design

The sample design for the 1993 NHHCS is a stratified three-stage probability design. Primary Sampling Units (PSU's) are selected at the first stage, agencies are selected at the second stage, and current patients and discharges are selected at the third stage.

The first stage consists of the 198 PSU's that were used in the 1985-94 National Health Interview Survey (NHIS), a survey of the civilian noninstitutionalized population of the United States (13). The PSU's are counties, groups of counties, county equivalents (such as parishes or independent cities), or towns and townships (for some PSU's in New England). Home health agencies and hospices were selected within the same PSU's included in the NHIS to minimize data collection costs and to establish linkage between the two surveys. This allows future research on availability and use of services (12).

The second stage involved the selection of agencies within six primary strata of agencies. These strata were formed in the 1992 sampling frame on

the basis of type of agency (hospices versus home health agencies and mixed agencies (providing both types of care or unknown)), and type of PSU (Self Representing (SR) versus Non-Self Representing (NSR), and within NSR PSU's: Metropolitan Statistical Area (MSA) versus non-MSA). (MSA is a metropolitan statistical area defined by the U.S. Office of Management and Budget on the basis of the 1990 Census.) Within these sampling strata, agencies were arrayed by four regions, five types of ownership, two types of certification status, and the size of the patient population currently being served by the agency. The number of agencies selected from each sampling stratum was based primarily on results of research into the optimum sample design for the 1992 NHHCS. Hospices in the NSR PSU's and home health agencies and mixed agencies in the non-MSA, NSR PSU's were selected with certainty. Hospices in the SR PSU's, and home health agencies and mixed agencies in the MSA, NSR PSU's and the SR PSU's were selected with probability proportional to the current patient population size (as reported in the NHPI sampling frame). A total sample of 1,500 agencies was selected; 384 were hospices and the balance was home health agencies or mixed agencies (14). In 1993 there were 1,458 agencies in the sample.

The final stage is a systematic random selection of six patients currently served by the agency and six patients discharged from care during a designated month from October 1992 through September 1993. The designated month was randomly selected for each agency. Therefore, the coverage for discharges was the 12-month period from October 1992 through September 1993. In the 1992 survey, the six discharged patients were selected from a list of all discharges during the last complete 12-month period.

Data collection procedures

The data collection for the 1993 NHHCS began with a letter sent to all 1,458 sampled agencies 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 for a particular agency 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. First, the Agency Questionnaire was completed with the administrator or designee. Then, the interviewer would complete the Current Patient Sampling List (CPSL) and Discharged Patient Sampling List (DPSL). With the CPSL, the interviewer listed all patients on the register of the agency on the evening prior to the day of the survey. The DPSL was used to list all discharges from the agency for their designated month. Sampling of current patients and discharges within agencies was done by using tables showing sets of sample line numbers for each possible count of current patients and discharges in the agency. The interviewer drew a sample of up to six current patients and up to six discharges.

After the samples had been selected, the Current Patient and Discharged Patient Questionnaires were completed for each sampled person by interviewing the staff member most familiar with the care provided to the patient. The respondent was requested to refer to the medical or other records whenever necessary. No patient was interviewed directly.

Sampling variability

The standard error is primarily a measure of the sampling variability that occurs by chance when only a sample, rather than an entire universe, is surveyed. The relative standard error of an estimate is obtained by dividing the standard error by the estimate itself. The result is expressed as a percent of the estimate. Relative standard errors for estimated length of service used are shown in tables 5 and 12. Relative standard errors for other aggregate estimates may be calculated using the following general formula, where X is the aggregate of interest in thousands,

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

Type of estimate	Parameters	
	A	B
Home health care agencies		
Current patient	0.005907	523.39
Discharge	0.001098	1545.03

using the Z-test with an overall 0.05 level of significance to test all comparisons mentioned in this report. The critical value of the Z for each test was determined by the number of variables being compared. Not all observed differences were tested, so lack of comment in the text does not mean the difference was not statistically significant.

and *A* and *B* are the appropriate coefficients from table I:

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

Similarly, except for length of service, relative standard errors for percents $100p$ ($0 < p < 1$) may be calculated using the following general formula, where $100p$ is the percent of

interest, *X* is the denominator of the percent, and *B* is the parameter *B* in the formula for approximating the $RSE(X)$. The values for *B* are given in table I.

$$RSE(p) = \frac{B(1-p)}{(pX)}$$

The tests of significance are based on the Bonferroni multiple comparisons

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