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## Characteristics and Use of Home Health Care by Men and Women Aged 65 and Over

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### Abstract

*Objective*—This report presents national estimates on differences in the use of home health care between men and women aged 65 years and over.

*Methods*—Estimates are based on data from the 2007 National Home and Hospice Care Survey, conducted by the Centers for Disease Control and Prevention's National Center for Health Statistics.

*Results*—In the United States, men aged 65 years and over used home health care at a lower rate than women. Among home health care patients 65 years and over, women were more likely to be 85 years and over while men were more likely to be married and receive home health care as post-acute care. Women 65 years and over who received home health care were less likely than males to receive wound care and physical therapy, and more likely to receive homemaker services. Among home health care patients who were 65 years and over, cancer was more prevalent among men, and essential hypertension was more common among women.

**Keywords:** home health care • home and community-based services • caregiving arrangements • chronic conditions

### Introduction

Increased life expectancy in recent decades has contributed to the aging of the population (1). The aging population as a whole and growth of the very oldest segments within it are associated with the transition from informal to formal home health care delivery (1). Home health care is a formal, regulated program of care, providing a range of medical, therapeutic, and nonmedical services; delivered by a variety of health care professionals in the patient's home

(2,3). Differences between men and women 65 years and over in the use of home health care have been reported in previous reports (4–8). In 2007, more than one million men and women 65 years and over received home health care each day (9). This report presents the most recent information available on the receipt of home health care by men and women 65 and over and highlights sex differences in the use of care.

### Methods

The data in this report are from the 2007 National Home and Hospice Care Survey (NHHCS). The 2007 NHHCS is one in a series of nationally representative, cross-sectional sample surveys of U.S. home health and hospice agencies. It is designed to provide descriptive information on home health and hospice care agencies, their staff members, the services they provide, and the people they serve. NHHCS was first conducted in 1992 and was repeated in 1993, 1994, 1996, 1998, 2000, and 2007.

Agencies that provided home health or hospice care services at the time of the survey were eligible to participate in NHHCS. Up to 10 patients were randomly selected per home health care, hospice care, or agency that provided both home health and hospice (mixed agency). Current home health care patients were defined as patients who were on the rolls of the agency as of midnight of the day immediately before the agency interview. Further information on the sampling, survey design, and other survey methodology is available in the “Technical Notes” and documentation provided at: <http://www.cdc.gov/nchs/nhhcs.htm> and in Dwyer et al. (10).



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## Data analysis

The 2007 NHHCS survey sampled 3,226 men and women aged 65 years and over who received home health care. Cases with missing data were excluded from the analyses on a variable by variable basis. None of the variables had missing data in excess of 10%. One variable, marital status, has 9% missing; three variables have data missing between 1% and 3%; all other variables have less than 1% missing.

Weights that take into account all sample stages, with adjustments for nonresponse, were used to produce national estimates of demographic and selected health characteristics of men and women 65 years and over who received home health care. Differences between subgroups were evaluated with two-tailed *t* test for rates per 1,000 population; and Chi-square tests at the  $p=0.05$  level for differences in percentages and percent distributions. All percentages in Figures 2–5 are unadjusted. Age-adjusted analyses were performed using logistic regression for differences in age distribution in Figures 2–5; all significant differences

remained after age-adjusted regression analyses were performed (see “Technical Notes” table). All comparisons reported in the text are statistically significant unless otherwise indicated. Data analyses were performed using SAS version 9.1 (SAS Institute, Cary N.C.)(11) and SUDAAN version 9.0 (RTI, Research Triangle Park, N.C.)(12).

## Results

### Rate of home health care use

- In the United States, the rate of home health care use for women aged 65 and over was 55% higher than the rate for men (Figure 1).
- The rate of home health care use among women aged 65–74 years was 60% higher than the rate for men in that age group (Figure 1). The rate of home health care use for women aged 75–84 years was 42% higher than the rate for men in that age group.
- The rate of home health care use among women aged 85 years and over was 22% higher than the rate for

men aged 85 years and over but the difference was not statistically significant. This lack of significance may be due to insufficient sample size.

### Age, marital status, and relationship to primary caregiver

- Female home health care patients aged 65 years and over were more likely than male patients to be 85 years and over and were almost three times as likely to be widowed (Figure 2).
- More than 80% of home health care patients aged 65 years and over had a primary caregiver outside of the home health care agency (males, 85% and females, 83%) (data not shown).
- Male home health care patients aged 65 years and over who had a primary caregiver outside of the home health care agency were almost three times as likely as female patients to have their spouse as their primary caregiver; women were about twice as likely as men to have a child or other nonspousal family member as their primary caregiver.

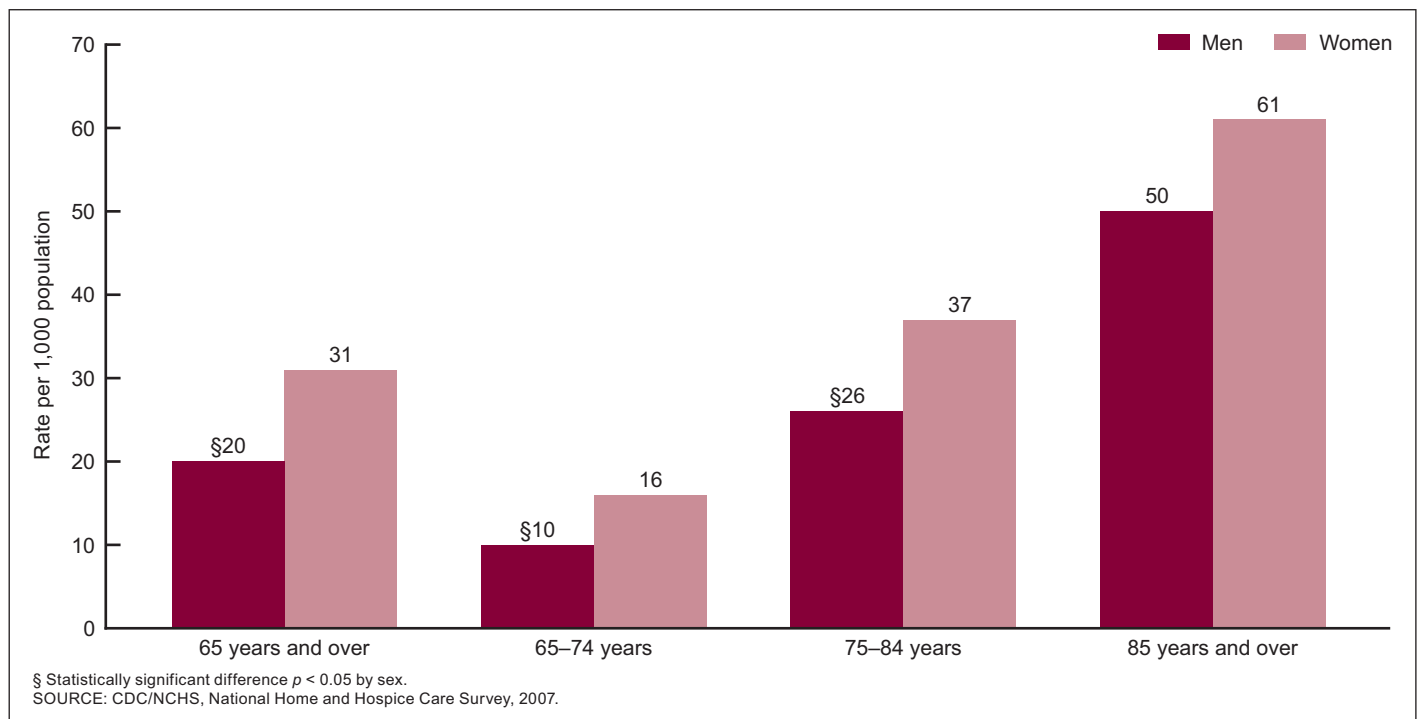
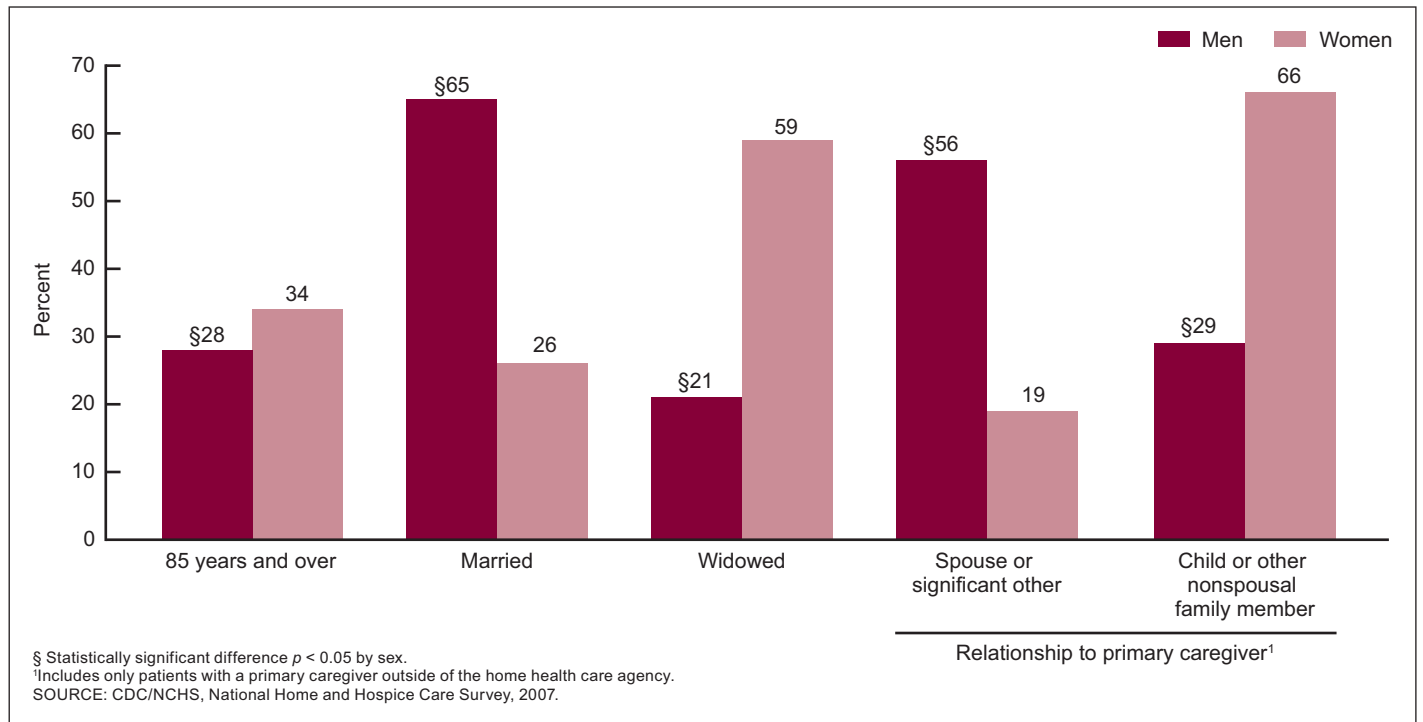


Figure 1. Rate of receipt of home health care per 1,000 civilian noninstitutionalized population aged 65 and over by sex: United States, 2007

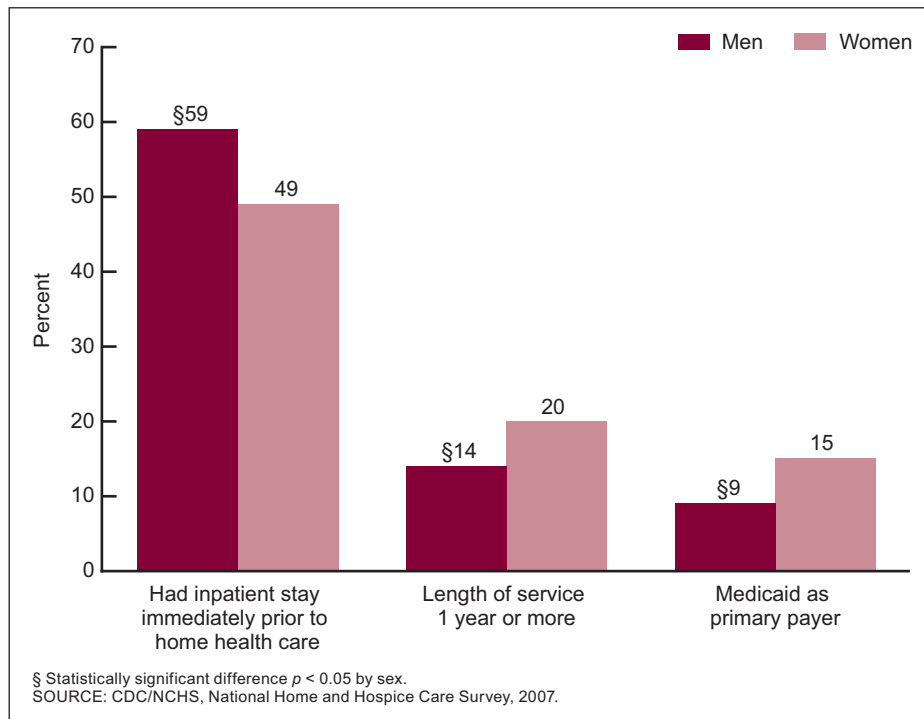


**Figure 2. Percentage of men and women aged 65 and over receiving home health care by selected demographic and caregiver characteristics: United States, 2007**

### Post-acute care, length of service, and payment source

Male home health care patients aged 65 and over were more likely than

female patients to have had an inpatient stay immediately prior to receiving home health care (Figure 3).



**Figure 3. Percentage of men and women aged 65 and over receiving home health care by selected use and payment characteristics: United States, 2007**

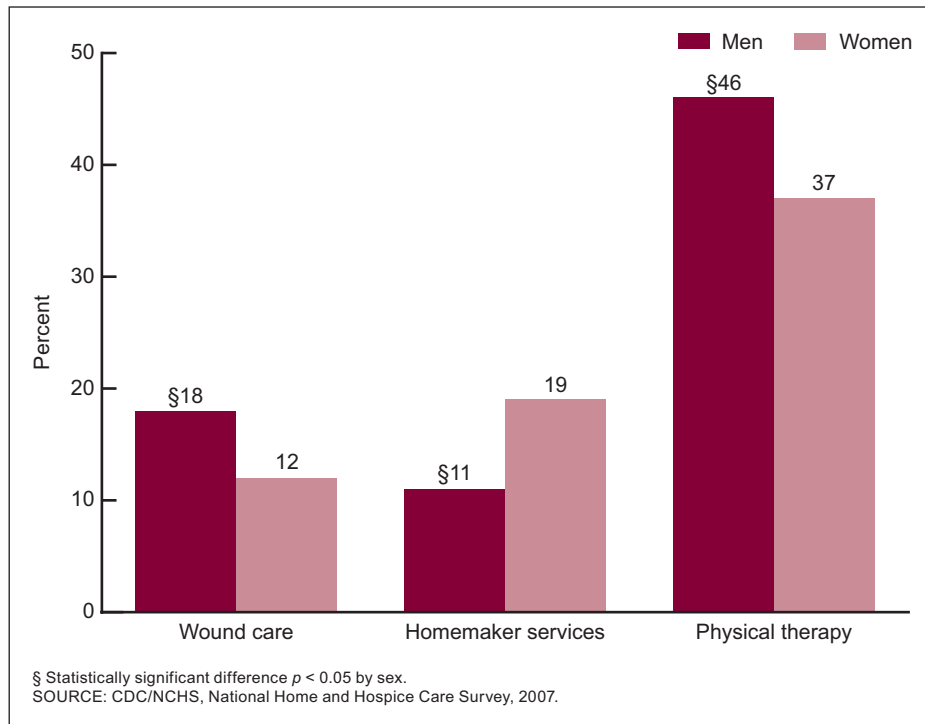
- Compared with home health care male patients 65 years and over, females were more likely to have received home health care for 1 year or more and almost twice as likely to have Medicaid as their primary source of payment.

### Services received

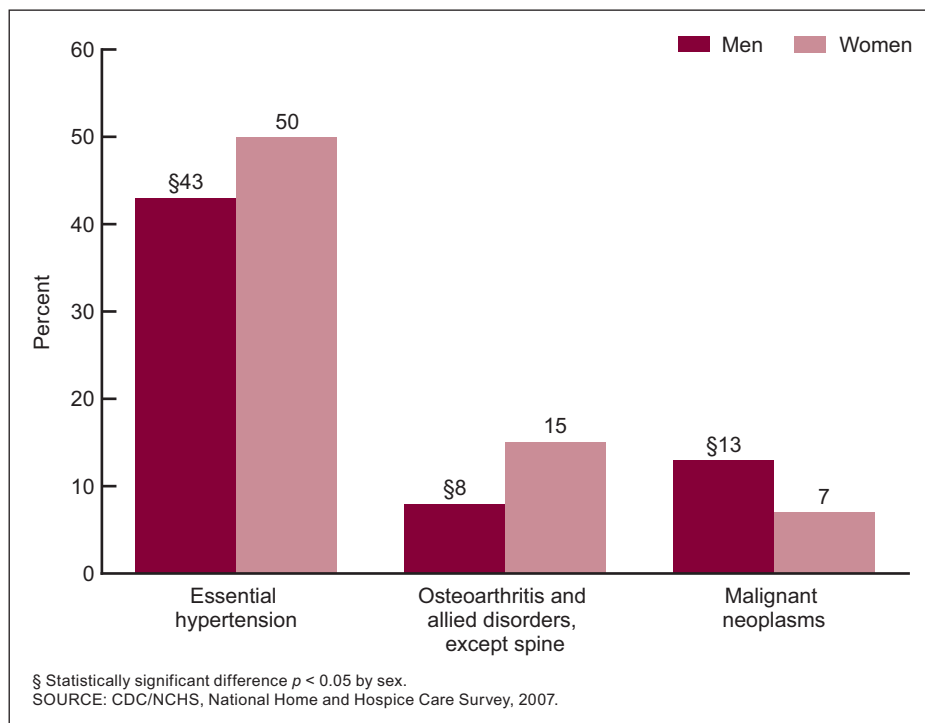
- Services commonly used by home health care patients aged 65 years and over included skilled nursing services (84%), physical therapy (40%), assistance with activities of daily living (ADLs) (37%), homemaker services (17%), occupational therapy (14%), wound care (14%), and dietary counseling (14%) (“[Technical Notes](#)” table).
- Sex differences were found for three of these commonly used services. Men were more likely to receive skilled care, including wound care and physical therapy, whereas women were almost twice as likely to receive homemaker services (Figure 4).

### Chronic conditions

- The prevalence of eight common chronic conditions were examined.



**Figure 4. Percentage of men and women aged 65 and over receiving home health care by selected services: United States, 2007**



**Figure 5. Percentage of men and women aged 65 and over receiving home health care by selected chronic conditions: United States, 2007**

cerebrovascular disease (“[Technical Notes](#)” table).

- Sex differences were found for three of these eight common chronic conditions. Among home health care patients, women were more likely than men to have hypertension and were almost twice as likely to have osteoarthritis, whereas men were nearly twice as likely to have malignant neoplasms ([Figure 5](#)).

## Summary

This report presents national estimates on differences in the use of home health care between men and women aged 65 years and over. Among adults ages 65–84, women had significantly higher rates of home health care use than men. Among home health care patients 65 years and over, men were more likely than women to receive home health care immediately after an inpatient stay and more likely to receive services that were associated with post-acute care such as wound care and physical therapy. In contrast, women were more likely than men to receive homemaker services and to receive home health care for longer periods of time. Other gender differences were shown in relationship to the primary caregiver and the types of chronic conditions present. Men aged 65 and over were more likely to have their spouse as their primary caregiver; whereas women were more likely to be widowed and rely on an adult child or other nonspousal family member as their primary caregiver. Women aged 65 and over were more likely than their male counterparts to have essential hypertension and osteoarthritis and allied conditions and less likely to have cancer (malignant neoplasms). To examine whether these differences may actually be attributed to differences in the age distributions between men and women aged 65 and over, age-adjusted percentages were examined for all estimates presented (“[Technical Notes](#)” table). The results of the age-adjustments did not change the original findings. This suggests that the observed sex differences were not due to differences in age distributions between

About one-half of home health care patients aged 65 and over had essential hypertension (48%); 39% had heart disease; 32% had diabetes mellitus; 15% had chronic obstructive

pulmonary disease and allied conditions; 13% had osteoarthritis and allied disorders, except spine; 10% had dementia; 9% had malignant neoplasms; and 8% had

men and women (i.e., the differences by sex remained after adjusting for age). The nationally representative data used in this report provide greater insight on the health care needs and use of home health care services by men and women aged 65 and over. These findings may assist health care providers in targeting specific areas characteristic of the population aged 65 and over.

## References

1. Byrne D, et al. Formal home health care, informal care and family decision making. *International Economic Review*, 50:1205–42. Doi:10.1111/j.1468–2354.2009.0056.x
2. Montauk SL. Home Health Care. *American Family Physician*. Available from: <http://www.aafp.org/afp/981101ap/montauk.html>.
3. Murkofsky RL, Alston K. The past, present, and future of skilled home health agency care. *Clin Geriatr Med* 25:1–17. 2009.
4. Munson ML. Characteristics of elderly home health care users: Data from the 1996 National Home and Hospice Care Survey. *Advance data from vital and health statistics; no 309*. Hyattsville, MD: National Center for Health Statistics. 1999.
5. Dey AN. Characteristics of elderly home health care users: Data from the 1994 National Home and Hospice Care Survey. *Advance data from vital and health statistics; no 279*. Hyattsville, MD: National Center for Health Statistics. 1996.
6. Strahan GW. An overview of home health and hospice care patients: 1994 National Home and Hospice Care Survey. *Advance data from vital and health statistics; no 274*. Hyattsville, MD: National Center for Health Statistics. 1996.
7. Dey AN. Characteristics of elderly home health care users: Data from the 1993 National Home and Hospice Care Survey. *Advance data from vital and health statistics; no 272*. Hyattsville, MD: National Center for Health Statistics. 1996.
8. Hing E. Characteristics of elderly home health patients: Preliminary data from the 1992 National Home and Hospice Care Survey. *Advance data from vital and health statistics; no 247*. Hyattsville, MD: National Center for Health Statistics. 1994.
9. Caffrey C, et al. Home health care and discharged hospice care patients: United States, 2000 and 2007. *National health statistics reports; no 38*. Hyattsville, MD: National Center for Health Statistics. 2011.
10. Dwyer LL, Harris-Kojetin LD, Branden L, Shimizu IM. Redesign and operation of the National Home and Hospice Care Survey, 2007. *National Center for Health Statistics. Vital Health Stat 1(53)*. 2010.
11. SAS version 9.1 (SAS Institute, Cary, N.C.)
12. Research Triangle Institute. SUDAAN (Release 9.0.1). Research Triangle Park, N.C. 2005.
13. International Classification of Diseases, Clinical Modification Sixth Edition. NCHS CD ROM, October 2007 No. 1. DHHS Pub No. (PHS) 07–1260; CS110232 (10/07) T28572. Available from: <http://www.cdc.gov/nchs/icd/icd9cm.htm>.

## Technical Notes

### Sample design

The 2007 National Home and Hospice Care Survey (NHHCS) used a stratified two-stage probability sample design. The first stage, carried out by the Centers for Disease Control and Prevention's National Center for Health Statistics (NCHS), was the selection of home health and hospice agencies from the sample frame of over 15,000 agencies, representing the universe of

agencies providing home health care and hospice services in the United States.

The primary sampling strata of agencies were defined by agency type and metropolitan statistical area (MSA) status. Within these sampling strata, agencies were sorted by census region, ownership, certification status, state, county, ZIP Code, and size (number of employees). For the 2007 NHHCS, 1,545 agencies were sampled with probability proportional to size. A detailed methods report on the 2007 NHHCS is available at [http://www.cdc.gov/nchs/data/series/sr\\_01/sr01\\_053.pdf](http://www.cdc.gov/nchs/data/series/sr_01/sr01_053.pdf).

[cdc.gov/nchs/data/series/sr\\_01/sr01\\_053.pdf](http://www.cdc.gov/nchs/data/series/sr_01/sr01_053.pdf).

The second stage of sample selection was completed by the interviewers during the agency interviews. Current home health patients were randomly selected by a computer algorithm, based on a census list provided by each agency director or his or her designee. Up to 10 current home health patients were randomly selected per home health agency and a combination of up to 10 current home health patients and hospice discharges

**Table. Unadjusted and adjusted percentages of home health care patients aged 65 and over by selected characteristics, according to sex: United States, 2007**

Selected characteristics	Unadjusted			Adjusted	
	All	Male	Female	Male	Female
Age at interview					
85 years and over . . . . .	32	28	34	...	...
Current marital status					
Married . . . . .	39	\$65	26	\$64	26
Widowed . . . . .	47	\$19	50	\$19	49
Primary caregiver status <sup>1</sup>					
Spouse or significant other . . . . .	31	\$56	19	\$54	19
Child (including daughter and son in-law) . . . . .	43	\$22	52	\$22	53
Other (nonspousal) family member . . . . .	12	\$7	14	\$7	14
Post-acute care					
Yes . . . . .	52	\$59	49	\$58	48
Length of service (in days)					
1 year or more . . . . .	18	\$14	20	\$14	19
Primary payment source					
Medicaid . . . . .	13	\$8	14	\$8	14
Services					
Skilled nursing services . . . . .	84	87	83	87	83
Physical therapy . . . . .	40	\$46	37	\$46	37
Assistance with activities of daily living (ADLs) . . . . .	37	35	38	35	38
Wound care . . . . .	14	\$18	12	\$18	12
Dietary counseling . . . . .	14	16	13	16	13
Occupational therapy . . . . .	14	15	14	15	14
Homemaker services . . . . .	17	\$11	19	\$11	19
Diagnosis and ICD-9-CM code <sup>2</sup>					
Essential hypertension . . . . . (401)	48	\$43	50	\$43	50
Heart disease . . . . . (391-392.0, 393-398, 402, 404, 410-416, 420-429)	39	42	37	42	37
Diabetes mellitus . . . . . (250)	32	36	30	35	31
Chronic obstructive pulmonary disease and allied conditions . . . . . (490-496)	15	15	15	14	15
Osteoarthritis and allied disorders, except spine . . . . . (715)	13	\$8	15	\$8	16
Malignant neoplasms . . . . . (140-208, 230-234)	9	\$13	7	\$12	7
Dementia . . . . . (290, 294, 331.0)	10	9	10	10	10
Cerebrovascular disease . . . . . (430-435, 437, 438)	8	9	8	9	8

... Not applicable.

\$ Statistically significant difference  $p < 0.05$  by sex.

<sup>1</sup>Includes only patients with a primary caregiver outside of the home health care agency.

<sup>2</sup>Based on the *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM). Up to 16 diagnoses were recorded for each patient at interview.

SOURCE: CDC/NCHS, National Home and Hospice Care Survey, 2007.



were randomly selected per mixed agency. Current home health patients were defined as patients who were on the rolls of the agency as of midnight of the day immediately before the agency interview.

## Data collection

Data for the 2007 NHHCS were collected through personal interviews with agency directors and staff who used administrative records to answer questions about the agencies, staffs, services, and programs, and medical records to answer questions about current patients and discharges. The agency component of NHHCS interviews was completed for 1,036 agencies. The first-stage agency unweighted response rates was 71% and the weighted by the inverse of the probability of selection was 59%. The second-stage patient unweighted response rate was 95%, and the weighted response rate was 96% (5). A detailed description of the sampling design, data collection, and procedures are available at: [http://www.cdc.gov/nchs/data/nhhcsd/NHHCS\\_NHHAS\\_web\\_documentation.pdf](http://www.cdc.gov/nchs/data/nhhcsd/NHHCS_NHHAS_web_documentation.pdf).

## Estimation

Because the statistics from NHHCS are based on a sample, they will differ somewhat from the data that would have been obtained if a complete census had been taken using the same definitions, instructions, and procedures. However, the probability design of NHHCS permits the calculation of sampling errors. The standard error of a statistic is primarily a measure of sampling variability that occurs by chance because only a sample, rather than the entire population, is surveyed. The standard error also reflects part of the variation that arises in the measurement process but does not include any systematic bias that may be in the data or any 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. More information on

estimation is available at: [http://www.cdc.gov/nchs/data/nhhcsd/NHHCS\\_NHHAS\\_web\\_documentation.pdf](http://www.cdc.gov/nchs/data/nhhcsd/NHHCS_NHHAS_web_documentation.pdf).

## Definition of terms

### Terms relating to home health care patients

*Age*—The patient's age at the time of the interview. Age is calculated as the difference in years between the date of birth and the date of interview.

*Chronic conditions*—Up to 16 diagnoses were included in the analysis (1 primary diagnosis and 15 secondary diagnoses at interview). Diagnoses were coded according to the *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM) (13). The data brief focused on the following conditions: essential hypertension (401), heart disease (391–392.0, 393–398, 402, 404, 410–416, 420–429), diabetes mellitus (250), chronic obstructive pulmonary disease and allied conditions (490–496), osteoarthritis and allied disorder, except spine (715), malignant neoplasms (140–208, 230–234), dementia (290, 294, 331.0), and cerebrovascular disease (430–435, 437, 438).

*Home health care*—Refers to a range of medical and therapeutic services as well as other services delivered at a patient's home or in a residential setting for the purpose of promoting, maintaining, or restoring health or maximizing the level of independence, while minimizing the effects of disability and illness, including terminal illness.

*Home health patient*—A patient on the home health care agency's roster as of the night before the interview. Weighted data represent the total number of home health care patients served each day in 2007.

*Homemaker services*—Includes assistance in personal care, maintenance of a safe and healthy environment and services to enable the individual to carry out the plan of care.

*Post-acute care*—Refers to a patient who was an inpatient in a hospital, nursing home, or some other kind of

health facility before receiving home health care.

*Primary caregiver*—A person who helps the majority of time in caring for someone who is ill, disabled, or aged. Caregivers can be relatives or friends who volunteer their help; or some people provide caregiving services for a cost.

*Primary source of payment*—The single payment source that paid the greatest amount of the patient's charges at the time of the interview.

*Rate*—Refers to the number of home health care patients aged 65 and over per unit of population (i.e., per 1,000 civilian noninstitutionalized persons aged 65 and over). Rates were calculated using U.S. Census Bureau 2007 based post-censal civilian resident population estimates.

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