National Health Statistics Reports

Hospitalization, Readmission, and Death Experience of Noninstitutionalized Medicare Fee-for-service Beneficiaries Aged 65 and Over

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Abstract

Objective—This report provides descriptive measures of hospitalization, readmission, and death among the noninstitutionalized population aged 65 and over using data from a national survey of the noninstitutionalized population linked to Medicare data and the National Death Index. The estimates are presented by self-reported demographic, socioeconomic, heath status, and other characteristics gathered during the interview with the survey participants.

Methods—Data are from the 2000–2005 National Health Interview Survey (NHIS) linked to 2000–2006 Medicare data and the National Center for Health Statistics 2011 Linked Mortality Files. Findings are based on in-home interviews with 25,593 linkage-eligible noninstitutionalized respondents aged 65 and over who were enrolled in fee-for-service (FFS) Medicare during the year following the interview. Among them, 1,100 died during the year following the interview, 5,456 were hospitalized with 3,490 hospitalized once, 1,192 hospitalized twice, and 774 hospitalized three or more times. Among those hospitalized, 1,491 were readmitted to the hospital within 30 days since the discharge. Both population-based and discharge-based measures are used to present the estimates.

Results—This is the first report presenting national estimates on hospitalization, readmission, and death using NHIS data linked to the Medicare claims and death data. Among noninstitutionalized Medicare FFS beneficiaries aged 65 and over, 4.5% died in the year following the interview and 21.6% were hospitalized, with a discharge rate of 348.4 per 1,000 population. Among those who were hospitalized and discharged alive, 17.3% were readmitted within 30 days after discharge. About one-quarter of the deceased died in the hospital (including 7.1% who died during a readmission stay).

Keywords: Medicare claims • linked data • National Death Index • National Health Interview Survey

Introduction

Older persons discharged from acute care hospitals are at risk of 30-day hospital readmission and death. In 2012, nearly every fifth hospitalization among Medicare fee-for-service (FFS) beneficiaries who were discharged from the hospital alive resulted in a subsequent readmission within 30 days (1). Despite the fact that more than 80% of Medicare beneficiaries aged 65 and over would want to die at home (2), in 2013, one-third of 1,904,640 deaths among persons aged 65 and over in the United States occurred in the hospital (3), about the same proportion as in the previous 12 years (4). Among patients admitted to the hospital for pneumonia, 12.1% died within 30 days of admission. Of these, almost one-half died after discharge from the hospital (5).

Studies of hospitalization and readmission are usually undertaken using data from administrative databases or from hospital records (1,6–11). These sources of data are also used to calculate readmission and postadmission death rates that are included in the set of the measures of inpatient hospital quality of care (12,13). The most common hospitalization and readmission measures use the number of hospital discharges

during a time period as a denominator. In addition, measures that are based on the number of persons discharged (which account for the fact that some patients are hospitalized more than once during this time) or on the population that the hospital serves (which account for the fact that some persons are not hospitalized at all) also can be useful. However, patients' characteristics available from administrative databases or from hospital records are limited, and information about patients before the hospitalization is not available.

Recent research shows that patient-centered community worker interventions, such as establishing a measurable goal, encouraging patient confidence in achieving the goal, and developing and following a step-by-step plan for goal achievement, may reduce the 30-day readmission rate in a high-risk population and improve postdischarge outcomes (14). Better community health care services that address improving access to primary care are associated with lower Medicare expenditures (15). To provide such services, it is important to identify the population at risk for readmission and hospitalization. For example, readmission rates for beneficiaries with end-stage renal disease are considerably higher than average, which suggests that certain subgroups of beneficiaries are at greater risk of readmission (16). While using hospital discharge-based measures is particularly important for quality assessment of inpatient care, population-based measures of hospitalization, readmission, and death among the noninstitutionalized population may help to better identify the population at risk and may be of interest to policy makers, managed care organizations, insurers, and community health care organizations such as health centers (15).

Previous studies examining population-based readmission rates have usually been based on study-specific conditions (17) or have not used nationally representative data (18–21). Only a few studies consider a person's characteristics such as socioeconomic status, marital status,

education, self-reported health status, or disability status as risk factors (18,19,22,23).

The objective of this report is to describe variation in hospitalization, readmission, and death rates across participant characteristics. Using data from a national survey of the noninstitutionalized population linked to Medicare data and the National Death Index (NDI) allows the presentation of both discharge-based and population-based measures by self-reported characteristics gathered during the National Health Interview Survey (NHIS) interview with the survey participants regardless of whether they were hospitalized during the year following the NHIS interview or not. This population-based information obtained before the hospitalization may be helpful in finding predictors and determinants of preventable hospitalization and readmission and disparities among Medicare beneficiaries and in facilitating broad patient-centered approaches to prevention strategies in the community and at the time of hospital admission (24).

Data

The 2000–2005 National Health Interview Survey

NHIS is a cross-sectional household interview survey that uses a multistage area probability design to collect data on demographic and health-related information about the civilian noninstitutionalized population residing in the United States at the time of the interview (http://www.cdc.gov/nchs/nhis.htm). While NHIS provides nationally representative estimates yearly, the statistical reliability of the estimates presented in this report is improved by combining data from 6 years of the survey, 2000–2005.

Descriptive categories examined in this report include self-reported demographic characteristics, socioeconomic status, self-reported health and functional status, number of chronic conditions, health risk factors, health insurance information, and hospitalization in the year prior to the NHIS interview.

Age at the time of interview is categorized into three groups: 65–74, 75–84, and 85 and over. Race and Hispanic origin are collected separately in NHIS, first by asking if the participant is Hispanic or Latino, then by asking the participant's race or races. For this report, race and ethnicity are combined into three categories: non-Hispanic white, non-Hispanic black, and Hispanic or Latino. Estimates for beneficiaries in other race/ethnicity groups, as well as those who reported two or more races are not presented due to the small number of participants in these groups; however, these persons are included in statistics based on other variables. Living arrangements are presented as living with a spouse or partner, living with someone other than spouse or a partner, and living alone.

In this report, socioeconomic status is characterized by education and family income level. Two education categories are used: less than a high school education [no high school diploma or General Educational Development (GED) high school equivalency certificate] and at least a high school education (including high school diploma, GED, some college, or more). Because income data are often missing, multiple imputed income files (25) were used to categorize annual family income into groups of below 200% of the poverty threshold or at or above 200% of the poverty threshold.

Self-reported health status is presented by three categories, fair or poor, good, and very good or excellent. Chronic conditions are self-reported, health professional-diagnosed conditions. The number of reported chronic conditions is dichotomized into two groups: no condition or one condition and two or more conditions. These conditions include hypertension, heart disease (including coronary heart disease, angina, myocardial infarction, and other heart disease), stroke, emphysema, asthma, chronic bronchitis, diabetes, kidney disease, liver disease, ulcer, and cancers.

Health risk factors analyzed are smoking and leisure-time physical activity participation. Smoking status is categorized as ever smoker (reported

smoking at least 100 cigarettes in a lifetime) and never smoker. Persons who reported they were unable to perform leisure-time physical activity were classified as unable, those who did not report any sessions of light or moderate or vigorous leisure-time physical activity of at least 10 minutes were classified as inactive, and others who answered the question were categorized as performing some or regular leisure-time physical activity.

Disability measures used in this report are basic actions difficulty, complex activity limitation (26), and needing help with activities of daily living (ADL). Basic actions difficulty captures limitations or difficulties in movement (walking, standing, bending or kneeling, reaching overhead, and using the hands and fingers) and in sensory (the ability of a person to see and hear what is going on around him or her), emotional [a score of 13 or more on the Kessler-6 serious psychological distress scale (27)], or cognitive functioning (difficulties with remembering or experiencing confusion) that are associated with some health problem. The complex activity limitation variable is constructed based on reported difficulties with any component of either ADL such as bathing; the instrumental activities of daily living (IADL) such as shopping; work limitations because of a physical, mental, or emotional problem; or social limitation such as participation in social activities or doing things to relax at home. The variable ''needing help with ADL'' is defined as needing the help of other persons with eating, bathing, dressing, or getting around inside the home because of a physical, mental, or emotional problem.

Two dichotomous (yes, no) variables are used to classify reported enrollment in private insurance and in Medicaid. Another dichotomous variable describes hospitalization in the past year. This variable is based on self-report of staying in a hospital overnight during the 12 months before the interview and is not included in the calculation of the hospitalization and discharge measures in this report.

Medicare data linked to 2000–2005 NHIS

The variables describing Medicare enrollment and inpatient hospital use for NHIS 2000–2005 participants during the year following the interview were constructed from the NHIS 2000–2005 Linked Medicare Files: http://www.cdc.gov/nchs/data_access/data_linkage/cms_medicare.htm (28). The Centers for Disease Control and Prevention's National Center for Health Statistics (NCHS) record linkage program has linked various NCHS surveys to administrative records from the Centers for Medicare & Medicaid Services (CMS) and the Social Security Administration (SSA) under an interagency agreement among NCHS, CMS, SSA, and the Office of the Assistant Secretary for Planning and Evaluation (28).

The 2000–2005 NHIS have been linked to 1999–2007 Medicare claims. Those NHIS participants who had sufficient personal identifier information (PII), agreed to provide their Social Security number (SSN) and Health Insurance Claim number, and had an SSN verified by the SSA Enumeration Verification System were eligible for linkage to CMS and SSA records (linkage-eligible). Among the linkage-eligible, those with participant-supplied PII matching the CMS denominator file on SSN, date of birth (month, day, year), and sex, were considered to be a match (linked) to CMS records (28). Among 65,069 NHIS 2000–2005 participants aged 65 and over, 32,136 were linkage-eligible. Of these, 98% of the sample adults (n = 31,589) were linked to the Medicare data.

CMS denominator files were used to obtain information on Medicare plan coverage. Provider Analysis and Review (MEDPAR) files contain Medicare claims for inpatient hospitalizations and skilled nursing facilities stays and were used to determine the dates of admission and discharge for overnight inpatient stays in the hospital.

Mortality records linked to 2000–2005 NHIS

The mortality experience of all Medicare-linked NHIS 2000–2005 participants was identified from the NCHS 2011 Linked Mortality Files (29). Mortality status of NCHS survey participants was ascertained primarily through probabilistic record matching with NDI (30). NDI is an NCHS centralized database of all U.S. deaths beginning in 1979 (31). Additional sources of information to determine the mortality status of a survey participant include SSA, CMS, and death certificates. If a source of mortality other than an NDI record was available, the participant was considered deceased for the linked files (32). Among 31,589 NHIS 2000–2005 participants aged 65 and over who were linked to Medicare, 41% (12,862) were deceased by the end of 2011.

Methods

Study population

Among 31,589 NHIS 2000–2005 Medicare-linked participants aged 65 and over, 99% of participants (n = 31,355) were enrolled in Medicare during the year following the NHIS interview or until death if the date of death was 12 months or less after the date of the NHIS interview. For example, if a person was interviewed in October 2004 and hospitalized and discharged in January 2005, readmitted on February 1 and discharged on February 15, 2005, hospitalized again in July 2005, and died in August 2005, this person would account for three discharges, one readmission, and a death within the year following the NHIS interview.

CMS denominator files allow obtaining information on Medicare plan coverage by month of the year. During the year following the NHIS interview, 25,593 linked NHIS participants were enrolled only in Medicare FFS, and 5,762 were enrolled in a Medicare Advantage (including Medicare HMO) plan for at least 1 month. The analysis was weighted to obtain national

estimates for noninstitutionalized Medicare participants. To assess how Medicare FFS enrollees ($n = 25,593$) differ from those enrolled in Medicare Advantage ($n = 4,542$) and those who switched between Medicare FFS and Medicare Advantage plans at least once during the year ($n = 1,220$), the percentages of enrollees in these three groups of enrollment by beneficiary's characteristic were estimated. Because Medicare claims generally are not submitted to CMS for health services provided to Medicare Advantage (including Medicare HMO) enrollees, those who were enrolled in Medicare Advantage plan for at least 1 month during the study follow-up period were excluded from further study analysis.

Study follow-up period

This report reviews inpatient hospitalization, hospital 30-day readmission, and 1-year mortality experience of NHIS 2000–2005 participants who were Medicare FFS beneficiaries during the year following the NHIS interview. Medicare Denominator files were used to identify months of enrollment or disenrollment to and from Medicare FFS and Medicare Advantage plans during the year. Using the data from the Linked Medicare Files and NCHS 2011 Linked Mortality Files, a timeline was created for each participant for the year following the NHIS interview. Medicare inpatient claims data were used to identify the dates of admission and discharge from the hospital. The NCHS 2011 Linked Mortality Files were used to identify the vital status and the date of death, if applicable. Linked participants with a date of death later than 12 months after the date of the interview or without a death record in the NCHS 2011 Linked Mortality Files were assumed alive at the end of the year following the NHIS interview ($n = 30,058$).

Statistical analysis

To account for the complex survey design, the statistical packages SAS version 9.3 (SAS Institute, Cary, N.C.) and SUDAAN release 11.0.0 (RTI International, Research Triangle Park, N.C.) were used for data analysis. All analyses include sample adult weights for NHIS 2000–2005. To account for possible differences between adults who were eligible for linkage and those who were not, sample weights were further adjusted for linkage ineligibility by using the SUDAAN procedure PROC WTADJUST. With PROC WTADJUST, the model-based calibration approach was used to adjust the NHIS sample adult weights for race and sex (33).

The standard errors (SE), 95% confidence intervals (CI), and relative standard errors (RSE) were calculated using SUDAAN software. Estimates with RSE of 30% or more and those based on fewer than 30 unweighted records are considered unreliable and are not presented in this report. Estimates based on 30 or more but less than 59 unweighted records and with an RSE less than 30% are considered of low reliability and are shown with a preceding dagger in the tables. Differences between survey estimates were tested for statistical significance using two-tailed t tests with a level of significance of 0.05. Terms such as "higher than" and "lower than" indicate a statistically significant difference at the 0.05 level.

Unless stated otherwise, the rates and percentages among persons or discharges aged 65 and over are age-adjusted to the 2000 U.S. standard population using the age groups 65–74, 75–84, and 85 and over.

Hospitalization measures

For the purpose of this analysis, hospitalization is defined as a hospital stay in any short- or long-term hospital with more than 1 day between the admission and discharge dates on the hospital claims. Because more than one claim may be submitted for one inpatient stay, subsequent claims were reviewed to identify hospitalization admission and discharge dates. Two inpatient hospital stays with the discharge date on one claim that was the same as the admission date on another inpatient claim were defined as a

transfer and were counted as one hospitalization with admission date from the first claim and discharge date from the second claim.

In this report, the number of discharges is computed as a weighted sum of all discharges with an admission date within the year of the NHIS interview. Among 25,593 Medicare FFS study participants, 5,456 were hospitalized in the year following the NHIS interview (Figure 1) with 3,490 hospitalized once, 1,192 hospitalized twice, and 774 hospitalized 3–13 times. Among those hospitalized, less than 1% of beneficiaries ($n = 71$) were hospitalized 6–13 times (Figure 1). A live discharge is defined as a discharge with a recorded status "discharged alive" on an inpatient claim for a patient. During the year following the interview, 5,355 participants were discharged alive at least once (Figure 1). Among live discharges, 85% of participants were hospitalized and discharged alive once ($n = 3,477$) or twice ($n = 1,157$), and less than 1% ($n = 66$) were hospitalized and discharged 6–13 times (Figure 1).

The discharge rate per 1,000 population was calculated by dividing the weighted number of all discharges in the year following the NHIS interview by the weighted number of noninstitutionalized Medicare FFS beneficiaries (NHIS 2000–2005 participants) and multiplying the ratio by 1,000. The live discharge rate per 1,000 population was calculated by dividing the weighted number of all live discharges in the year following the interview by the weighted number of noninstitutionalized Medicare FFS beneficiaries and multiplying the ratio by 1,000. Because a person may be hospitalized and discharged multiple times during a year, the discharge rate is a measure of the number of discharges per population and does not represent the number of persons discharged during a year.

The percentage of noninstitutionalized Medicare FFS beneficiaries discharged at least once during the year following the NHIS interview was calculated by dividing the weighted number of beneficiaries with

Discharged[1] alive at least
once (*n* = 5,355):
3,477: 1 time
1,157: 2 times
655: 3–5 times
66: 6–13 times

Total hospitalized[2] at least
once (*n* = 5,456):
3,490: 1 time
1,192: 2 times
703: 3–5 times
71: 6–13 times

Noninstitutionalized
FFS Medicare
beneficiaries[3]
(*n* = 25,593)

Readmitted[4] at least
once (*n* = 1,033; total
readmissions = 1,491)

[1]A hospital stay in any short- or long-term hospital with a "discharge alive" status on the hospital claim submitted for Medicare reimbursement. Excludes those who were hospitalized only once and died in the hospital.
[2]A hospital stay in any short- or long-term hospital with more than 1 day between the admission and discharge dates on the hospital claim(s) submitted for Medicare reimbursement. Includes those who died in the hospital.
[3]The 2000–2005 National Health Interview Survey linkage-eligible participants enrolled in Medicare FFS during the year after the interview or until death if died earlier. Refers to entire oval.
[4]A hospital stay in any short- or long-term hospital with a date of admission within 30 days of the day following a date of discharge from another hospital stay.
NOTE: FFS is fee-for-service.
SOURCE: CDC/NCHS, National Health Interview Survey, 2000–2005 linked to 2000–2006 Medicare data and NCHS 2011 Linked Mortality Files.
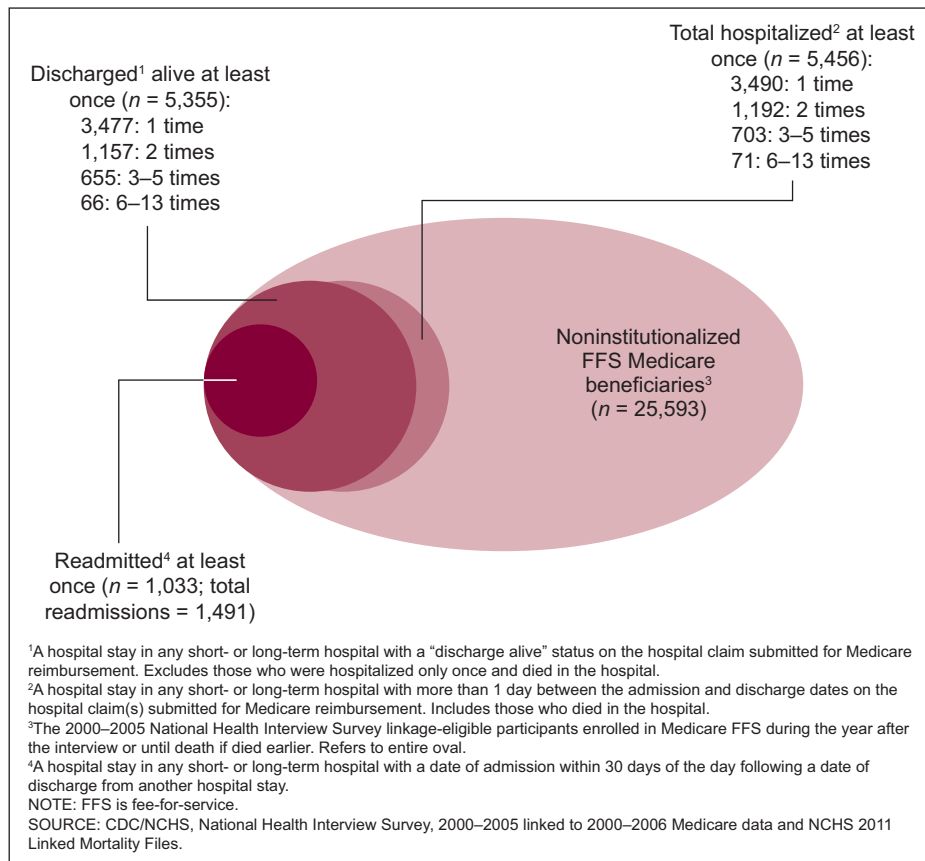
Figure 1. The 2000–2005 National Health Interview Survey linkage-eligible participants aged 65 and over enrolled in Medicare FFS during the year following the interview, by hospitalization and readmission status

at least one discharge record during the year following the NHIS interview by the weighted number of all beneficiaries and multiplying the ratio by 100. This represents the percentage of persons hospitalized during a year, including those with multiple discharges.

Mortality measures

Among study participants, 1,100 died during the year following the NHIS interview. The death rate per 100 population (percentage of persons died) was calculated by dividing the weighted number of deaths in the year by the weighted number of noninstitutionalized Medicare FFS beneficiaries and multiplying the ratio by 100. The death was determined to occur within 30 days of discharge if there were 30 days or fewer between the date of death and the date of discharge (*n* = 356). The percentage of persons who had died within 30 days after hospital discharge was calculated by dividing the weighted

number of deaths during 30 days after hospital discharge (but not at the date of discharge) by the weighted number of participants and multiplying the ratio by 100.

The death was determined to occur in the hospital if inpatient claim contains a status "discharged dead." For the purpose of this report, those who died during the year following the NHIS interview were stratified by hospitalization status: deceased within 30 days of discharge (*n* = 356, including 275 who died outside of the hospital and 81 who died during readmission hospital stay); deceased who died in the hospital but not during a readmission stay (*n* = 195); those who were hospitalized and died after 30 days since the discharge date (*n* = 166); and deceased who were not hospitalized after the NHIS interview (*n* = 383) (Figure 2). The crude percentage of deaths by hospitalization status was calculated by dividing the weighted number of deaths in the hospitalization

status category by the weighted total number of deaths.

Readmission measures

In this report, a readmission inpatient stay is defined as a hospitalization with a date of admission within 30 days of the day following discharge from another hospitalization, as defined in this report (*n* = 1,491) (Figure 1). The readmission rate per 100 live discharges is calculated by dividing the weighted number of readmissions by the weighted number of live discharges and multiplying the ratio by 100. Because a person may be discharged and readmitted multiple times during a year, readmission rate is a measure of the number of readmissions per live discharges and does not represent the number of persons readmitted during a year.

The percentage of noninstitutionalized Medicare FFS beneficiaries with at least one readmission is calculated by dividing the weighted number of beneficiaries who were readmitted at least once by the weighted number of beneficiaries and multiplying the ratio by 100. This represents a percentage of persons who were hospitalized and readmitted during the year, including those with multiple discharges and readmissions.

Results

Medicare beneficiary by type of enrollment

Of noninstitutionalized Medicare beneficiaries aged 65 and over, 82.5% remained enrolled in Medicare FFS for an entire year (or until death), 13.9% were enrolled in a Medicare Advantage Plan (including Medicare HMO), and 3.7% switched between Medicare Advantage and Medicare FFS plans at least once (Table 1). The percentage of Medicare FFS enrollees among non-Hispanic white and non-Hispanic black beneficiaries was 1.2 times the percentage among Hispanic or Latino beneficiaries (84.1% and 81.1% among non-Hispanic white and non-Hispanic black beneficiaries, respectively

Died in hospital[1], readmission[2] stay at time of death
(Less than or equal to 30 days since previous discharge, *n* = 81)

Died, no hospital stay during the year following NHIS interview (*n* = 383)

Died more than 30 days after last discharge, not in hospital (*n* = 166)

Died in hospital[1], not a readmission[2] stay at time of death (*n* = 195)

Died less than or equal to 30 days after last discharge, not in hospital (*n* = 275)

7.1%

15.8%

34.9%

17.5%

24.7%

[1]A hospital stay in any short- or long-term hospital with more than 1 day between the admission and discharge dates on the hospital claim(s) submitted for Medicare reimbursement.
[2]A hospital stay in any short- or long-term hospital with a date of admission within 30 days of the day following a date of discharge from another hospital stay.
NOTES: NHIS is National Health Interview Survey. Percentages are age-adjusted to the 2000 standard population using three age groups: 65–74, 75–84, and 85 and over.
SOURCE: CDC/NCHS, National Health Interview Survey, 2000–2005 linked to 2000–2006 Medicare data and NCHS 2011 Linked Mortality Files.
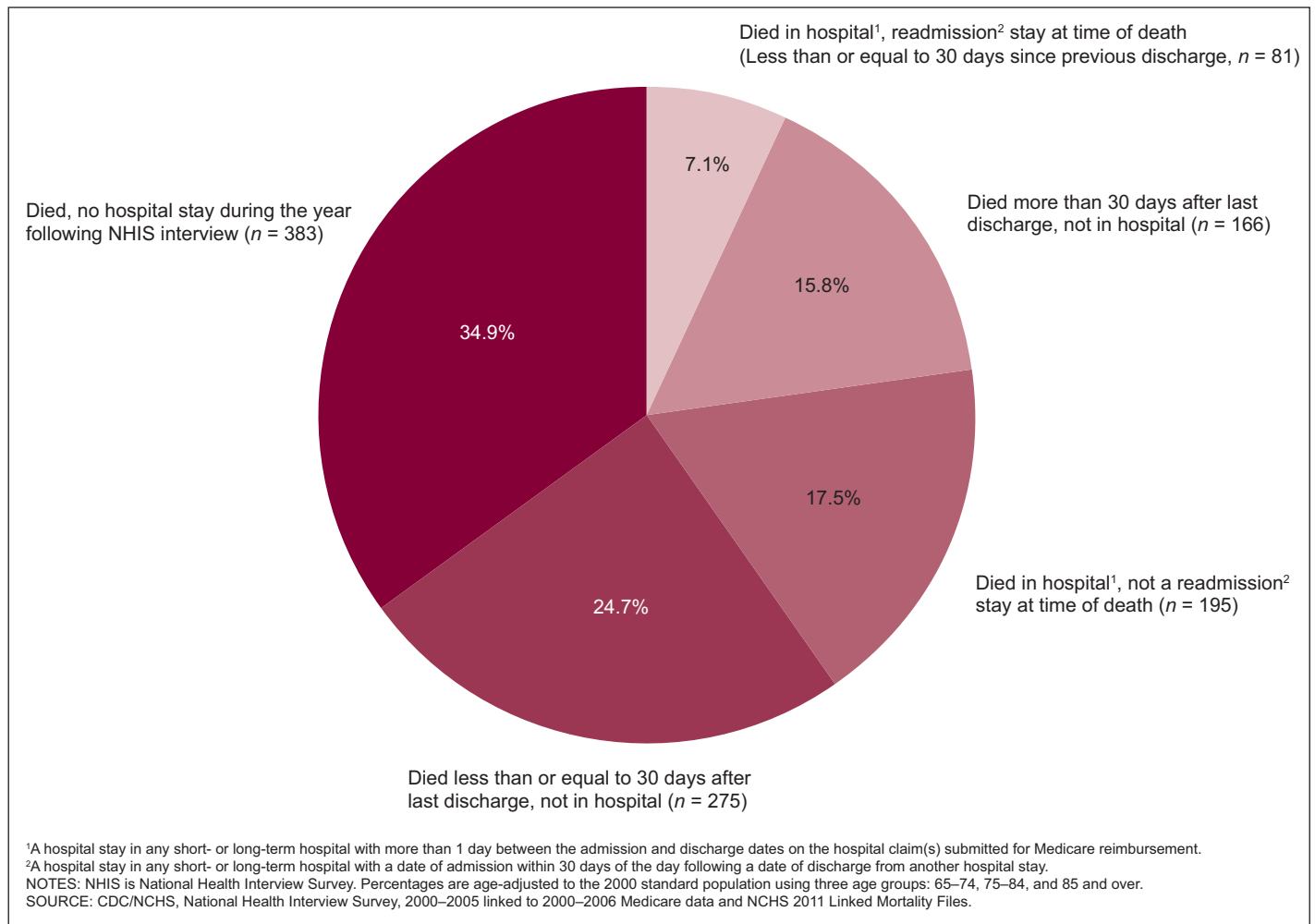
Figure 2. Age-adjusted percent distribution of noninstitutionalized Medicare FFS beneficiaries aged 65 and over who died during the year following the National Health Interview Survey interview, by hospitalization and readmission status: United States, 2000–2006

compared with 67.7% among Hispanic or Latino beneficiaries). The percentage of Medicare Advantage Plan enrollees was twice as high among Hispanic or Latino beneficiaries (25.1%) as among non-Hispanic black (12.8%) and non-Hispanic white (12.8%) beneficiaries (Table 1, Figure 3).

The percentage of Medicare FFS enrollment was higher among those who reported receiving Medicaid benefits (89.8%) or being enrolled in private insurance (87.1%) compared with those who did not report Medicaid (81.7%) or private insurance (74.4%) (Table 1).

Those enrolled in a Medicare Advantage plan and those who switched between Medicare Advantage and Medicare FFS during the follow-up period were excluded from further analysis.

Mortality among noninstitutionalized Medicare FFS beneficiaries aged 65 and over

Death rates

Among noninstitutionalized Medicare FFS beneficiaries aged 65 and over, 4.5% died in the year following the NHIS interview (Table 2). The death rate increased with age from 2.3% among those aged 65–74 to 12.7% among those aged 85 and over, and was 1.5 times (95% CI 1.3, 1.7) as high among men (5.6%) as among women (3.7%).

The death rate was higher among those with less than a high school education compared with those with at least a high school education, among those with family incomes below 200% compared with those at or above 200%

of the poverty threshold, and among those not living alone compared with those living alone. Persons with two or more chronic conditions died at a rate 2.5 times (95% CI 2.0, 3.1) the rate of those who reported none or one condition (6.1% compared with 2.4%). Among those who reported their health as fair or poor, 9.3% died within a year of the NHIS interview, a rate 4.9 times (95% CI 3.8, 6.0) as high as the rate of 1.9% among those who reported their health as excellent or very good (Table 2).

Among those who reported any difficulties with basic actions or complex activity limitations, 5.4% died in the year following the NHIS interview, compared with 1.8% of those who did not report such difficulties. Among those who needed help with ADL, 17.9% died within the year of the NHIS interview, a rate 5.3 times
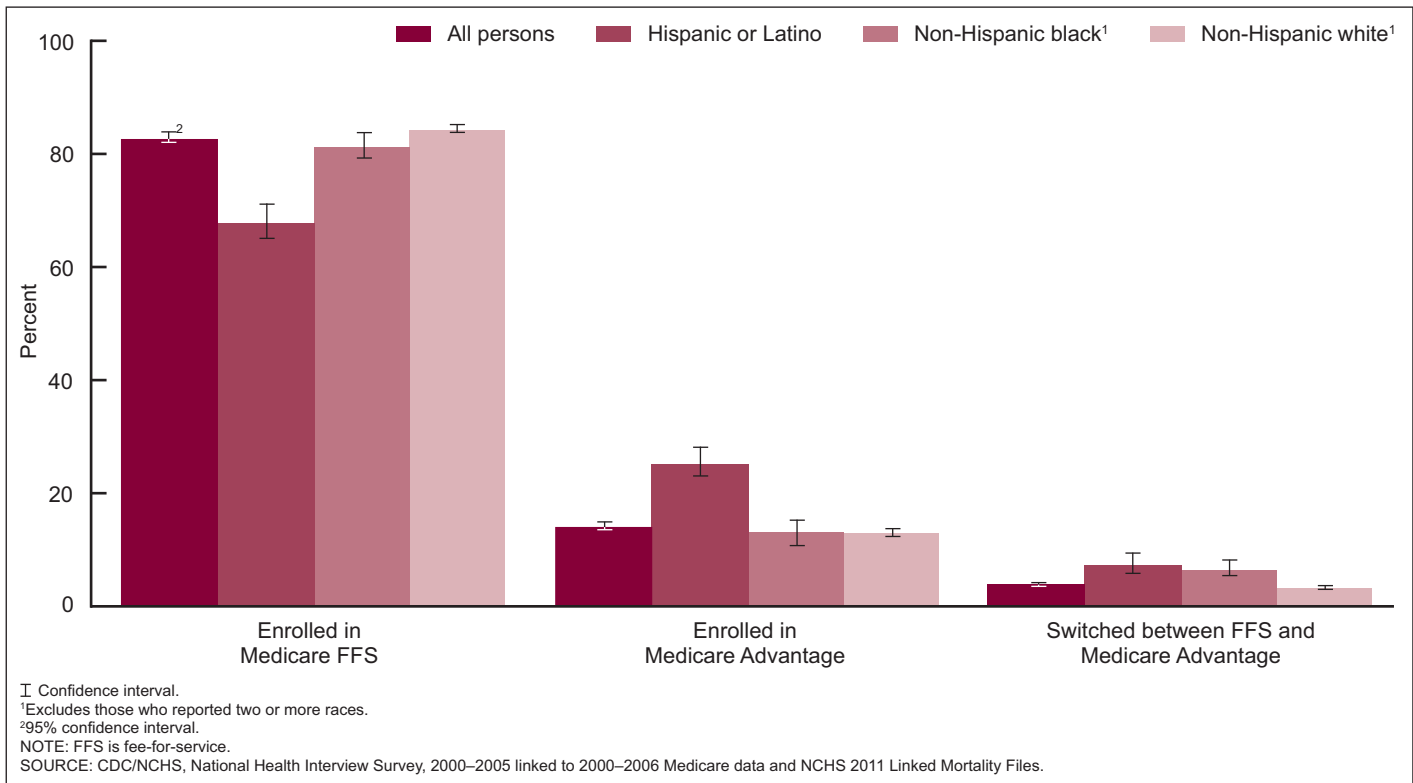
Figure 3. Medicare enrollment among noninstitutionalized Medicare beneficiaries aged 65 and over during the year following the National Health Interview Survey interview, by race and Hispanic origin: United States, 2000–2006

(95% CI 4.6, 6.0) as high as the rate of 3.4% among those who did not need such help. Current and former smokers died at a rate 1.7 times (95% CI 1.3, 2.0) as high as the rate for those who never smoked (5.3% compared with 3.2%). Among those who reported an overnight hospital stay during the year prior to the NHIS interview, 9.6% died during the year following the interview, compared with 3.1% of those who did not report an overnight hospital stay. Among Medicaid recipients, the death rate (6.1%) was 1.4 times (95% CI 1.2, 1.7) the rate for those who did not report receiving Medicaid (4.3%). Observed differences in death rates by race and Hispanic origin were not statistically significant (Table 2).

Distribution of deaths by hospitalization and readmission status

Among noninstitutionalized Medicare FFS beneficiaries deceased during the year following the NHIS interview, about one-third (31.8%) died within 30 days after an inpatient hospital discharge, including 7.1% who

died during their readmission hospital stay. Another 17.5% died in the hospital but not during a readmission stay, 15.8% were discharged alive but died more than 30 days after discharge, and 34.9% died but were not hospitalized (Table 2, Figure 2).

Those who reported hospitalization in the year prior to the NHIS interview and those who reported two or more chronic conditions were more likely to be hospitalized before death. Those who reported hospitalization in the year prior to the NHIS interview also were more likely to die in the hospital (Table 2). Other observed differences in percent distribution (where available) by hospitalization and readmission status were not statistically significant.

Percentage of persons who died within 30 days after discharge

Among noninstitutionalized FFS Medicare beneficiaries aged 65 and over, 1.5% were hospitalized, discharged alive, and died within 30 days after discharge (including those who died during a readmission hospital stay) (Table 3). This percentage increased

with age, from 0.8% among those aged 65–74 to 1.8% among those aged 75–84 and 3.9% among those aged 85 and over. Men were more likely (95% CI 1.3, 2.0) to die within 30 days after discharge (2.0%) than women (1.2%). Persons with any type of basic actions difficulties were 2.9 times (95% CI 1.9, 3.9) as likely to die within 30 days of discharge as persons without such difficulties (2.0% and 0.7%, respectively). The percentage of those hospitalized, discharged alive, and deceased within 30 days among persons with any type of complex activity limitations (2.9%) was 3.6 times (95% CI 2.5, 4.8) as high as among those without such limitations (0.8%). Those in fair or poor health (3.2%) were 2.9 times as likely (95% CI 2.3, 3.6) to die within 30 days after the discharge as those in good health (1.1%). The percentage of persons who were hospitalized and died within 30 days of discharge among those who needed help with ADL (6.0%) was 5.0 times (95% CI 3.6, 6.4) the percentage among those who did not need such help (1.2%). Among those who reported an overnight

hospital stay during the year prior to the NHIS interview, 3.4% died within 30 days of discharge, 3.4 times (95% CI 2.5, 4.3) the percentage of those who did not report an overnight stay (1.0%).

Hospitalizations among noninstitutionalized FFS Medicare beneficiaries aged 65 and over

Discharge rates

The discharge rate for hospitalizations among noninstitutionalized FFS Medicare beneficiaries during the year following the NHIS interview was 348.4 per 1,000

population (Table 4, Figure 4). The rates increased with age from 264.0 per 1,000 population among beneficiaries aged 65–74 to 580.1 per 1,000 among those aged 85 and over. The rates were about the same among male and female discharges (358.5 and 341.1 per 1,000 population, respectively). The discharge rate for non-Hispanic black beneficiaries (433.0 per 1,000) was about 1.3 times (95% CI 1.1, 1.4) the rate for non-Hispanic white beneficiaries (343.6 per 1,000).

The discharge rate was 1.4 times (95% CI 1.3, 1.5) as high among beneficiaries with less than a high school education (440.8 per 1,000) as among those with at least a high school

education (307.3 per 1,000). Similarly, the discharge rate was 1.4 times (95% CI 1.3, 1.5) as high among those below 200% (425.5 per 1,000) as among those at or above 200% of the poverty threshold (307.0 per 1,000). Those who lived with persons other than a spouse or partner were more likely to be hospitalized (428.8 per 1,000 population) compared with those living alone or with spouse or partner (365.1 and 330.5 per 1,000 population, respectively).

The discharge rate among persons with any basic actions difficulties (439.2 per 1,000) was 2.1 times (95% CI 1.9, 2.4) the rate of those without such difficulties (206.1 per 1,000). Those
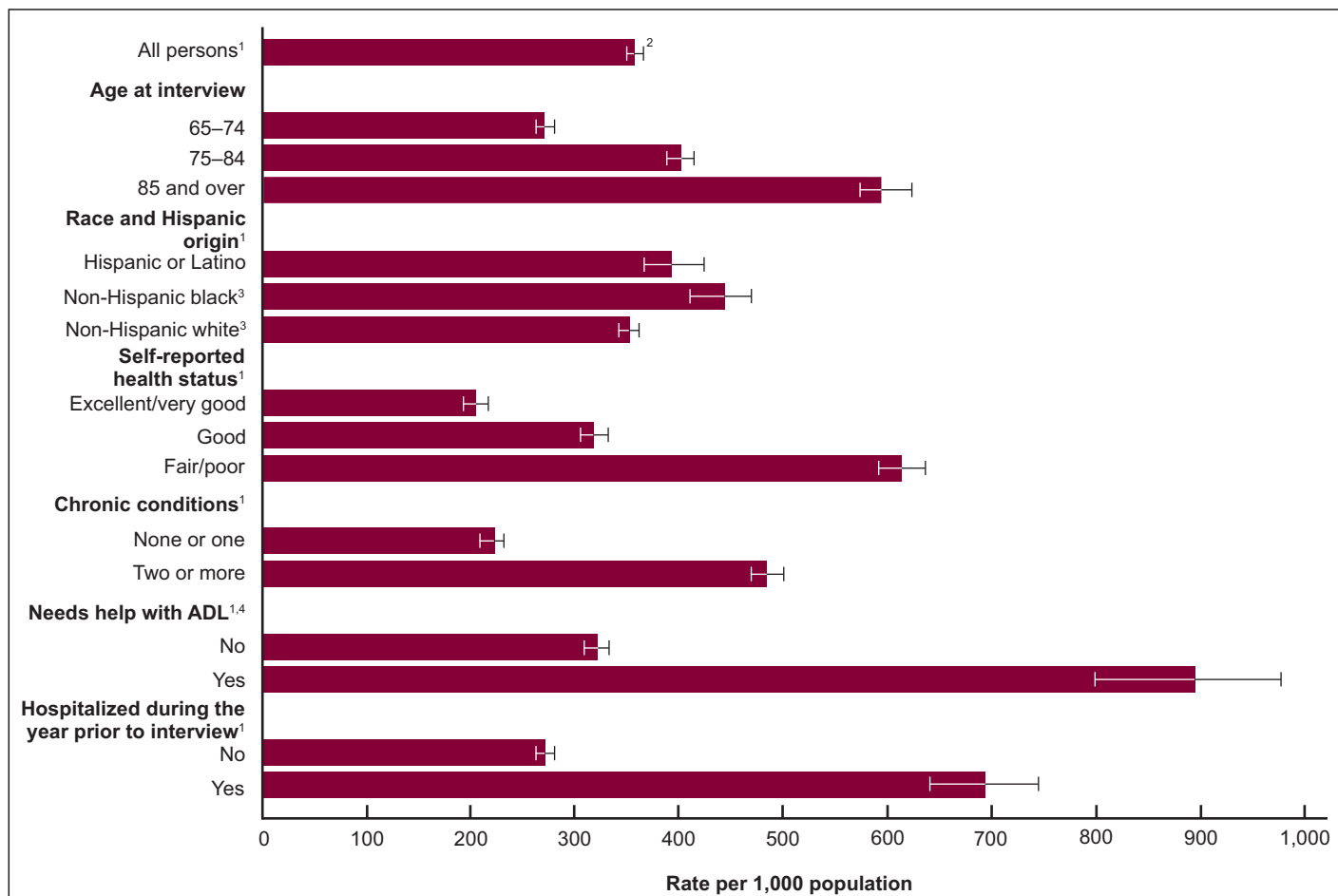
Figure 4. Hospital discharge rate among noninstitutionalized Medicare FFS beneficiaries aged 65 and over during the year following the National Health Interview Survey interview, by selected characteristics: United States, 2000–2006

with complex activity limitation had a discharge rate (562.9 per 1,000) that was 2.4 times the rate of those without complex activity limitation (237.2 per 1,000). Those in fair or poor health were three times as likely (95% CI 2.7, 3.3) to be hospitalized as those in excellent or very good health (599.4 compared with 199.7 per 1,000 population). Among those who reported an overnight hospital stay during the year prior to the NHIS interview, the discharge rate was 677.8 per 1,000 population, 2.6 times (95% CI 2.4, 2.7) as high as the rate among those who did not report an overnight stay (264.4 per 1,000 population).

The discharge rate for those who needed help with ADL was 875.0 per 1,000, 2.8 times (95% CI 2.5, 3.1) the rate among those who did not need such help (314.1 per 1,000 population).

Percentage of persons hospitalized

Among noninstitutionalized FFS Medicare beneficiaries, 21.6% were hospitalized at least once during the year following the NHIS interview (Table 3, Figures 5 and 6). A higher percentage of persons aged 85 and over were hospitalized (34.3%) compared with those aged 65–74 (16.7%), while the percentage of hospitalization among men and women was about the same, 22.1% and 21.2%, respectively. About one-quarter of those with less than a high school education (25.2%) or those with family incomes below 200% of the poverty threshold (24.7%) were hospitalized, compared with about one-fifth of those with at least a high school education (19.9%) or those at or above 200% of the poverty threshold

(19.9%). One-third of those who reported fair or poor health (33.3%) were hospitalized during the year following the NHIS interview, compared with 14.1% of those who reported excellent or very good health. Among those with two or more chronic conditions, 27.3% were hospitalized during the year following the NHIS interview, compared with 15.1% of those with none or one chronic condition. The percentage hospitalized during the year following the NHIS interview was 26.2% among those with basic actions difficulties, 31.3% among those with complex activity limitations, and 43.2% among those who needed help with ADL. Among those who reported an overnight hospital stay in the year prior to the NHIS interview, 36.6% were hospitalized, compared with 17.8% of those who did not report an overnight stay.

Figure 5. Percentage ever hospitalized among noninstitutionalized Medicare FFS beneficiaries aged 65 and over during the year following the National Health Interview Survey interview, by age, sex, education, and readmission status: United States, 2000–2006
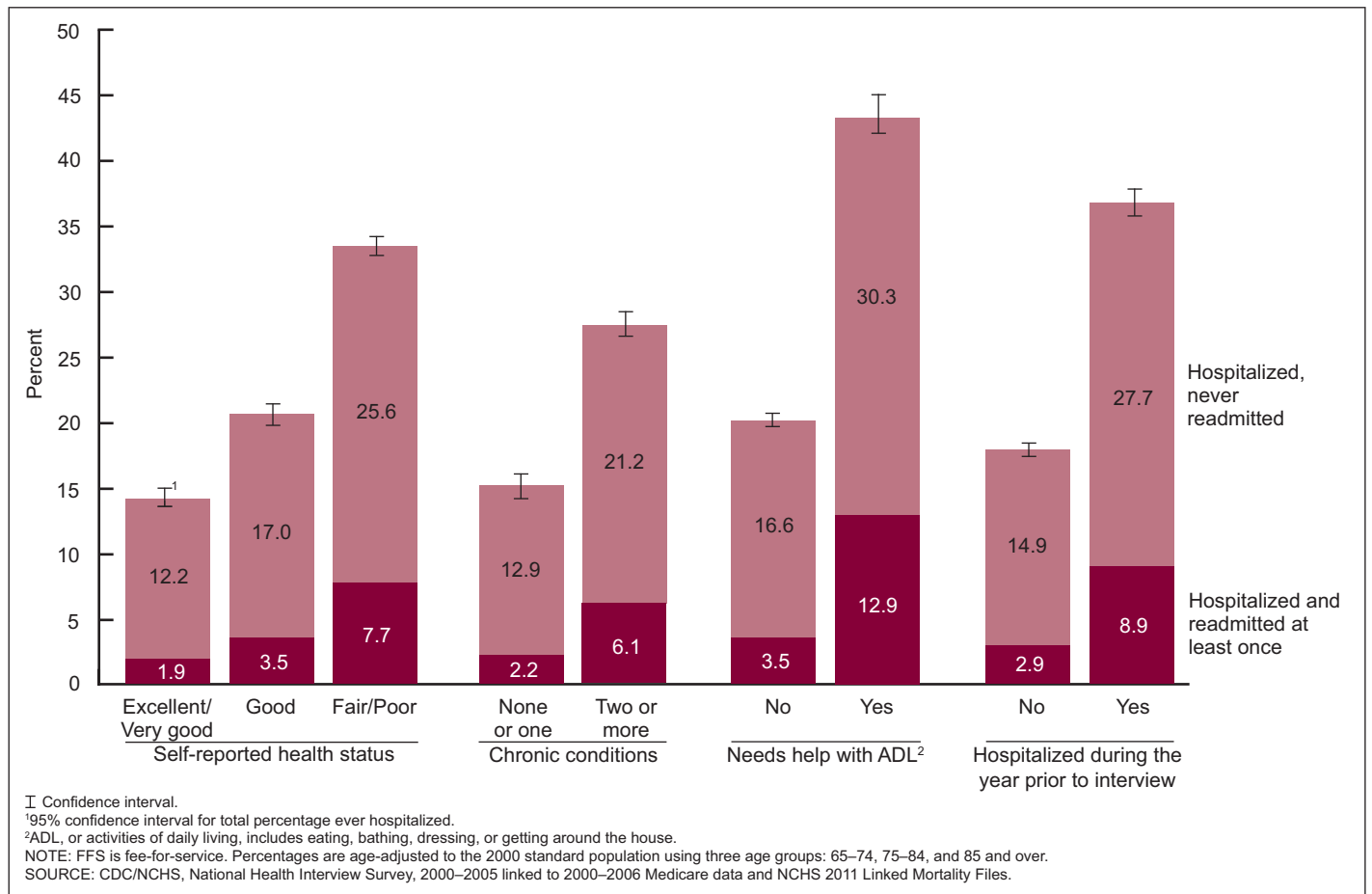
Figure 6. Percentage ever hospitalized among noninstitutionalized Medicare FFS beneficiaries aged 65 and over during the year following the National Health Interview Survey interview, by selected characteristics and readmission status: United States, 2000–2006

Readmission among noninstitutionalized FFS Medicare beneficiaries aged 65 and over

Readmission rates

During 2000–2006, among noninstitutionalized FFS Medicare beneficiaries aged 65 and over, the readmission rate was 17.3 per 100 live discharges (Table 4, Figure 7).

The readmission rate was 20.6 per 100 live discharges among those with less than a high school education, 1.3 times (95% CI 1.2, 1.5) the rate among those with at least a high school education (15.4 per 100 live discharges). The readmission rate was 19.5 per 100 live discharges among those with family income of below 200% of the poverty threshold, 1.3 times (95% CI 1.1, 1.4) the readmission rate of those at or above 200% of the poverty threshold (15.5 per 100 live discharges). Those living with

another person who was not a spouse or partner were readmitted at the rate of 20.9 per 100 live discharges, 1.3 times (95% CI 1.1, 1.5) the rate among those living with a spouse or partner (15.9 per 100 live discharges). Among those with two or more chronic conditions, the readmission rate was 20.5 per 100 live discharges compared with the rate of 12.7 among those with no or one chronic condition. Those in fair or poor health had a readmission rate of 20.7 per 100 live discharges compared with the rate of 12.0 among those in excellent or very good health. The readmission rate for those with complex activity limitations was 20.8 per 100 live discharges compared with the rate of 15.0 per 100 live discharges among those without limitations. Among ever smokers, the readmission rate was 20.0 per 100 live discharges compared with the rate of 15.3 among those who never smoked. Persons who reported an overnight hospital stay in the year prior

to the NHIS interview had a readmission rate of 21.5 per 100 live discharges compared with 14.5 readmissions per 100 live discharges among those who did not. Those who needed help with ADL had a readmission rate of 25.4 per 100 live discharges, 1.6 times (95% CI 1.4, 1.8) the readmission rate of those who did not need help (15.9 per 100 live discharges).

Observed differences in the readmission rates by age, sex, race and Hispanic origin, basic action difficulty, Medicaid enrollment, or participation in private insurance were not statistically significant.

Percentage of persons hospitalized and readmitted at least once

Among noninstitutionalized Medicare FFS beneficiaries aged 65 and over, 4.1% were hospitalized and readmitted within 30 days at least once

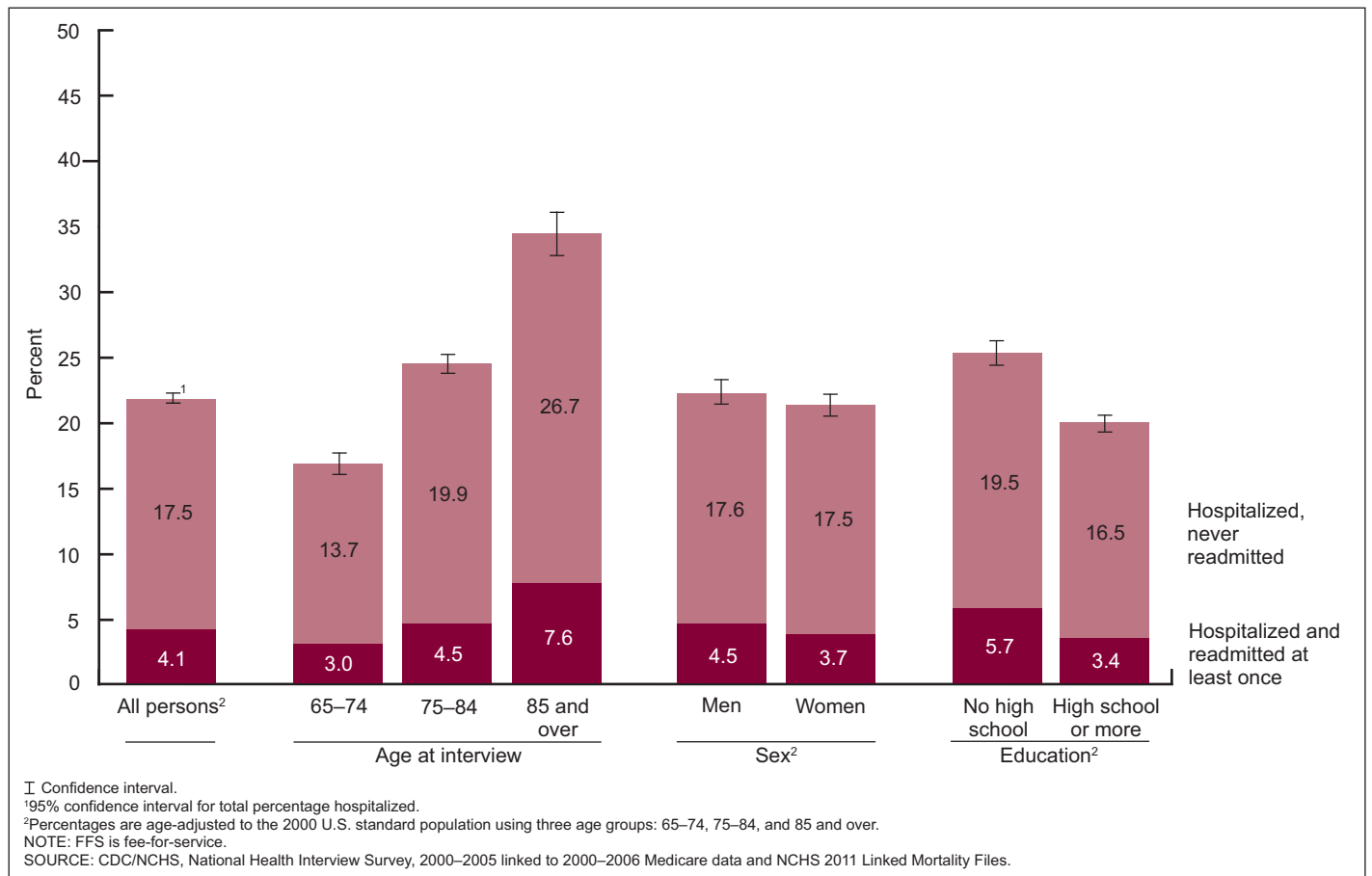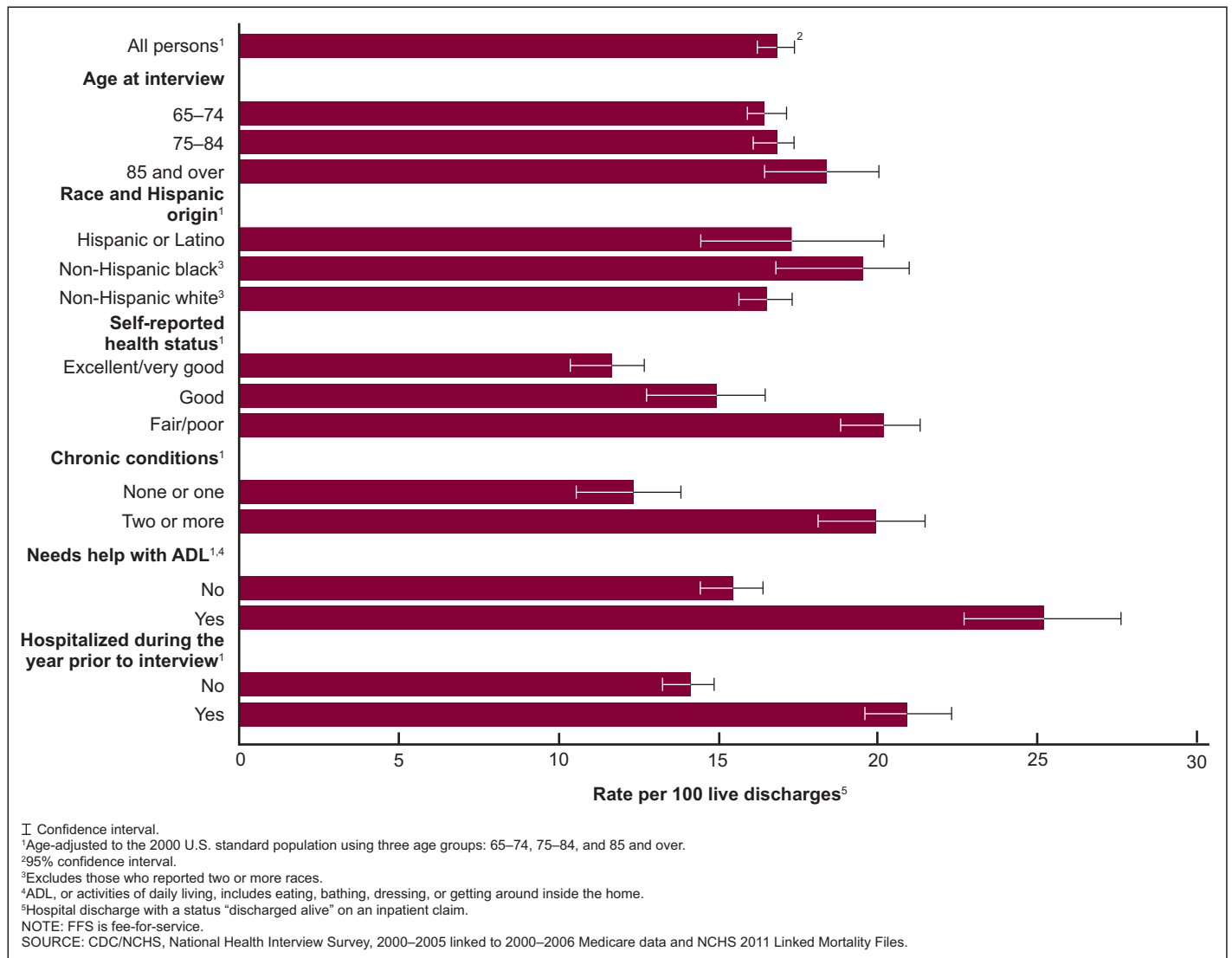**Figure 7. Readmission rate per 100 live discharges among noninstitutionalized Medicare FFS beneficiaries aged 65 and over during the year following the National Health Interview Survey interview, by selected characteristics: United States, 2000–2006**

during the year (Table 3, Figures 5 and 6). The percentage increased with age from 3.0% among those aged 65–74 to 7.6% among those aged 85 and over. Men were 1.2 times as likely (95% CI 1.1, 1.4) to be hospitalized and readmitted as women (4.5% and 3.7%, respectively). Non-Hispanic black persons were 1.4 times as likely (95% CI 1.1, 1.6) to be hospitalized and readmitted (5.4%) as non-Hispanic white persons (4.0%).

Among those with two or more chronic conditions, 6.1% were hospitalized and readmitted, 2.8 times (95% CI 2.2, 3.4) the percentage of those with no or one chronic condition (2.2%). The percentage of readmission was 7.7% among those in fair or poor

health, 4.1 times (95% CI 3.1, 5.0) the percentage of those in excellent and very good health (1.9%). Among those who reported an overnight hospital stay in the year prior to the NHIS interview, 8.9% were hospitalized and readmitted, 3.1 times (95% CI 2.7, 3.4) the percentage among those who did not report an overnight stay (2.9%).

Percentage of persons who were hospitalized and readmitted at least once or died within 30 days after discharge

During the year following the NHIS interview, 4.8% of beneficiaries were hospitalized and readmitted at least once or died within 30 days after discharge. This percentage was 9.4% among

persons aged 85 and over, 2.8 times (95% CI 2.4, 3.2) the percentage among those aged 65–74 (3.4%). Men were hospitalized and readmitted at least once or died within 30 days after discharge, 1.3 times (95% CI 1.1, 1.4) as high as women (5.5% compared with 4.3%), and non-Hispanic black beneficiaries were 1.3 times (95% CI 1.1, 1.6) as high as non-Hispanic white beneficiaries (6.2% compared with 4.7%) to be hospitalized and readmitted or die within 30 days after discharge. This percentage was 6.6% among beneficiaries with less than a high school education, 6.2% among those below 200% of the poverty threshold, and 6.5% among those living with others than spouse or partner.

The percentage of hospitalized and readmitted or deceased within 30 days after discharge was 2.2% among those who reported very good or excellent health, 4.1% among those in good health, and 9.1% among those in fair or poor health. Persons with two or more chronic conditions were 2.3 times as likely (95% CI 2.2, 3.3) to be hospitalized and readmitted or die within 30 days after discharge as those with no or one condition (7.2% compared with 2.6%). This percentage was 6.3% among persons with basic actions difficulties, 8.6% among those with complex activity limitations, and 15.6% among those who needed help with ADL. The latter percentage was 3.8 times (95% CI 3.3, 4.3) the percentage among those who did not need help with ADL (4.1%).

Those who reported an overnight hospital stay in the previous year were 3.1 times as likely (95% CI 2.7, 3.4) to be hospitalized and readmitted or die within 30 days after discharge as those who did not report an overnight stay (10.4% compared with 3.4%).

Discussion

Among noninstitutionalized Medicare FFS beneficiaries aged 65 and over, 21.6% were hospitalized in the year following the NHIS interview, with a discharge rate of 348.4 per 1,000 population. Among live discharges, 17.3% were readmitted within 30 days after discharge. Although it was not possible to obtain directly corresponding discharge and readmission rates published previously, the discharge rate of 348.4 per 1,000 noninstitutionalized population is comparable to the 2006 discharge rate of 3,507.9 discharges per 10,000 civilian population aged 65 and over reported by the National Hospital Discharge Survey (34). The readmission rate of 17.3% is comparable to the 2005 estimate of "almost 18 percent of admissions resulted in readmissions within 30 days of discharge" as reported to Congress by the Medicare Payment Advisory Commission (16) and to the 2007–2012 national average 30-day all-cause readmission rate of 19% (8).

During the year following the NHIS interview, 4.5% of the beneficiaries died. About one-third of the deceased died within 30 days after discharge from the hospital, including 7.1% who died during a readmission stay. The percentage of deceased who died within 30 days of discharge did not differ across demographic and socioeconomic status characteristics, health and functional status, health risk factors, or health insurance.

About one-quarter of the deceased died in the hospital (including those 7.1% who died during a readmission stay), which is consistent with other estimates (3). The observed differences in the percentage of deceased who died in the hospital were not significant by age, sex, race and Hispanic origin, and other categories with the exception of those who had an overnight hospital stay during the year before the NHIS interview. Those deceased who had reported an overnight stay in the year before the NHIS interview were twice as likely to die in the hospital as those who did not report an overnight stay.

This report presents rates of discharge per 1,000 population and readmission per 100 live discharges by patients' characteristics that were self-reported before hospitalization. While there was a difference in discharge rates by most of patients' characteristics except sex, readmission rates did not differ by age, sex, race and Hispanic origin, disability status (e.g., basic actions difficulties at the time of the NHIS interview), or type of the supplemental insurance (Medicaid or private).

This report presents national estimates of the percentage of noninstitutionalized beneficiaries aged 65 and over who were hospitalized at least once and readmitted in the year following the NHIS interview. The differences between percentages of those hospitalized by selected variables reflect the risk factors of being hospitalized and generally are consistent with the differences between discharge rates by these variables. The risk associated with readmission among beneficiaries reflects a combination of risk factors for hospitalization among persons not yet

hospitalized and for readmission among persons at the time of hospital discharge, which may differ from the factors associated with the risk of readmission among live discharges only. An understanding of these risk factors may help community and health management organizations in prevention efforts required for reducing unnecessary hospitalizations and readmissions.

Limitations

Only Medicare FFS participants were included in the analysis, as Medicare claims for HMO participants are not available. Data from NHIS and Medicare are from 2000 to 2006, and readmission patterns may have changed since that time. Although nonresponse adjustments have been made, exclusion of NHIS respondents who are linkage-ineligible may create some residual bias in final estimates.

The calculations of the hospitalization and readmissions measures in the report do not include inpatient hospital stays before the NHIS interview; therefore, a hospitalization in the first few weeks after the NHIS interview may itself be a readmission stay. Finally, the NHIS self-reported data on chronic conditions and disability measures may be subject to reporting bias.

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Table 1. Medicare enrollment among noninstitutionalized Medicare beneficiaries aged 65 during the year following the NHIS interview, by selected characteristics: United States, 2000–2006

Characteristic	Number of persons			Percentage in Medicare FFS[1]			Percentage in Medicare Advantage plan[1]			Percentage switched between FFS and Medicare HMO[1]		
					95% confidence interval			95% confidence interval			95% confidence interval	
	Sample size	Number (in thousands)	Standard error (in thousands)	Percent	Lower bound	Upper bound	Percent	Lower bound	Upper bound	Percent	Lower bound	Upper bound
65 and over[2]	31,355	197,943	2,703	82.5	81.7	83.2	13.9	13.2	14.6	3.7	3.4	3.9
Age in years												
65–74	17,076	105,542	1,523	82.2	81.3	83.1	13.8	13.0	14.7	4.0	3.7	4.3
75–84	11,219	72,649	1,256	82.1	81.2	83.1	14.5	13.6	15.4	3.4	3.0	3.8
85 and over.	3,060	19,752	525	85.1	83.6	86.5	12.0	10.7	13.4	2.9	2.3	3.5
Sex												
Men	14,219	88,524	1,362	82.8	81.9	83.7	13.6	12.8	14.3	3.6	3.3	4.0
Women	17,136	109,419	1,550	82.2	81.3	83.1	14.1	13.4	14.9	3.7	3.4	4.0
Race and ethnicity												
White, non-Hispanic[3]	24,247	161,943	2,432	84.1	83.3	85.0	12.8	12.1	13.5	3.1	2.8	3.3
Black, non-Hispanic[3]	3,147	16,527	625	81.1	79.0	83.1	12.8	11.1	14.5	6.2	5.2	7.1
Hispanic or Latino.	3,177	13,498	547	67.7	64.8	70.6	25.1	22.4	27.7	7.2	6.0	8.4
Education												
High school diploma, GED,[4] or more	20,993	137,396	2,221	82.6	81.7	83.6	14.1	13.2	14.9	3.3	3.0	3.6
No high school diploma or GED[4]. . . .	9,974	58,201	1,015	82.0	81.0	83.0	13.5	12.6	14.3	4.5	4.0	5.0
Income level[5]												
200% or higher	19,079	124,515	2,090	83.2	82.3	84.1	13.6	12.8	14.4	3.2	2.8	3.5
Below 200% poverty level	12,276	73,429	1,304	81.2	80.1	82.2	14.3	13.4	15.2	4.5	4.1	4.9
Living arrangement												
Living with a spouse or partner.	18,005	114,868	1,903	82.2	81.2	83.1	14.3	13.4	15.2	3.5	3.2	3.9
Living alone.	9,279	58,970	1,110	83.8	82.8	84.9	12.7	11.8	13.6	3.5	3.1	3.9
Living with others	4,070	24,100	464	80.5	79.0	81.9	14.8	13.6	16.1	4.7	4.0	5.4
Chronic conditions												
None or one	8,653	93,912	1,636	82.3	81.3	83.3	14.0	13.0	14.9	3.7	3.2	4.2
Two or more	9,518	103,215	1,753	82.7	81.6	83.8	13.7	12.7	14.7	3.6	3.2	4.0
Self-reported health status												
Excellent or very good	11,626	75,600	1,331	81.9	80.9	83.0	14.8	13.8	15.7	3.3	2.9	3.7
Good.	10,787	68,218	1,100	82.1	81.1	83.1	14.5	13.6	15.4	3.4	3.0	3.8
Fair or poor.	8,942	54,126	1,012	83.6	82.5	84.7	11.9	10.9	12.9	4.5	4.0	5.0
Any limitation												
Yes	11,875	127,400	2,106	83.4	82.4	84.3	12.9	12.1	13.8	3.7	3.3	4.1
No	6,365	70,498	1,371	81.0	79.7	82.3	15.5	14.3	16.7	3.5	3.0	4.1
Basic actions difficulty												
Yes	11,373	122,420	2,060	83.2	82.3	84.2	13.1	12.2	13.9	3.7	3.3	4.1
No	6,867	75,479	1,428	81.4	80.1	82.6	15.1	14.0	16.3	3.5	3.0	4.1
Movement difficulty												
Yes	9,731	104,218	1,869	83.4	82.4	84.4	12.8	11.9	13.7	3.8	3.4	4.2
No	8,440	92,919	1,634	81.5	80.3	82.6	15.0	14.0	16.1	3.5	3.0	4.0
Cognitive difficulty												
Yes	1,508	16,282	607	83.8	81.4	86.2	11.3	9.2	13.4	4.9	3.7	6.1
No	16,719	181,522	2,731	82.4	81.5	83.3	14.1	13.3	14.9	3.5	3.2	3.9

See footnotes at end of table.

Table 1. Medicare enrollment among noninstitutionalized Medicare beneficiaries aged 65 during the year following the NHIS interview, by selected characteristics: United States, 2000–2006—Con.

Characteristic	Number of persons			Percentage in Medicare FFS[1]			Percentage in Medicare Advantage plan[1]			Percentage switched between FFS and Medicare HMO[1]		
	Sample size	Number (in thousands)	Standard error (in thousands)	Percent	95% confidence interval		Percent	95% confidence interval		Percent	95% confidence interval	
					Lower bound	Upper bound		Lower bound	Upper bound		Lower bound	Upper bound
Emotional difficulty (K–6)												
Yes	546	5,519	285	82.5	78.8	86.2	9.6	6.7	12.6	[†]7.9	[†]5.3	[†]10.4
No	17,469	189,761	2,867	82.5	81.6	83.4	14.0	13.2	14.8	3.5	3.1	3.8
Seeing or hearing (sensory) difficulty												
Yes	4,943	54,070	1,147	83.4	82.1	84.7	13.1	11.9	14.3	3.5	3.0	4.1
No	13,295	143,809	2,281	82.2	81.2	83.1	14.1	13.3	15.0	3.7	3.3	4.1
Complex activity limitations												
Yes	6,584	68,069	1,394	84.9	83.7	86.1	11.0	10.0	12.1	4.1	3.6	4.6
No	11,656	129,829	2,070	81.3	80.2	82.3	15.3	14.4	16.3	3.4	3.0	3.8
Needs help with ADL[6]												
Yes	2,162	13,189	370	85.7	84.1	87.3	9.1	7.9	10.4	5.2	4.3	6.1
No	29,193	184,754	2,529	82.2	81.4	83.0	14.2	13.5	15.0	3.6	3.3	3.8
Leisure-time physical activity												
Unable.	1,086	11,470	501	83.9	81.0	86.9	11.5	8.8	14.1	[†]4.6	[†]3.2	[†]6.0
Inactive	8,281	85,939	1,721	82.2	81.0	83.3	13.8	12.7	14.8	4.1	3.6	4.6
Some or regular	8,818	99,824	1,834	82.7	81.6	83.8	14.1	13.2	15.1	3.2	2.7	3.6
Smoking												
Ever smoker	9,210	101,669	1,842	82.4	81.3	83.5	14.0	13.1	15.0	3.6	3.2	4.1
Never smoked	8,966	95,491	1,627	82.7	81.6	83.7	13.7	12.7	14.6	3.7	3.2	4.1
Hospitalized during the year prior to interview												
Yes	6,135	38,691	727	85.1	84.0	86.1	10.9	10.0	11.8	4.1	3.5	4.6
No	25,178	158,990	2,203	81.8	81.0	82.7	14.6	13.9	15.4	3.6	3.3	3.8
Medicaid (dual eligible)												
Yes	3,250	17,570	520	89.8	88.4	91.2	6.6	5.5	7.7	3.6	2.9	4.3
No	28,105	180,374	2,549	81.7	80.9	82.6	14.6	13.9	15.3	3.7	3.4	3.9
Private (supplemental) insurance												
Yes	19,004	125,128	2,004	87.1	86.3	88.0	10.3	9.6	11.1	2.5	2.2	2.8
No	12,351	72,815	1,322	74.4	73.1	75.7	20.0	18.8	21.1	5.6	5.1	6.1

[†] Estimate of low reliability (sample size between 30 and 59).
[1] During the year following the interview.
[2] Includes other racial and ethnic groups not shown separately and missing or unknown responses for poverty level, education, and marital status.
[3] Excludes those who reported two or more races.
[4] GED is General Educational Development high school equivalency diploma.
[5] Based on family income and family size.
[6] Activities of daily living include eating, bathing, dressing, or getting around inside the home.

SOURCE: CDC/NCHS, National Health Interview Survey, 2000–2005 linked to 2000–2006 Medicare data and NCHS 2011 Linked Mortality Files.

Table 2. Deaths during the year following the NHIS interview—Number, rates, and hospitalization and readmission status at the time of death among deceased noninstitutionalized Medicare FFS beneficiaries aged 65 and over, by selected characteristics: United States, 2000–2006

	Number of deaths in the year following the NHIS interview			Death rates per 100 persons			Percentage among deceased who died											
							Within 30 days since discharge[1]			In the hospital, but not during a readmission stay			In more than 30 days after last discharge			Never being hospitalized after the NHIS interview		
					95% confidence interval			95% confidence interval			95% confidence interval			95% confidence interval			95% confidence interval	
Characteristic	Sample size	Number (in thousands)	Standard error (in thousands)	Rate	Lower bound	Upper bound	Percent	Lower bound	Upper bound	Percent	Lower bound	Upper bound	Percent	Lower bound	Upper bound	Percent	Lower bound	Upper bound
65 and over, age-adjusted[2,3]	1,100	7,058	264	4.5	4.3	4.7	31.8	29.0	34.7	17.5	15.2	19.7	15.8	13.4	18.1	34.9	31.9	38.0
Age in years																		
65–74	330	2,013	119	2.3	2.1	2.5	32.0	27.1	36.9	†15.4	†11.2	†19.7	†15.2	†10.5	†19.9	37.3	31.5	43.1
75–84	448	2,912	157	4.9	4.5	5.3	33.9	28.9	38.8	16.3	12.9	19.7	15.1	11.4	18.8	34.7	29.9	39.6
85 and over.	322	2,132	135	12.7	11.3	14.1	28.9	23.9	33.9	21.0	16.7	25.4	†17.1	†12.7	†21.6	33.0	28.0	37.9
Sex[2]																		
Men	597	3,747	183	5.6	5.2	6.0	33.8	29.5	38.1	17.7	14.6	20.7	15.6	12.6	18.7	32.9	29.0	36.8
Women	503	3,311	169	3.7	3.3	4.1	29.6	25.4	33.9	17.2	14.0	20.4	15.9	12.2	19.6	37.2	32.3	42.1
Race and ethnicity[2]																		
White, non-Hispanic[4]	861	5,857	247	4.4	4.0	4.8	32.1	29.0	35.2	17.9	15.4	20.3	15.8	13.3	18.4	34.2	30.9	37.5
Black, non-Hispanic[4]	135	721	71	5.8	4.8	6.8	†29.5	†21.4	†37.6	*	*	*	*	*	*	†35.5	†26.5	†44.6
Hispanic or Latino.	90	383	54	4.6	3.4	5.8	†35.0	†24.2	†45.8	*	*	*	*	*	*	†36.7	†25.5	†48.0
Education[2]																		
High school diploma, GED[5], or more	612	4,051	189	4.0	3.6	4.4	30.0	26.3	33.7	17.4	14.4	20.4	14.4	11.5	17.2	38.2	34.3	42.2
No high school diploma or GED[5]. . . .	448	2,774	158	5.5	4.9	6.1	35.1	30.3	39.8	17.5	14.0	21.0	17.1	12.9	21.3	30.3	25.6	35.0
Income level[2,6]																		
200% or higher	580	3,832	198	4.2	3.8	4.6	29.6	25.7	33.6	18.2	14.8	21.5	16.5	13.2	19.7	35.8	31.7	39.9
Below 200% poverty level	520	3,226	165	5.2	4.8	5.6	34.5	30.0	38.9	16.7	13.6	19.7	14.9	11.4	18.4	33.9	29.3	38.6
Living arrangement[2]																		
Living with a spouse or partner.	536	3,434	168	4.7	4.3	5.1	32.9	28.9	36.9	17.2	14.1	20.4	16.0	12.6	19.3	33.9	29.8	38.1
Living alone.	324	2,102	127	3.8	3.4	4.2	30.9	26.0	35.8	†17.4	†13.1	†21.6	†14.0	†9.6	†18.4	37.8	32.3	43.3
Living with others	240	1,522	102	6.9	5.9	7.9	30.7	24.0	37.5	†18.2	†13.0	†23.4	†17.7	†11.9	†23.5	33.4	26.7	40.0
Chronic conditions[2]																		
None or one	159	1,652	145	2.4	2.0	2.8	29.1	21.0	37.2	*	*	*	*	*	*	44.4	35.0	53.7
Two or more	439	5,147	324	6.1	5.3	6.9	34.9	30.0	39.9	20.3	15.7	24.9	15.1	10.6	19.6	29.7	24.7	34.6
Self-reported health status[2]																		
Excellent or very good	147	959	82	1.9	1.5	2.3	†31.3	†23.6	†39.1	*	*	*	*	*	*	41.5	32.9	50.0
Good.	267	1,749	125	3.2	2.8	3.6	29.4	23.4	35.4	†16.9	†12.1	†21.7	†14.1	†9.7	†18.5	39.6	33.7	45.6
Fair or poor.	686	4,350	192	9.3	8.5	10.1	32.9	29.1	36.7	18.1	15.1	21.1	17.3	14.2	20.4	31.6	28.1	35.2

See footnotes at end of table.

Table 2. Deaths during the year following the NHIS interview—Number, rates, and hospitalization and readmission status at the time of death among deceased noninstitutionalized Medicare FFS beneficiaries aged 65 and over, by selected characteristics: United States, 2000–2006—Con.

Characteristic	Number of deaths in the year following the NHIS interview			Death rates per 100 persons			Percentage among deceased who died											
							Within 30 days since discharge[1]			In the hospital, but not during a readmission stay			In more than 30 days after last discharge			Never being hospitalized after the NHIS interview		
					95% confidence interval			95% confidence interval			95% confidence interval			95% confidence interval			95% confidence interval
	Sample size	Number (in thousands)	Standard error (in thousands)	Rate	Lower bound	Upper bound	Percent	Lower bound	Upper bound	Percent	Lower bound	Upper bound	Percent	Lower bound	Upper bound	Percent	Lower bound	Upper bound
Any limitation[2]																		
Yes	528	6,009	344	5.4	4.8	6.0	33.9	29.3	38.4	19.0	14.8	23.1	15.1	11.1	19.1	32.1	27.3	36.9
No	70	789	115	1.8	1.5	2.3	*	*	*	*	*	*	*	*	*	†41.8	†28.3	†55.3
Basic actions difficulty[2]																		
Yes	507	5,777	337	5.4	4.8	6.0	34.6	29.9	39.2	19.3	15.1	23.6	15.0	10.9	19.1	31.1	26.3	35.9
No	91	1,022	130	2.1	1.5	2.7	*	*	*	*	*	*	*	*	*	45.2	32.8	57.5
Movement difficulty[2]																		
Yes	468	5,312	317	5.8	5.2	6.4	34.1	29.0	39.2	19.5	15.1	23.8	15.6	11.2	19.9	30.9	26.0	35.8
No	118	1,329	150	2.1	1.7	2.5	†31.3	†22.7	†39.9	*	*	*	*	*	*	†42.0	†32.0	†52.1
Cognitive difficulty[2]																		
Yes	141	1,764	175	10.4	8.4	12.4	†32.9	†23.6	†42.1	*	*	*	*	*	*	38.7	29.6	47.7
No	456	5,026	308	3.6	3.2	4.0	33.8	28.7	38.9	18.3	13.9	22.7	16.7	11.9	21.5	31.2	25.9	36.5
Emotional difficulty (K–6)[2]																		
Yes	47	†527	†90.1	†11.4	†8.1	†14.7	*	*	*	*	*	*	*	*	*	*	*	*
No	523	5,899	337	3.9	3.5	4.3	32.9	28.6	37.3	17.9	14.0	21.9	16.1	12.0	20.3	33.0	28.3	37.8
Seeing or hearing (sensory) difficulty[2]																		
Yes	239	2,788	249	5.7	4.7	6.7	33.5	26.1	40.8	†22.0	†15.1	†28.8	†15.6	†8.3	†23.0	29.0	22.2	35.8
No	358	3,998	268	3.8	3.4	4.2	33.7	28.4	38.9	†15.2	†10.9	†19.5	†14.8	†10.6	†19.1	36.3	30.4	42.2
Complex activity limitations[2]																		
Yes	420	4,920	310	7.9	6.9	8.9	33.6	28.4	38.7	19.2	14.6	23.8	15.9	11.4	20.4	31.4	26.2	36.5
No	178	1,879	173	2.1	1.7	2.5	33.4	26.0	40.8	*	*	*	*	*	*	38.2	30.2	46.1
Needs help with ADL[2,7]																		
Yes	355	2,246	129	17.9	15.7	20.1	29.2	23.7	34.6	19.4	15.4	23.3	16.2	12.4	20.1	35.2	30.1	40.4
No	745	4,812	210	3.4	3.2	3.6	33.1	29.5	36.7	16.6	13.7	19.5	15.5	12.5	18.5	34.8	30.9	38.7
Leisure-time physical activity[2]																		
Unable	104	1,045	119	10.3	8.1	12.5	†39.2	†29.0	†49.4	*	*	*	*	*	*	†27.9	†17.8	†38.1
Inactive	366	4,161	289	5.7	4.9	6.5	33.0	27.5	38.5	20.4	15.4	25.4	†14.0	†8.7	†19.2	32.7	26.7	38.7
Some or regular	127	1,586	173	2.2	1.8	2.6	†30.9	†21.7	†40.2	*	*	*	*	*	*	†38.3	†28.1	†48.6

See footnotes at end of table.

Table 2. Deaths during the year following the NHIS interview—Number, rates, and hospitalization and readmission status at the time of death among deceased noninstitutionalized Medicare FFS beneficiaries aged 65 and over, by selected characteristics: United States, 2000–2006—Con.

							Percentage among deceased who died														
	Number of deaths in the year following the NHIS interview			Death rates per 100 persons			Within 30 days since discharge[1]			In the hospital, but not during a readmission stay			In more than 30 days after last discharge			Never being hospitalized after the NHIS interview		
					95% confidence interval			95% confidence interval			95% confidence interval			95% confidence interval			95% confidence interval	
Characteristic	Sample size	Number (in thousands)	Standard error (in thousands)	Rate	Lower bound	Upper bound	Percent	Lower bound	Upper bound	Percent	Lower bound	Upper bound	Percent	Lower bound	Upper bound	Percent	Lower bound	Upper bound
Smoking[2]																		
Ever smoker	346	4,045	257	5.3	4.7	5.9	33.3	27.6	38.9	19.6	14.3	25.0	†15.0	†9.3	†20.6	32.2	27.0	37.4
Never smoked	247	2,650	221	3.2	2.6	3.8	34.6	27.7	41.5	†16.1	†10.9	†21.3	†15.4	†10.1	†20.6	34.0	26.9	41.1
Hospitalized during the year prior to interview[2]																		
Yes	507	3,278	154	9.6	8.8	10.4	33.9	29.5	38.2	22.3	18.5	26.1	17.8	14.3	21.4	26.0	21.9	30.0
No	591	3,765	182	3.1	2.9	3.3	29.8	25.9	33.7	13.3	10.6	16.0	14.0	11.0	16.9	42.9	38.6	47.2
Medicaid (dual eligible)[2]																		
Yes	166	940	76	6.1	5.1	7.1	37.0	28.5	45.5	†18.0	†11.5	†24.4	*	*	*	†35.8	†27.5	†43.0
No	934	6,119	255	4.3	3.9	4.7	31.0	28.1	34.0	17.4	14.9	19.9	16.7	14.1	19.3	34.9	31.6	38.2
Private (supplemental) insurance[2]																		
Yes	638	4,251	207	4.1	3.7	4.5	32.1	28.3	35.8	18.3	15.3	21.2	16.5	13.5	19.6	33.2	29.4	37.0
No	462	2,807	148	5.3	4.7	5.9	31.5	26.9	36.1	16.3	12.6	19.9	14.6	11.0	18.2	37.6	32.7	42.5

† Estimate of low reliability (sample size between 30 and 59).

* Figure does not meet standards of reliability or precision.

[1]Includes those who died during readmission hospital stay.

[2]Rates and percentages are age-adjusted to the 2000 standard population using age groups 65–74, 75–84, and 85 and over.

[3]Includes other racial and ethnic groups not shown separately and missing or unknown responses for poverty level, education, and marital status.

[4]Excludes those who reported two or more races.

[5]GED is General Educational Development high school equivalency diploma.

[6]Based on family income and family size.

[7]Activities of daily living include eating, bathing, dressing, or getting around inside the home.

NOTE: FFS is fee-for-service.

SOURCE: CDC/NCHS, National Health Interview Survey, 2000–2005 linked to 2000–2006 Medicare data and NCHS 2011 Linked Mortality Files.

Table 3. Percentage of noninstitutionalized Medicare FFS beneficiaries aged 65 and over who were hospitalized, readmitted, or died within 30 days after discharge during the year following the NHIS interview, by selected characteristics: United States, 2000–2006

Characteristic	Percentage hospitalized at least once during the year following the NHIS interview			Percentage died within 30 days after discharge[1]			Percentage readmitted within 30 days after discharge at least once			Percentage readmitted at least once or died within 30 days after discharge[1]		
		95% confidence interval			95% confidence interval			95% confidence interval			95% confidence interval	
	Percent	Lower bound	Upper bound	Percent	Lower bound	Upper bound	Percent	Lower bound	Upper bound	Percent	Lower bound	Upper bound
65 and over, age-adjusted[2,3]	21.6	21.0	22.2	1.5	1.3	1.7	4.1	3.9	4.3	4.8	4.6	5.0
Age in years												
65–74	16.7	16.0	17.4	0.8	0.6	1.0	3.0	2.8	3.2	3.4	3.0	3.7
75–84	24.4	23.5	25.3	1.8	1.5	2.1	4.5	4.0	4.9	5.4	4.9	5.9
85 and over.	34.3	32.2	36.3	3.9	3.2	4.6	7.6	6.4	8.7	9.4	8.1	10.6
Sex[2]												
Men	22.1	21.1	23.1	2.0	1.8	2.2	4.5	4.1	4.9	5.5	5.1	5.9
Women	21.2	20.4	22.0	1.2	1.0	1.4	3.7	3.3	4.1	4.3	3.9	4.7
Race and ethnicity[2]												
White, non-Hispanic[4]	21.5	20.9	22.1	1.5	1.3	1.7	4.0	3.8	4.2	4.7	4.3	5.1
Black, non-Hispanic[4]	24.7	22.5	26.9	†1.9	†1.3	†2.5	5.4	4.4	6.4	6.2	5.2	7.2
Hispanic or Latino	22.3	20.1	24.5	†1.8	†1.0	†2.6	4.3	3.3	5.3	5.2	4.2	6.2
Education[2]												
High school diploma, GED[5], or more	19.9	19.3	20.5	1.3	1.1	1.5	3.4	3.2	3.6	4.0	3.6	4.4
No high school diploma or GED[5]. . . .	25.2	24.0	26.4	2.0	1.6	2.4	5.7	5.1	6.3	6.6	6.0	7.2
Income level[2,6]												
200% or higher	19.9	19.1	20.7	1.3	1.1	1.5	3.4	3.0	3.8	4.1	3.7	4.5
Below 200% poverty level	24.7	23.7	25.7	1.9	1.5	2.3	5.4	4.8	6.0	6.2	5.6	6.8
Living arrangement[2]												
Living with a spouse or partner.	21.1	20.3	21.9	1.6	1.4	1.8	3.7	3.3	4.1	4.4	4.0	4.8
Living alone.	21.9	20.9	22.9	1.4	1.2	1.6	4.5	3.9	5.1	5.1	4.5	5.7
Living with others	24.5	22.9	26.1	2.2	1.6	2.8	5.4	4.6	6.2	6.5	5.5	7.5
Chronic conditions[2]												
None or one	15.1	14.1	16.1	†0.7	†0.5	†0.9	2.2	1.8	2.6	2.6	2.2	3.0
Two or more	27.3	26.1	28.5	2.3	1.9	2.7	6.1	5.5	6.7	7.2	6.4	8.0
Self-reported health status[2]												
Excellent or very good	14.1	13.3	14.9	†0.7	†0.5	†0.9	1.9	1.5	2.3	2.2	1.8	2.6
Good.	20.5	19.5	21.5	1.1	0.9	1.3	3.5	3.1	3.9	4.1	3.7	4.5
Fair or poor.	33.3	32.1	34.5	3.2	2.8	3.6	7.7	6.9	8.5	9.1	8.3	9.9
Any limitation[2]												
Yes	25.9	24.9	26.9	2.0	1.6	2.4	5.2	4.6	5.8	6.3	5.7	6.9
No	13.4	12.2	14.6	0.7	0.3	1.1	2.5	1.9	3.1	2.8	2.2	3.4
Basic actions difficulty[2]												
Yes	26.2	25.2	27.2	2.0	1.6	2.4	5.3	4.7	5.9	6.3	5.7	6.9
No	13.6	12.4	14.8	0.7	0.5	0.9	2.7	2.1	3.3	2.9	2.3	3.5
Movement difficulty[2]												
Yes	27.9	26.7	29.1	2.2	1.8	2.6	5.6	5.0	6.2	6.7	6.1	7.3
No	13.8	12.8	14.8	0.8	0.6	1.0	2.5	2.1	2.9	2.9	2.5	3.3

See footnotes at end of table.

Table 3. Percentage of noninstitutionalized Medicare FFS beneficiaries aged 65 and over who were hospitalized, readmitted, or died within 30 days after discharge during the year following the NHIS interview, by selected characteristics: United States, 2000–2006—Con.

Characteristic	Percentage hospitalized at least once during the year following the NHIS interview			Percentage died within 30 days after discharge[1]			Percentage readmitted within 30 days after discharge at least once			Percentage readmitted at least once or died within 30 days after discharge[1]		
		95% confidence interval			95% confidence interval			95% confidence interval			95% confidence interval	
	Percent	Lower bound	Upper bound	Percent	Lower bound	Upper bound	Percent	Lower bound	Upper bound	Percent	Lower bound	Upper bound
Cognitive difficulty[2]												
Yes	29.6	26.5	32.7	3.7	2.3	5.1	6.6	4.6	8.6	8.4	6.4	10.4
No	20.7	19.9	21.5	1.3	1.1	1.5	4.0	3.6	4.4	4.7	4.3	5.1
Emotional difficulty (K–6)[2]												
Yes	32.8	27.3	38.3	*	*	*	†9.3	†6.4	†12.2	†12.2	†8.5	†15.9
No	20.8	20.0	21.6	1.4	1.2	1.6	4.0	3.6	4.4	4.7	4.3	5.1
Seeing or hearing (sensory) difficulty[2]												
Yes	26.2	24.6	27.8	2.1	1.5	2.7	5.7	4.7	6.7	6.7	5.7	7.7
No	19.9	19.1	20.7	1.3	1.1	1.5	3.8	3.4	4.2	4.4	4.0	4.8
Complex activity limitations[2]												
Yes	31.3	29.7	32.9	2.9	2.3	3.5	7.2	6.4	8.0	8.6	7.6	9.6
No	16.1	15.3	16.9	0.8	0.6	1.0	2.7	2.3	3.1	3.1	2.7	3.5
Needs help with ADL[2,7]												
Yes	43.2	40.5	45.9	6.0	4.6	7.4	12.9	11.1	14.7	15.6	13.6	17.6
No	20.1	19.5	20.7	1.2	1.0	1.4	3.5	3.3	3.7	4.1	3.9	4.3
Leisure-time physical activity[2]												
Unable	38.6	34.3	42.9	†4.6	†3.2	†6.0	9.8	7.4	12.2	11.6	9.2	14.0
Inactive	24.5	23.3	25.7	2.0	1.6	2.4	5.1	4.5	5.7	6.0	5.2	6.8
Some or regular	16.6	15.6	17.6	†0.7	†0.5	†0.9	2.8	2.4	3.2	3.2	2.6	3.8
Smoking[2]												
Ever smoker	23.5	22.3	24.7	1.9	1.5	2.3	5.1	4.5	5.7	6.0	5.4	6.6
Never smoked	19.2	18.2	20.2	1.2	0.8	1.6	3.4	2.8	4.0	4.0	3.4	4.6
Hospitalized during the year prior to interview[2]												
Yes	36.6	35.0	38.2	3.4	2.8	4.0	8.9	8.1	9.7	10.4	9.4	11.4
No	17.8	17.2	18.4	1.0	0.8	1.2	2.9	2.7	3.1	3.4	3.2	3.6
Medicaid (dual eligible)[2]												
Yes	27.5	25.7	29.3	2.4	1.8	3.0	6.4	5.4	7.4	7.6	6.4	8.8
No	21.0	20.4	21.6	1.5	1.3	1.7	3.8	3.6	4.0	4.5	4.3	4.7
Private (supplemental) insurance[2]												
Yes	21.2	20.6	21.8	1.4	1.2	1.6	3.8	3.4	4.2	4.5	4.1	4.9
No	22.4	21.4	23.4	1.8	1.4	2.2	4.6	4.2	5.0	5.4	4.8	6.0

† Estimate of low reliability (sample size between 30 and 59).
* Figure does not meet standards of reliability or precision.
[1]Includes those who died during readmission hospital stay.
[2]Percentages are age-adjusted to the 2000 standard population using age groups 65–74, 75–84, and 85 and over.
[3]Includes other racial and ethnic groups not shown separately and missing or unknown responses for poverty level, education, and marital status.
[4]Excludes those who reported two or more races.
[5]GED is General Educational Development high school equivalency diploma.
[6]Based on family income and family size.
[7]Activities of daily living include eating, bathing, dressing, or getting around inside the home.

SOURCE: CDC/NCHS, National Health Interview Survey, 2000–2005 linked to 2000–2006 Medicare data and NCHS 2011 Linked Mortality Files.

Table 4. Hospital discharge and readmission rates among noninstitutionalized Medicare FFS beneficiaries aged 65 and over during the year after the NHIS interview, by selected characteristics: United States 2000–2006

Characteristic	Number of discharges during the year following the NHIS interview			Discharge rates per 1,000 persons			Live discharge[1] rates per 1,000 persons			Number of readmissions			Readmission rate per 100 live discharges[1]		
					95% confidence interval			95% confidence interval						95% confidence interval	
	Sample size	Number (in thousands)	Standard error (in thousands)	Rate	Lower bound	Upper bound	Rate	Lower bound	Upper bound	Sample size	Number (in thousands)	Standard error (in thousands)	Rate	Lower bound	Upper bound
65 and over, age-adjusted[2,3]	8,828	56,069	1,270	348.4	337.2	359.6	336.9	326.0	347.8	1,491	9,447	379	17.3	16.4	18.2
Age in years															
65–74	3,737	22,905	689	264.0	251.0	277.1	258.8	246.0	271.6	626	3,800	216	16.9	15.6	18.3
75–84	3,610	23,416	700	392.5	374.9	410.1	380.5	363.3	397.7	603	3,919	247	17.3	15.8	18.8
85 and over.	1,481	9,748	471	580.1	536.0	624.1	543.2	500.3	586.1	262	1,729	155	18.9	16.5	21.3
Sex[2]															
Men	4,020	25,324	817	358.5	340.3	376.6	343.6	326.1	361.0	698	4,390	253	17.9	16.6	19.2
Women	4,808	30,744	839	341.1	326.1	356.1	332.0	317.2	346.7	793	5,058	290	16.8	15.4	18.2
Race and ethnicity[2]															
White, non-Hispanic[4]	6,863	46,504	1,156	343.6	331.7	355.6	332.2	320.5	343.9	1,124	7,709	344	17.0	15.9	18.0
Black, non-Hispanic[4]	1,092	5,622	347	433.0	390.0	476.0	416.7	375.1	458.3	216	1,084	112	20.1	17.1	23.0
Hispanic or Latino.	771	3,199	266	383.3	335.9	430.7	374.3	328.1	420.5	138	565	88	17.8	13.9	21.7
Education[2]															
High school diploma, GED[5],															
or more	5,101	33,579	925	307.3	295.2	319.5	296.8	285.0	308.7	773	5,046	252	15.4	14.4	16.5
No high school diploma or GED[5]. . . .	3,582	21,574	775	440.8	416.0	465.6	427.1	402.7	451.4	702	4,305	288	20.6	18.8	22.4
Income level[2,6]															
200% or higher	4,619	30,333	891	307.0	294.0	320.1	296.6	283.9	309.2	712	4,619	256	15.5	14.3	16.7
Below 200% poverty level	4,209	25,736	838	425.5	403.1	447.8	411.8	390.1	433.6	779	4,829	303	19.5	17.8	21.1
Living arrangement[2]															
Living with a spouse or partner.	4,417	28,321	821	330.5	314.9	346.1	317.6	302.6	332.5	691	4,356	234	15.9	14.7	17.1
Living alone.	2,939	18,899	716	365.1	342.2	387.9	356.4	333.9	378.9	520	3,380	256	18.4	16.4	20.4
Living with others	1,472	8,848	408	428.8	391.0	466.5	410.9	374.2	447.5	280	1,712	164	20.9	17.6	24.2
Chronic conditions[2]															
None or one	1,528	15,961	693	217.0	200.7	233.3	212.8	196.7	229.0	202	2,071	213	12.7	10.6	14.8
Two or more	3,703	40,367	1,331	472.8	446.7	498.9	455.4	429.9	480.9	699	7,989	537	20.5	18.6	22.4
Self-reported health status[2]															
Excellent or very good	1,734	11,396	460	199.7	185.8	213.5	194.3	180.7	207.9	210	1,362	126	12.0	10.4	13.6
Good.	2,668	17,252	578	310.2	293.3	327.1	303.0	286.1	319.9	405	2,615	177	15.4	13.8	16.9
Fair or poor.	4,426	27,421	858	599.4	570.5	628.3	575.1	547.0	603.1	876	5,471	325	20.7	19.2	22.3

See footnotes at end of table.

Table 4. Hospital discharge and readmission rates among noninstitutionalized Medicare FFS beneficiaries aged 65 and over during the year after the NHIS interview, by selected characteristics: United States 2000–2006—Con.

Characteristic	Number of discharges during the year following the NHIS interview			Discharge rates per 1,000 persons			Live discharge[1] rates per 1,000 persons			Number of readmissions			Readmission rate per 100 live discharges[1]		
	Sample size	Number (in thousands)	Standard error (in thousands)	Rate	Lower bound	Upper bound	Rate	Lower bound	Upper bound	Sample size	Number (in thousands)	Standard error (in thousands)	Rate	Lower bound	Upper bound
Any limitation[2]															
Yes	6,834	46,555	1,471	432.9	410.6	455.2	418.2	396.6	439.8	1,201	8,541	548	18.9	17.2	20.6
No	1,994	9,870	559	203.6	180.5	226.7	200.0	177.2	222.7	290	1,541	194	15.8	13.0	18.6
Basic actions difficulty[2]															
Yes	5,801	45,362	1,469	439.2	415.8	462.5	424.3	401.7	446.9	1,024	8,297	545	18.8	17.1	20.5
No	3,027	11,063	583	206.1	184.9	227.3	201.8	180.9	222.7	467	1,785	198	16.4	13.8	19.0
Movement difficulty[2]															
Yes	5,078	41,781	1,431	473.5	446.7	500.2	457.3	431.4	483.3	894	7,730	539	19.0	17.2	20.8
No	3,685	14,004	604	202.1	185.5	218.7	198.0	181.7	214.2	577	2,096	188	15.3	13.1	17.4
Cognitive difficulty[2]															
Yes	1,344	7,827	549	540.6	467.2	613.9	512.8	442.5	583.1	265	1,449	207	19.2	14.9	23.4
No	7,477	48,551	1,434	333.4	317.0	349.8	323.9	307.9	340.0	1,225	8,621	526	18.2	16.7	19.7
Emotional difficulty (K–6)[2]															
Yes	309	3,124	357	692.2	554.4	830.0	660.0	524.3	795.8	56	†612	†122	†20.5	†15.2	†25.8
No	4,777	51,420	1,521	334.0	318.1	350.0	323.9	308.2	339.6	810	8,957	531	17.8	16.4	19.2
Seeing or hearing (sensory) difficulty[2]															
Yes	1,922	20,943	967	454.8	416.8	492.9	437.0	400.3	473.8	352	4,125	402	20.7	17.9	23.6
No	3,315	35,457	1,188	316.2	297.8	334.6	307.7	289.7	325.7	550	5,957	416	17.1	15.5	18.7
Complex activity limitations[2]															
Yes	4,969	32,992	1,246	562.9	526.1	599.8	540.2	504.4	575.9	920	6,590	514	20.8	18.6	23.0
No	3,859	23,433	842	237.2	222.6	251.7	233.2	218.8	247.5	571	3,492	294	15.0	13.1	16.8
Needs help with ADL[2,7]															
Yes	1,616	9,666	454	875.0	797.5	952.4	828.3	752.1	904.4	377	2,227	178	25.4	22.9	27.9
No	7,212	46,403	1,157	314.1	303.0	325.2	305.6	294.7	316.4	1,114	7,221	330	15.9	14.9	16.8
Leisure-time physical activity[2]															
Unable	676	7,592	659	781.2	670.1	892.3	749.2	645.0	853.3	140	1,735	303	22.7	18.1	27.2
Inactive	2,813	29,571	1,124	411.7	385.0	438.4	396.1	370.0	422.2	501	5,384	394	19.0	17.0	21.1
Some or regular	1,738	19,136	835	243.1	225.3	260.8	238.8	221.6	256.0	258	2,935	287	15.5	13.4	17.7

See footnotes at end of table.

Table 4. Hospital discharge and readmission rates among noninstitutionalized Medicare FFS beneficiaries aged 65 and over during the year after the NHIS interview, by selected characteristics: United States 2000–2006—Con.

| Characteristic | Number of discharges during the year following the NHIS interview | | | Discharge rates per 1,000 persons | | | Live discharge[1] rates per 1,000 persons | | | Number of readmissions | | | Readmission rate per 100 live discharges[1] | | |
	Sample size	Number (in thousands)	Standard error (in thousands)	Rate	95% confidence interval Lower bound	Upper bound	Rate	95% confidence interval Lower bound	Upper bound	Sample size	Number (in thousands)	Standard error (in thousands)	Rate	95% confidence interval Lower bound	Upper bound
Smoking[2]															
Ever smoker	2,937	32,338	1,152	402.5	377.6	427.4	387.1	362.6	411.6	551	6,232	447	20.0	18.1	21.9
Never smoked	2,267	23,730	1,041	294.0	272.5	315.6	286.2	265.1	307.4	346	3,808	378	15.3	13.2	17.4
Hospitalized during the year prior to interview[2]															
Yes	3,598	22,603	727	677.8	641.7	713.8	648.5	613.5	683.4	740	4,654	275	21.5	19.8	23.2
No	5,218	33,395	822	264.4	254.8	273.9	257.8	248.5	267.1	748	4,774	227	14.5	13.5	15.5
Medicaid (dual eligible)[2]															
Yes	1,442	7,936	421	509.4	465.1	553.6	494.4	450.7	538.2	273	1,498	173	19.2	16.1	22.2
No	7,386	48,133	1,159	331.1	320.0	342.3	320.0	309.2	330.8	1,218	7,949	336	17.0	16.0	17.9
Private (supplemental) insurance[2]															
Yes	5,401	35,668	976	331.9	319.2	344.7	320.9	308.4	333.5	869	5,696	288	16.3	15.2	17.5
No	3,427	20,401	707	381.0	360.1	402.0	368.5	348.1	388.8	622	3,752	251	18.9	17.1	20.6

[†] Estimate of low reliability (sample size between 30 and 59).
[1] Hospital discharge with a status "discharged alive" on an inpatient claim.
[2] Rates are age-adjusted to the 2000 standard population using age groups 65–74, 75–84, and 85 and over.
[3] Includes other racial and ethnic groups not shown separately and missing or unknown responses for poverty level, education, and marital status.
[4] Excludes those who reported two or more races.
[5] GED is General Educational Development high school equivalency diploma.
[6] Based on family income and family size.
[7] Activities of daily living include eating, bathing, dressing, or getting around inside the home.

NOTE: FFS is fee-for-service.

SOURCE: CDC/NCHS, National Health Interview Survey, 2000–2005 linked to 2000–2006 Medicare data and NCHS 2011 Linked Mortality Files.

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