



Home Health Chartbook: Prepared for the Alliance for Home Health Quality and Innovation

November 2014
avalere.com

Table of Contents

2014 Chartbook

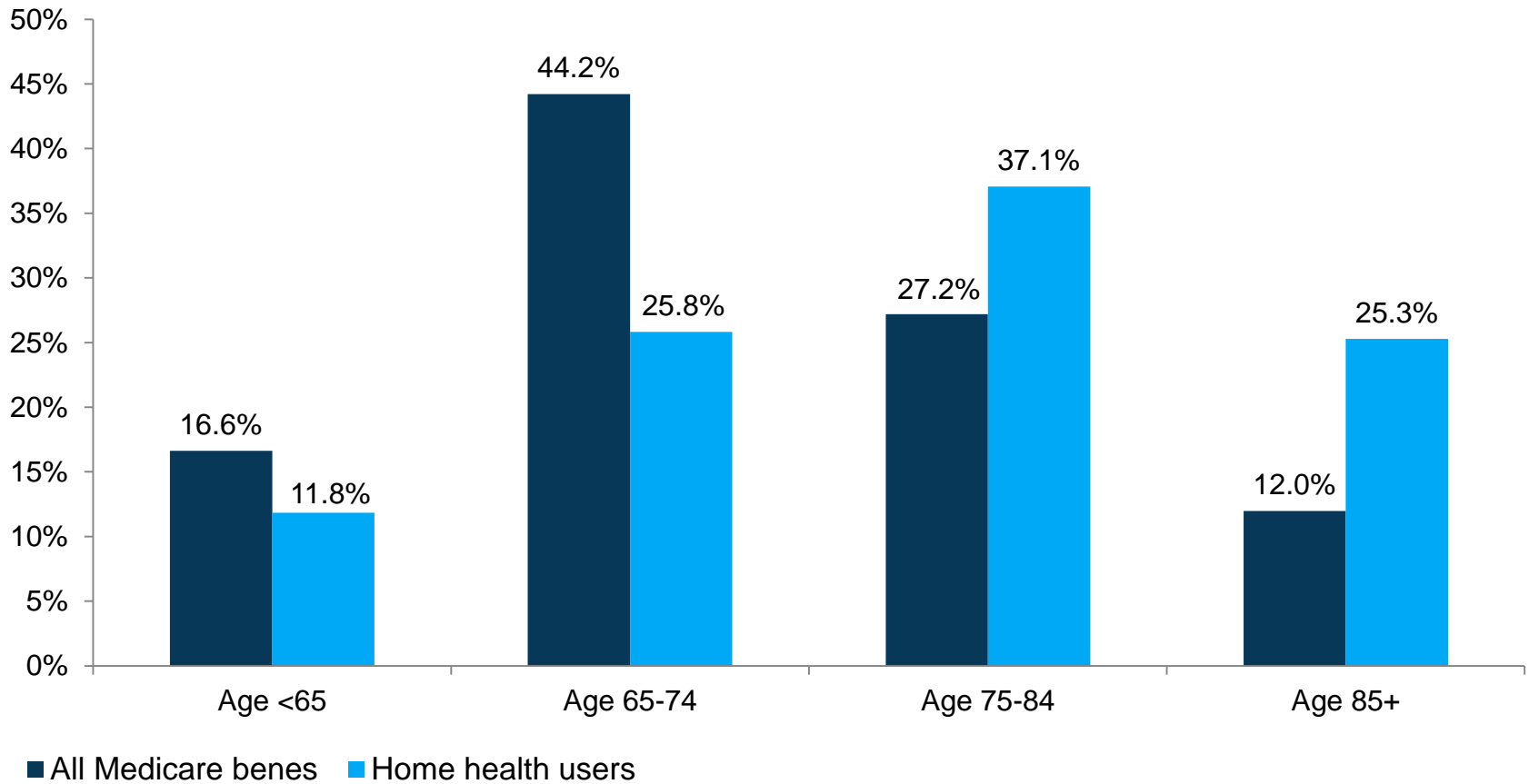
1. Demographics of Home Health Users
2. Clinical Profile of Home Health Users
3. Post-Acute Care Market Overview
4. Home Health Care Services Industry Workforce
5. Organizational Trends in Home Health
6. Economic Contribution of Home Health Agencies
7. Outcomes
8. Appendix A: Readmission Rate Methodology



Section 1: Demographics of Home Health Users

Demographics of Home Health Users

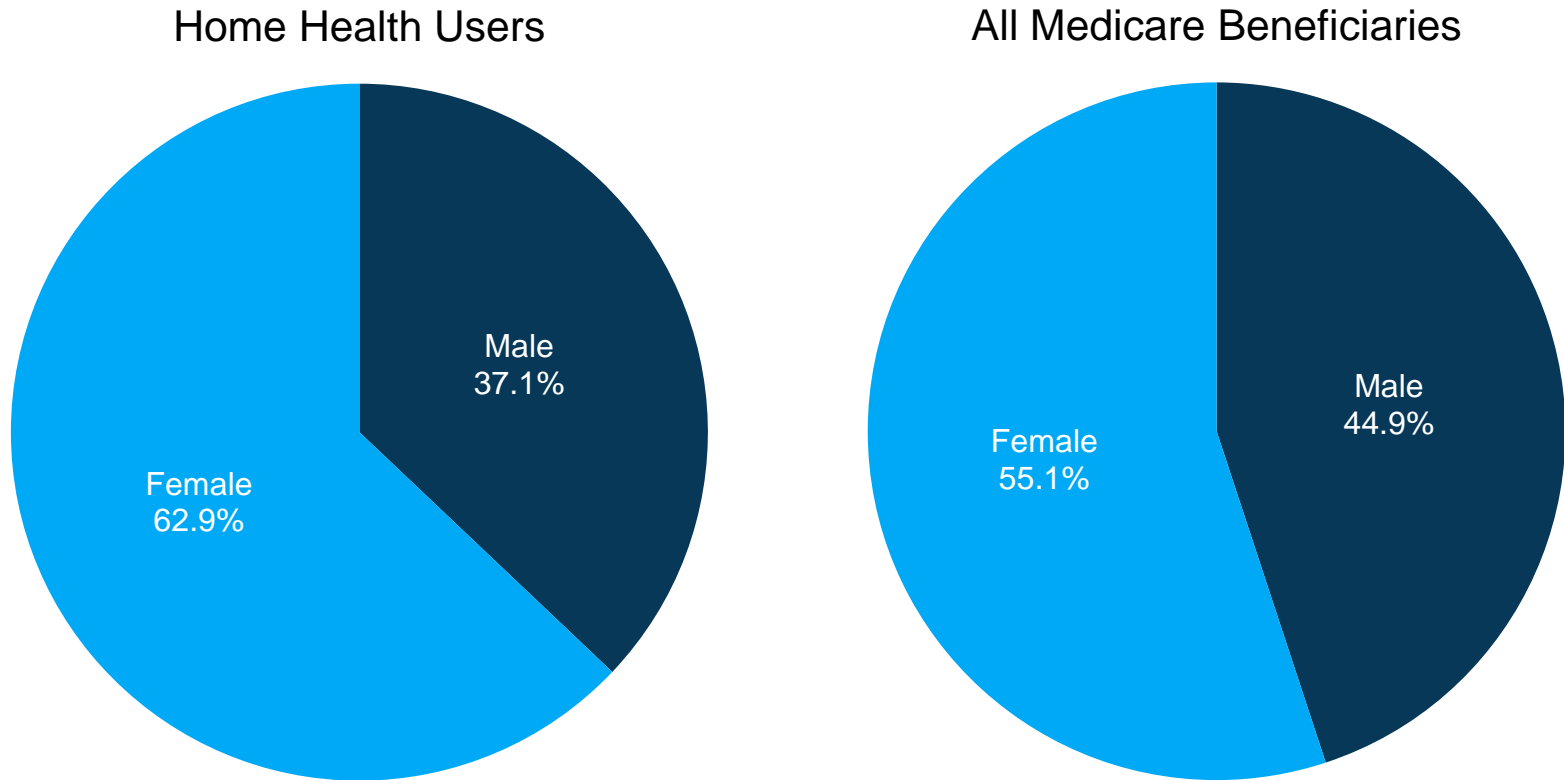
Chart 1.1: Age Distribution of Home Health Users and All Medicare Beneficiaries, 2012



Source: Avalere analysis of the Medicare Current Beneficiary Survey, Access to Care file 2012

Demographics of Home Health Users

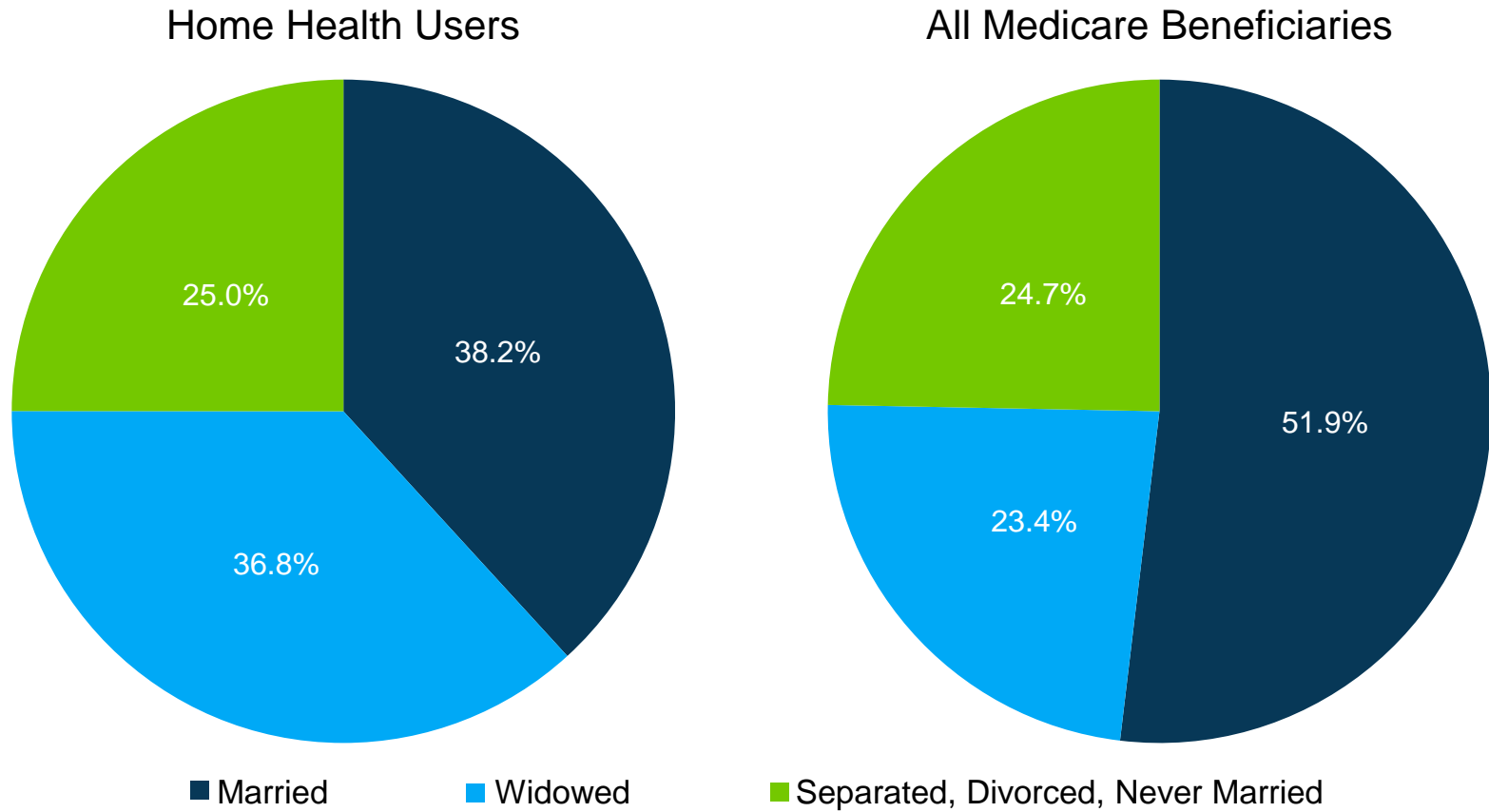
Chart 1.2: Gender Distribution of Home Health Users and All Medicare Beneficiaries, 2012



Source: Avalere analysis of the Medicare Current Beneficiary Survey, Access to Care file 2012

Demographics of Home Health Users

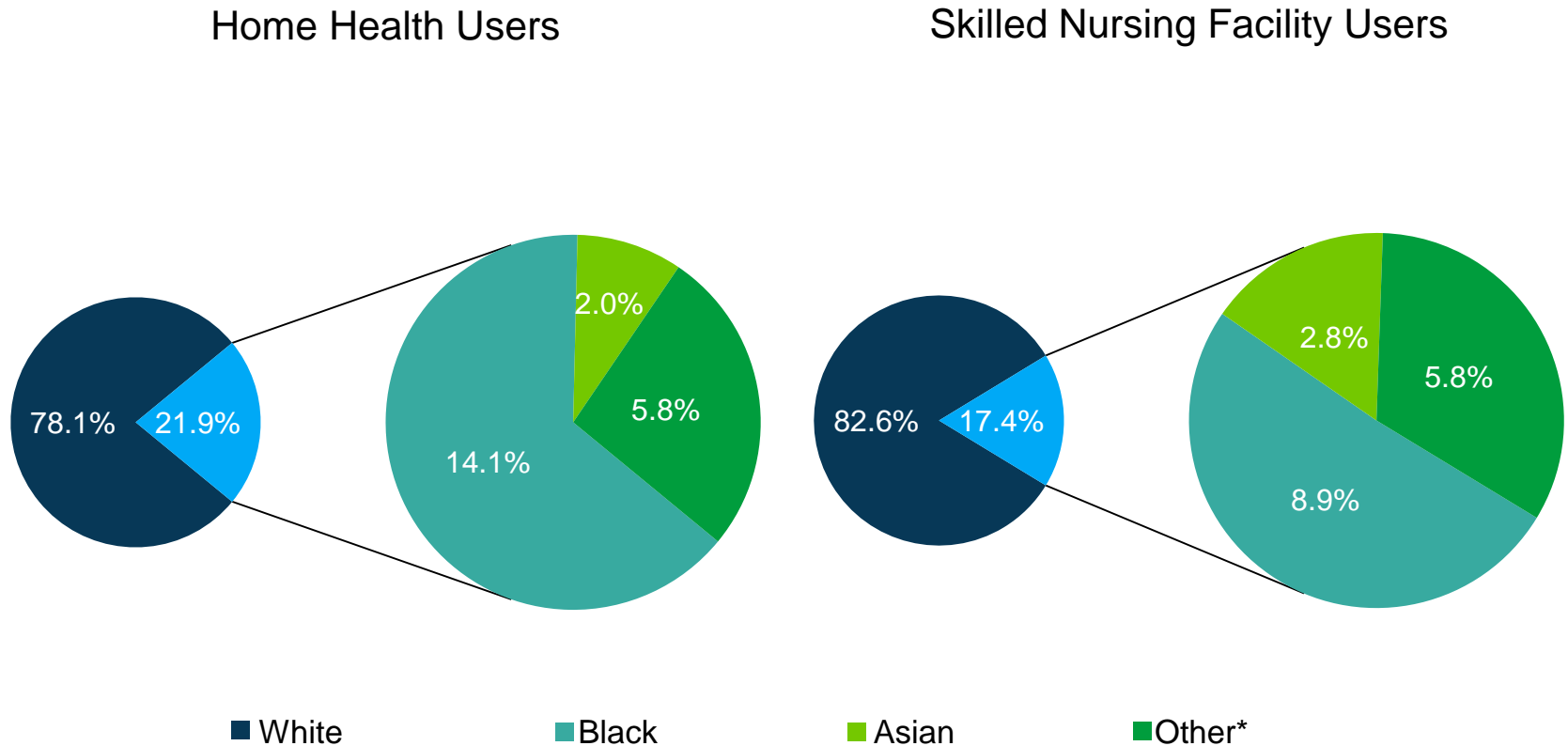
Chart 1.3: Marital Status of Home Health Users and All Medicare Beneficiaries, 2012



Source: Avalere analysis of the Medicare Current Beneficiary Survey, Access to Care file 2012

Demographics of Home Health Users

Chart 1.4: Race of Home Health Users, Skilled Nursing Facility Users, and All Medicare Beneficiaries, 2012

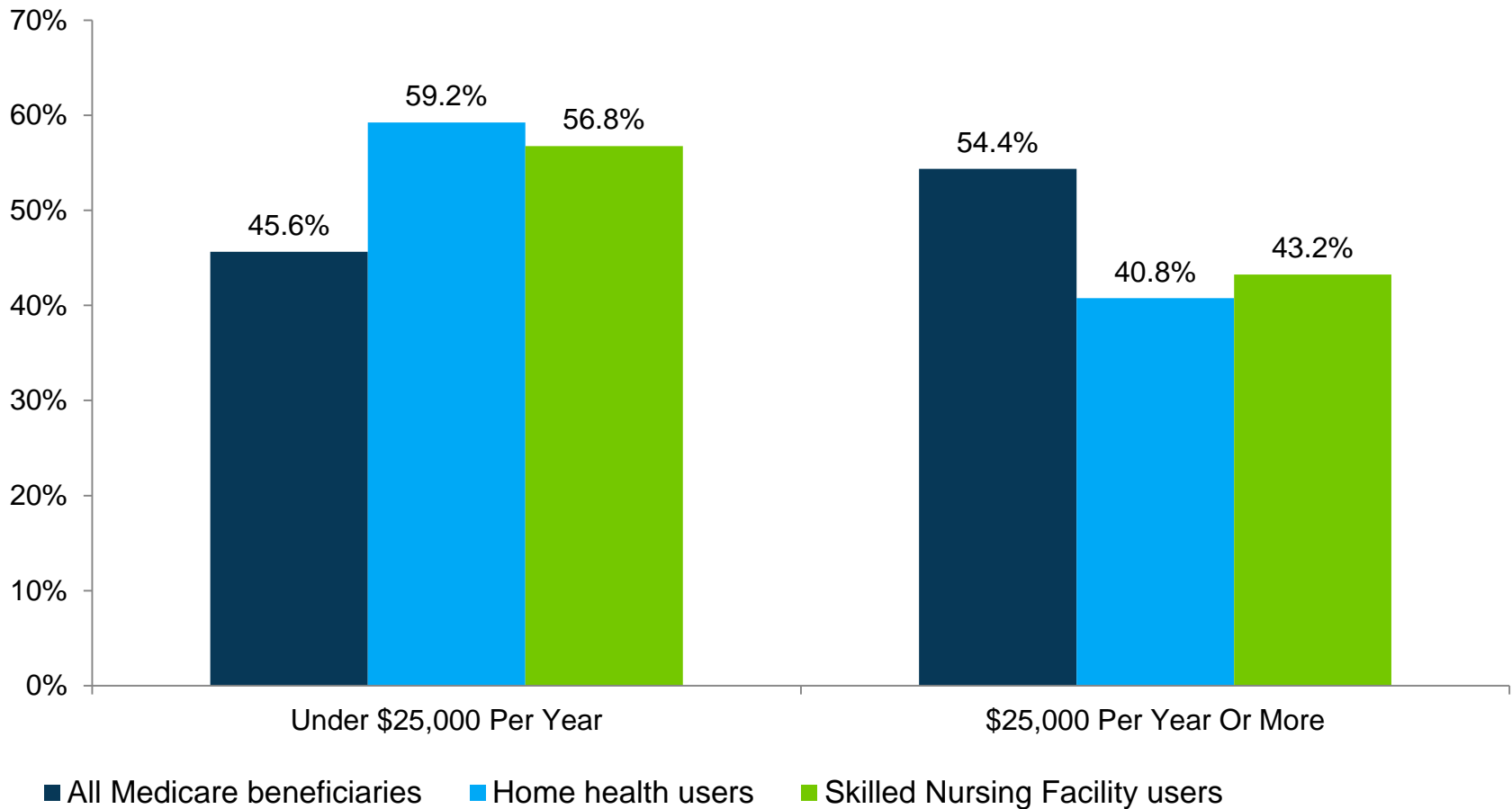


Source: Avalere analysis of the Medicare Current Beneficiary Survey, Access to Care file 2012

*Other includes American Indian, Alaska Native, Native Hawaiian, Pacific Islander, Other race, and More than one race

Demographics of Home Health Users

Chart 1.5: Income Distribution of Home Health Users, Skilled Nursing Facility Users, and All Medicare Beneficiaries, 2012



Source: Avalere analysis of the Medicare Current Beneficiary Survey, Access to Care file 2012

Demographics of Home Health Users

Table 1.6: Selected Characteristics of Medicare Home Health Users and All Medicare Beneficiaries, 2012

	All Medicare Home Health Users	All Medicare Beneficiaries
Age 85+	25.3%	12.0%
Live alone	36.8%	28.3%
Have 3 or more chronic conditions	85.9%	62.9%
Have 2 or more ADL limitations*	34.2%	12.8%
Report fair or poor health	47.0%	26.6%
Are in somewhat or much worse health than last year	39.2%	21.6%
Have incomes at or under 200% of the Federal Poverty Level (FPL)**	67.9%	53.1%
Have incomes under 100% of the Federal Poverty Level (FPL)**	32.6%	22.6%

Avalere analysis of the Medicare Current Beneficiary Survey, Access to Care file 2012

*ADL = Activities of daily living, such as eating, dressing, and bathing. Limitations with at least 2 ADLs is considered a measure of moderate to severe disability and is often the eligibility threshold for a nursing home level of care.

**In 2012, 100% of FPL for a household of 1 was \$11,170, a household of 2 was \$15,130, a household of 3 was \$19,090, and household of 4 was \$23,050. 200% of FPL was double each amount.

Demographics of Home Health Users*

Table 1.7: Average Annual Living Expenses for Households with Incomes under 200 Percent of the Federal Poverty Level (FPL)** with at Least One Individual 65 Years or Older, 2012

Living Expense	One-Person Elderly Household	Two-Person Elderly Household	All Elderly Household Sizes
Housing	\$5,818	\$7,798	\$7,124
Food	\$2,276	\$4,239	\$3,456
Transportation	\$1,588	\$3,732	\$2,801
Health Care (out-of-pocket costs)	\$1,839	\$3,448	\$2,594
Total	\$11,521	\$19,217	\$15,975

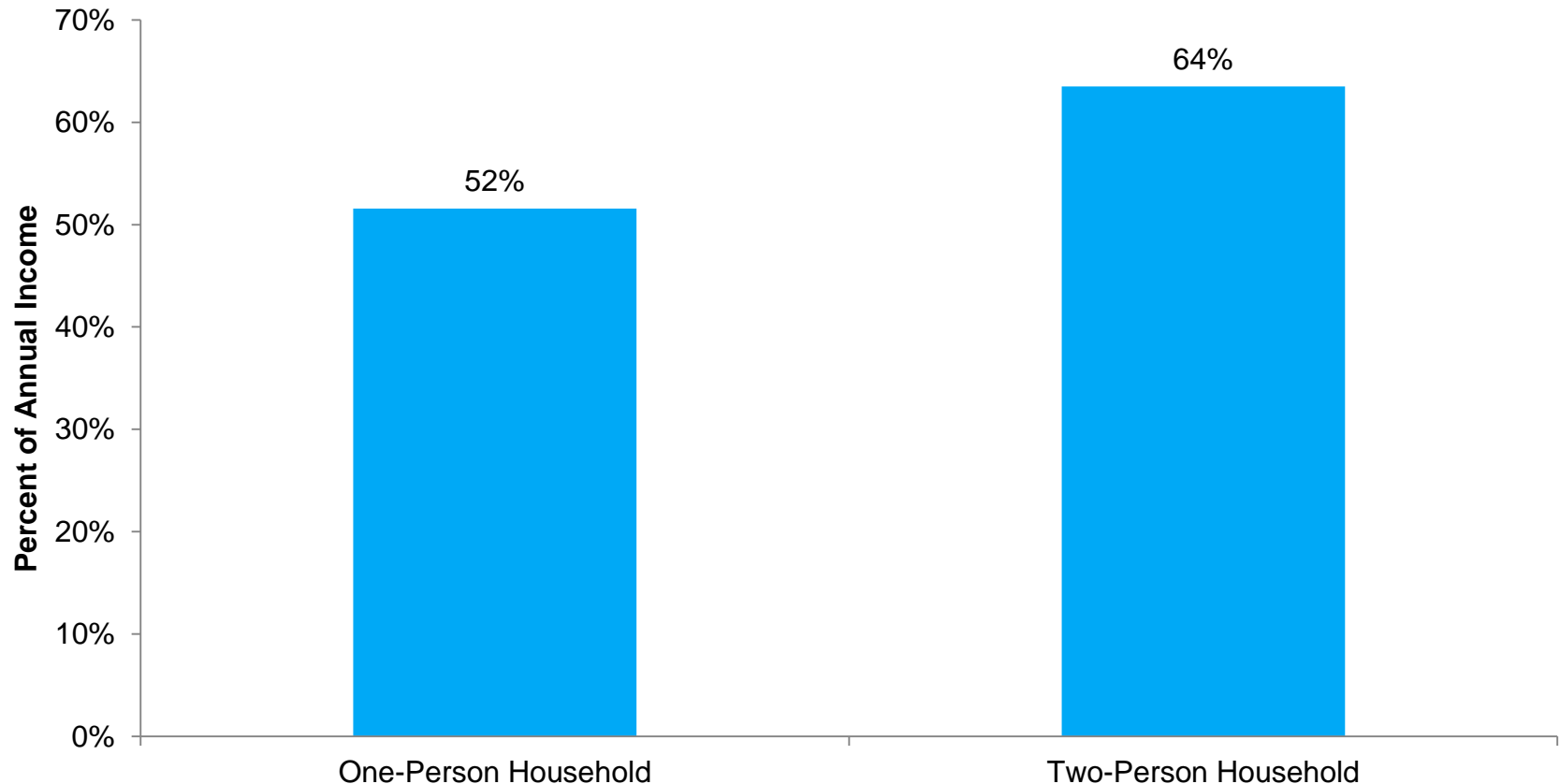
Source: Avalere analysis of the 2012 Bureau of Labor Statistics Consumer Expenditure Survey. The analysis includes households with one or more individuals age 65 or older and annual incomes below 200% of the Federal Poverty Limit.

*This analysis includes, but is not limited to, home health users.

**In 2012, 200% of the Federal Poverty Level was \$22,340 for a one-person household and \$30,260 for a two-person household.

Demographics of Home Health Users*

Chart 1.8: Average Annual Living Expenses**, as a Percentage of Income, for One- And Two-Person Households at 200%** of the Federal Poverty Limit with at Least One Individual 65 Years or Older, 2012



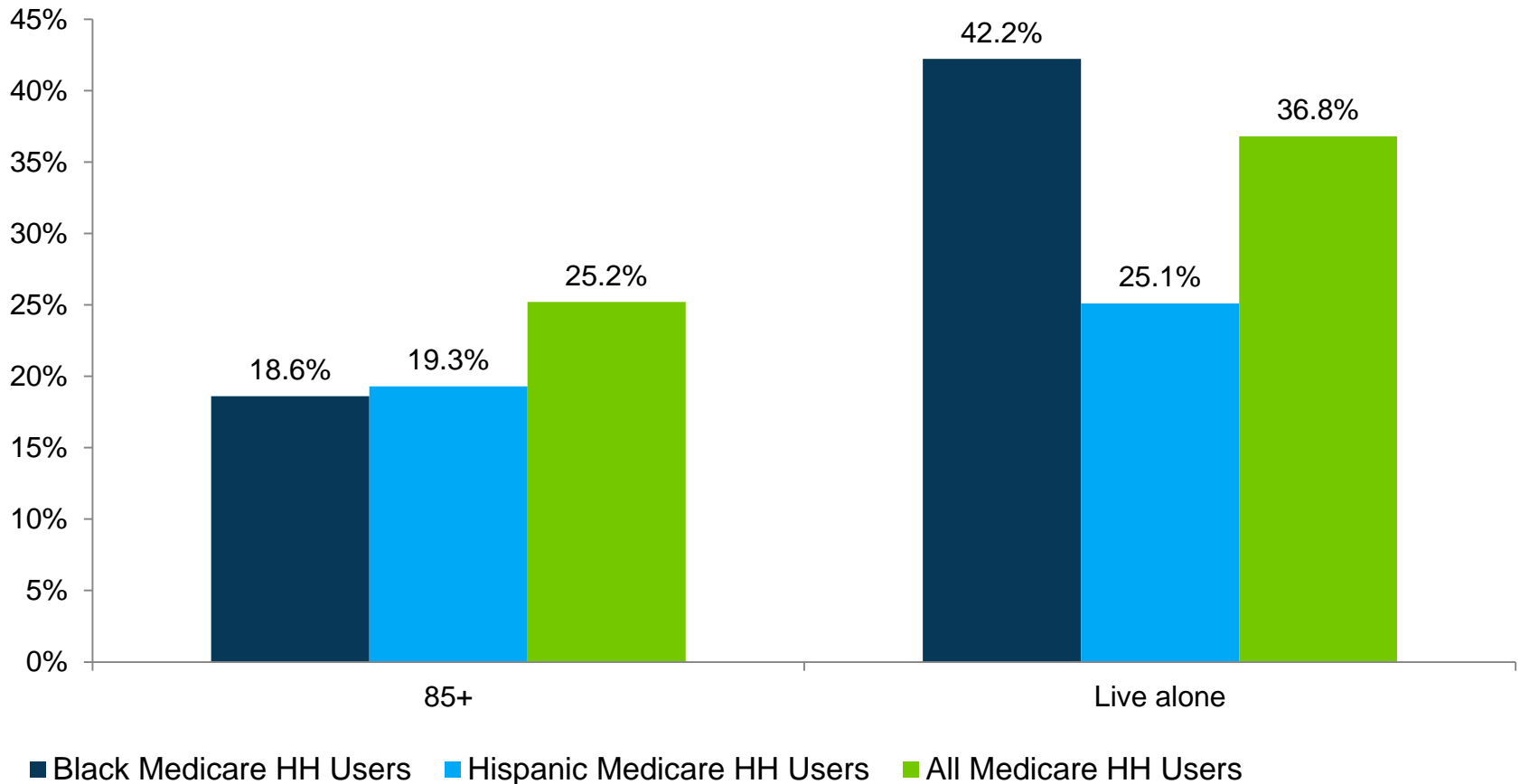
Source: Avalere analysis of the 2012 Bureau of Labor Statistics Consumer Expenditure Survey. The 2012 average annual living expenses are for one-person or two-person households, respectively, under 200 percent of the Federal Poverty Limit with at least one individual 65 years or older.

*This analysis includes, but is not limited to, home health users.

**In 2012, 200% of the Federal Poverty Level was \$22,340 for a one-person household and \$30,260 for a two-person household.

Demographics of Home Health Users by Race and Ethnicity

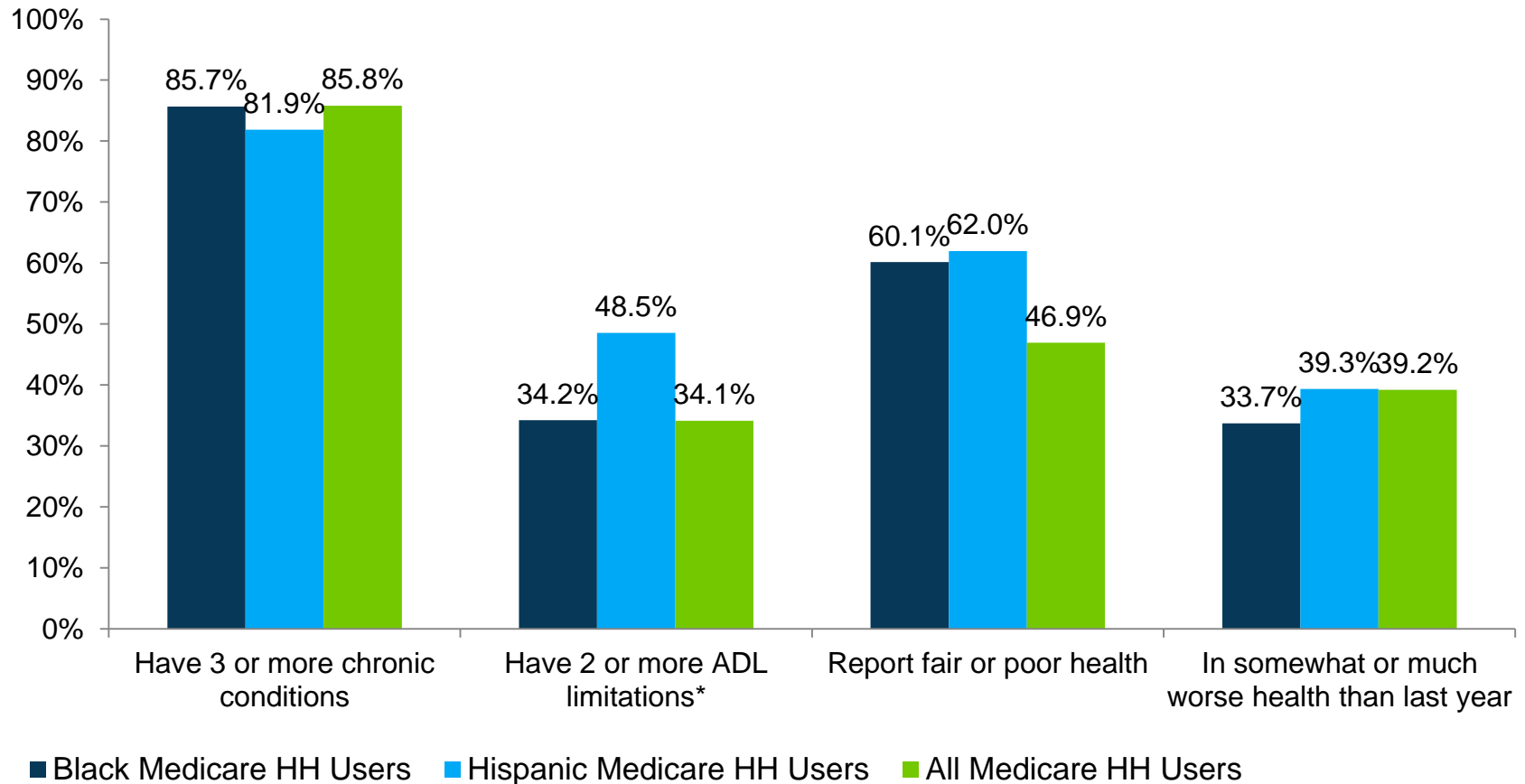
Chart 1.9: Selected Characteristics of All Medicare Home Health Users by Race and Ethnicity, 2012



Source: Avalere analysis of the Medicare Current Beneficiary Survey, Access to Care file 2012

Demographics of Home Health Users by Race and Ethnicity

Chart 1.10: Health Status of Home Health Users by Race and Ethnicity, 2012

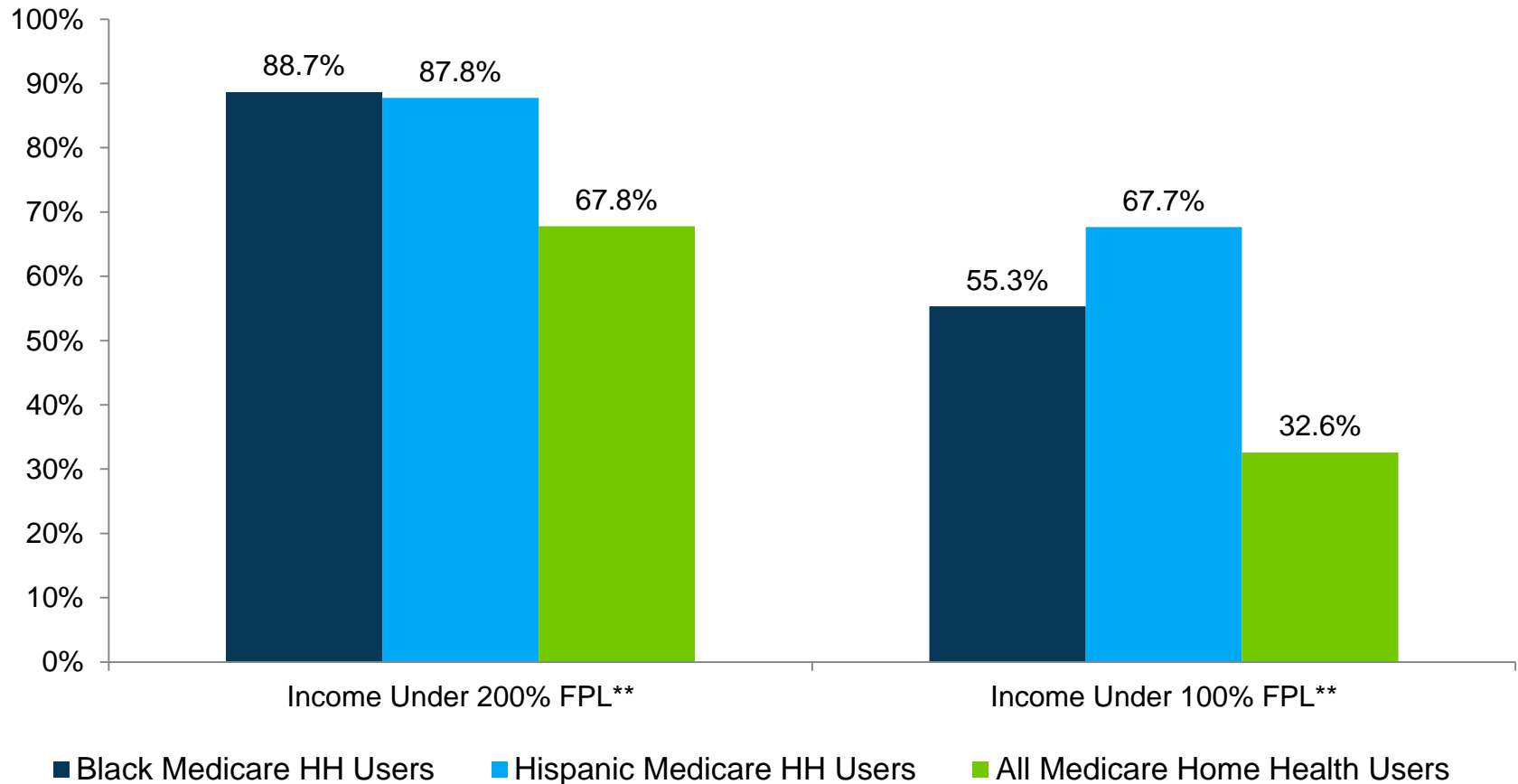


Source: Avalere analysis of the Medicare Current Beneficiary Survey, Access to Care file 2012

*ADL = Activities of daily living, such as eating, dressing, and bathing. Limitations with at least 2 ADLs is considered a measure of moderate to severe disability and is often the eligibility threshold for a nursing home level of care.

Demographics of Home Health Users by Race and Ethnicity

Chart 1.11: Income by Federal Poverty Level (FPL) of Home Health Users by Race and Ethnicity, 2012

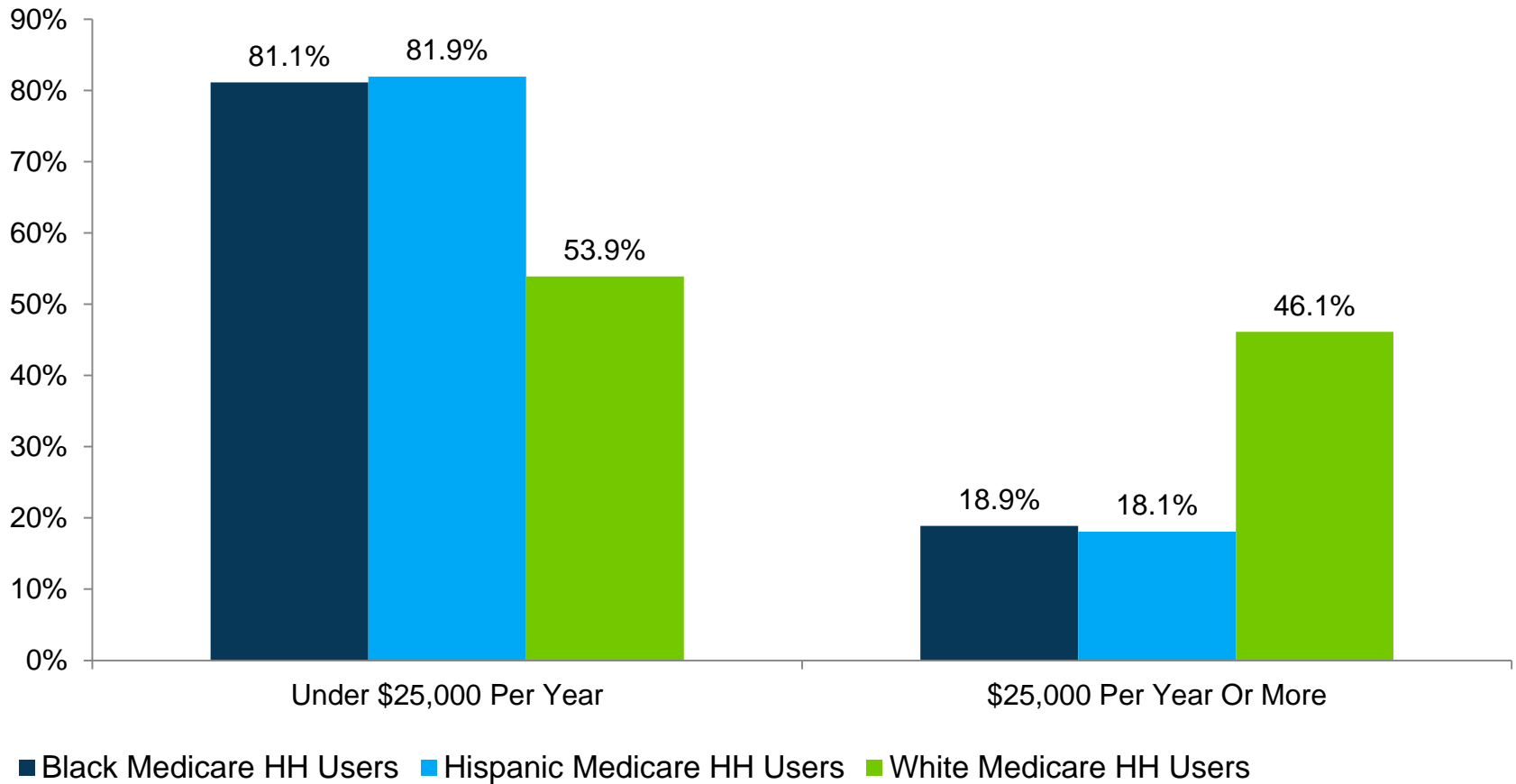


Source: Avalere analysis of the Medicare Current Beneficiary Survey, Access to Care file 2012

**In 2012, FPL for a household of 1 was \$11,170, a household of 2 was \$15,130, a household of 3 was \$19,090, and household of 4 was \$23,050.

Demographics of Home Health Users by Race and Ethnicity

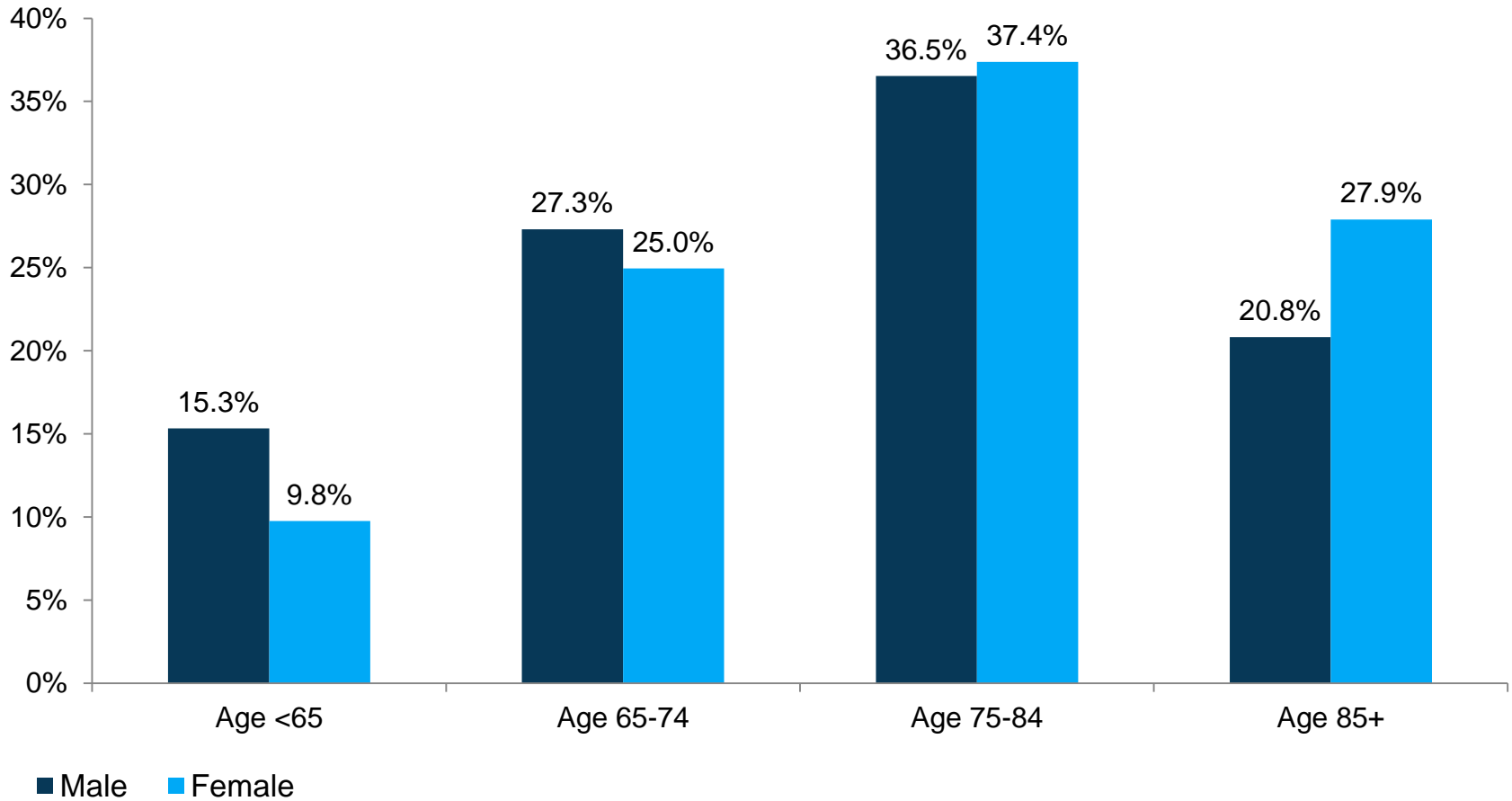
Chart 1.12: Income Distribution of Home Health Users by Race and Ethnicity, 2012



Source: Avalere analysis of the Medicare Current Beneficiary Survey, Access to Care file 2012

Demographics of Home Health Users by Sex

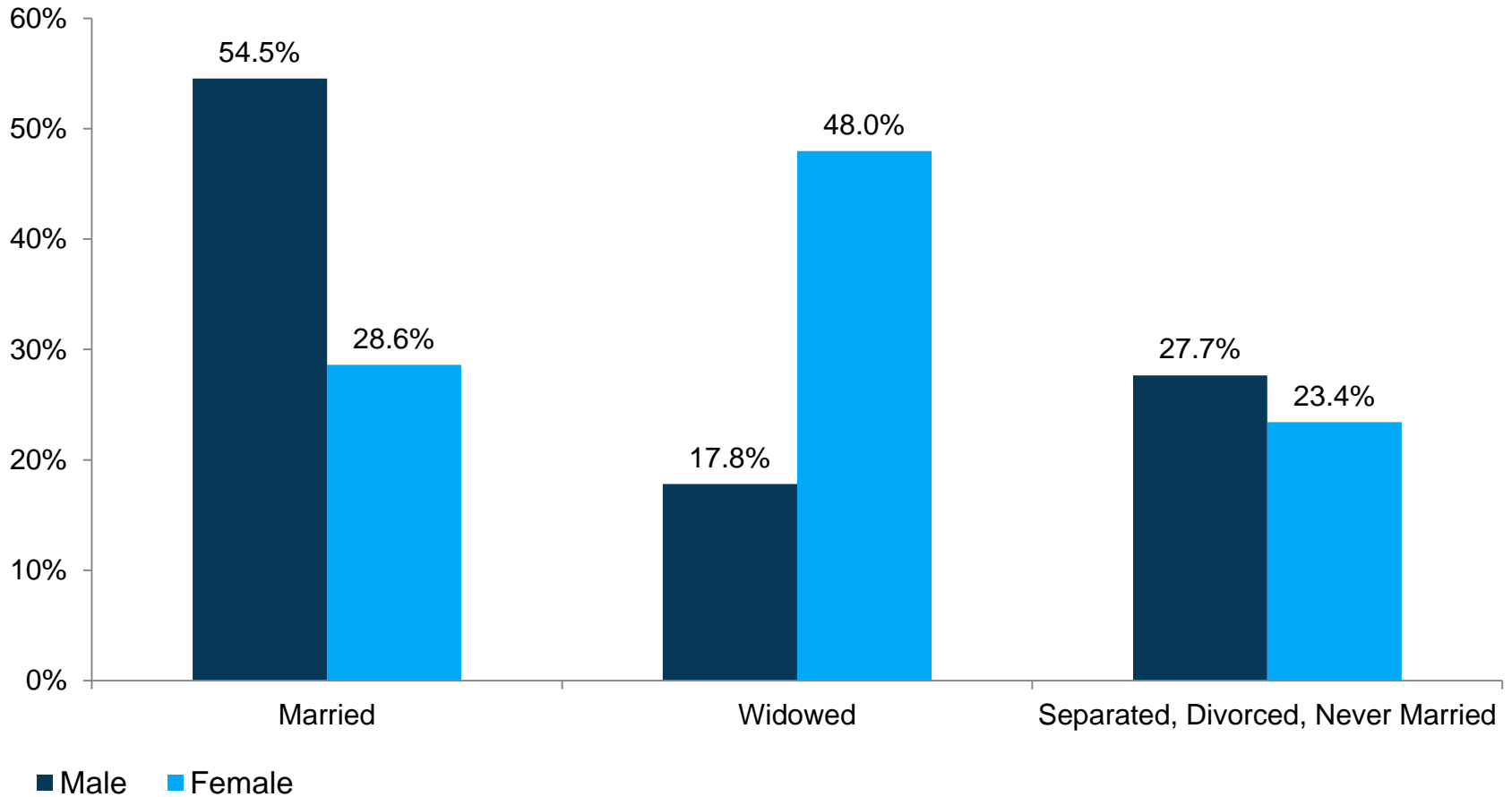
Chart 1.13: Age Distribution of Home Health Users by Sex, 2012



Source: Avalere analysis of the Medicare Current Beneficiary Survey, Access to Care file 2012

Demographics of Home Health Users by Sex

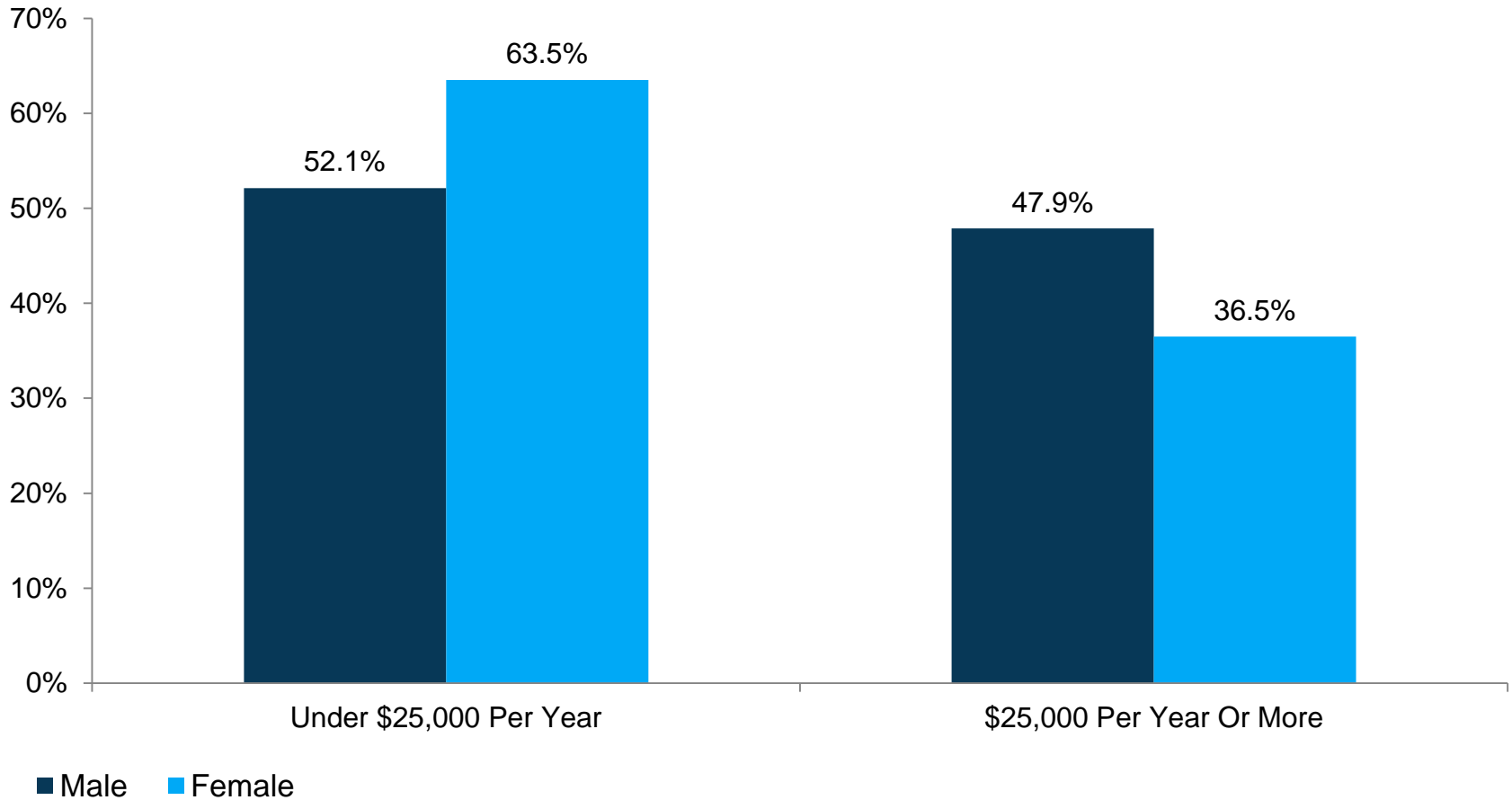
Chart 1.14: Marital Status of Home Health Users by Sex, 2012



Source: Avalere analysis of the Medicare Current Beneficiary Survey, Access to Care file 2012

Demographics of Home Health Users by Sex

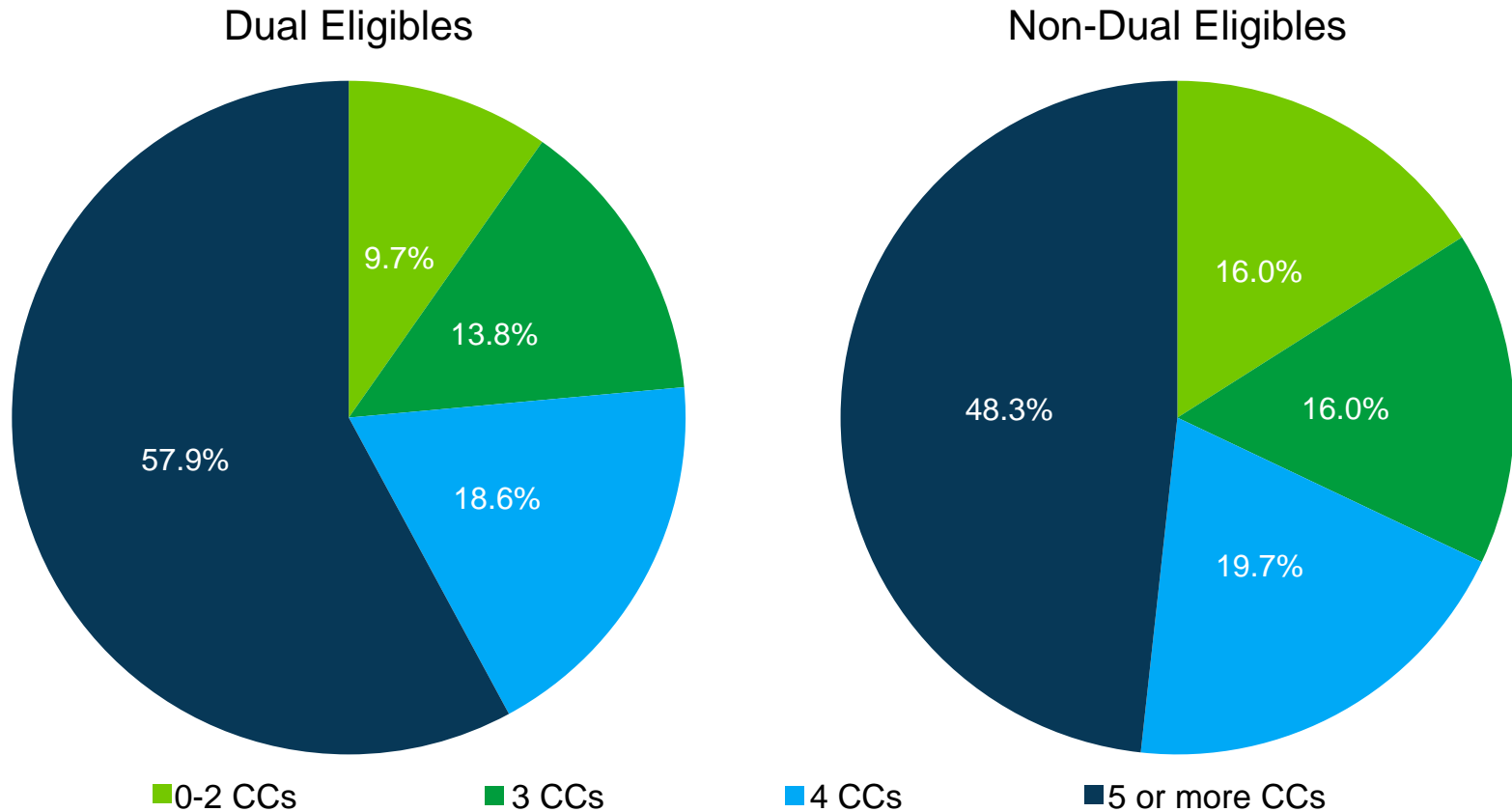
Chart 1.15: Income Distribution of Home Health Users by Sex, 2012



Source: Avalere analysis of the Medicare Current Beneficiary Survey, Access to Care file 2012

Demographics of Home Health Users by Dual Eligible Status

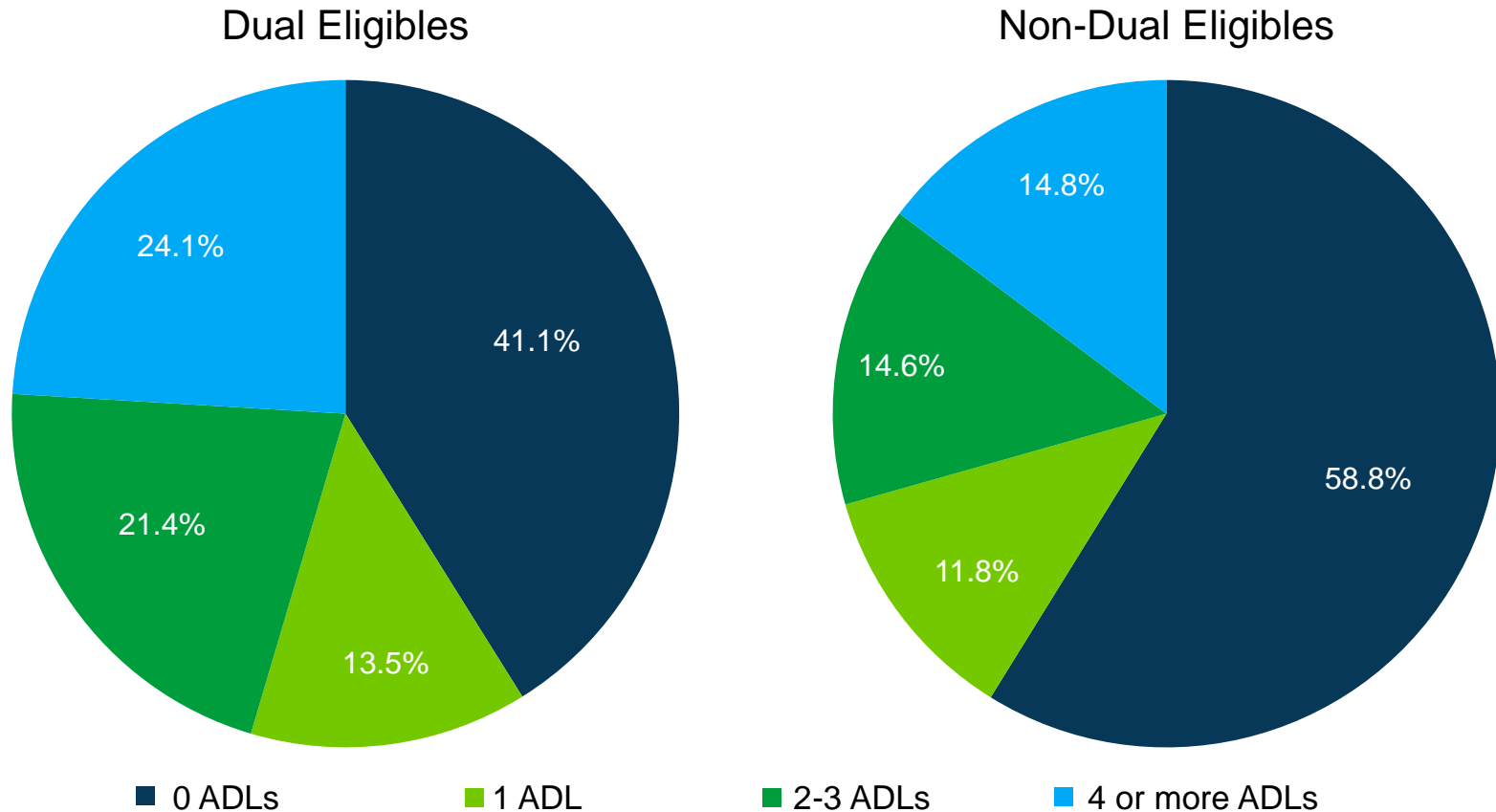
Chart 1.16: Percentage of Home Health Users by Dual Eligible Status and Number of Chronic Conditions (CCs), 2012



Source: Avalere analysis of the Medicare Current Beneficiary Survey, Access to Care file 2012
Note: Dual eligibles are defined as individuals with any state buy-in at any point during the year.

Demographics of Home Health Users by Dual Eligible Status

Chart 1.17: Percentage of Home Health Users by Dual Eligible Status and Number of Activities of Daily Living (ADLs) with Which They Require Assistance, 2012

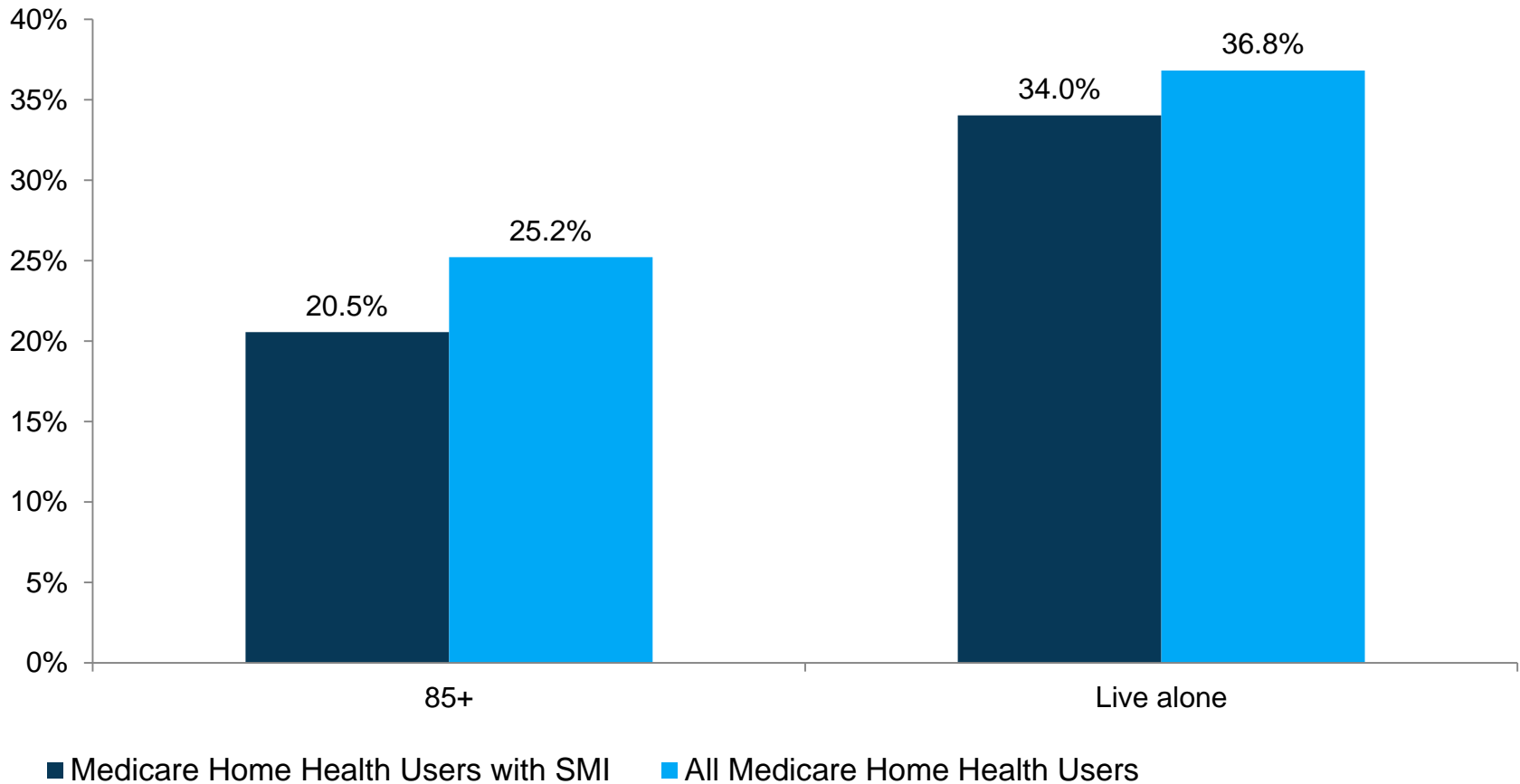


Source: Avalere analysis of the Medicare Current Beneficiary Survey, Access to Care file 2012

Note: Dual eligibles are defined as individuals with any state buy-in at any point during the year. Beneficiaries were classified as requiring assistance with an ADL (bathing, walking, transferring, dressing, toileting, and eating) if they reported needing at least stand-by assistance with that ADL.

Demographics of Home Health Users by Severe Mental Illness (SMI)*

Chart 1.18: Selected Characteristics of All Medicare Home Health Users and Medicare Home Health Users with SMI, 2012

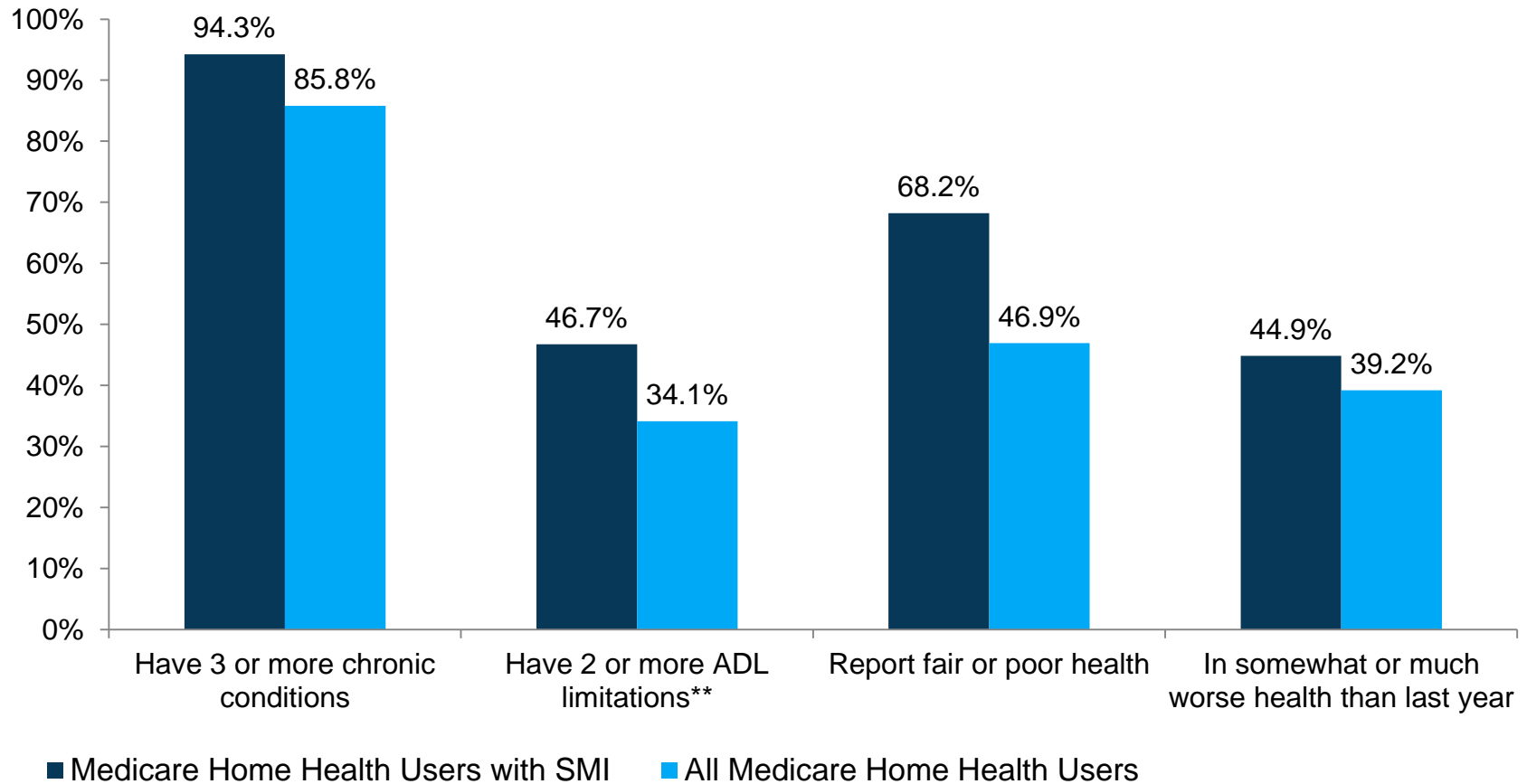


Source: Avalere analysis of the Medicare Current Beneficiary Survey, Access to Care file 2012.

*Severe mental illness (SMI) is defined as having major depression or another mental illness, including bipolar disorder, schizophrenia, and other psychoses.

Demographics of Home Health Users by Severe Mental Illness (SMI)*

Chart 1.19: Selected Characteristics of All Medicare Home Health Users and Medicare Home Health Users with SMI, 2012



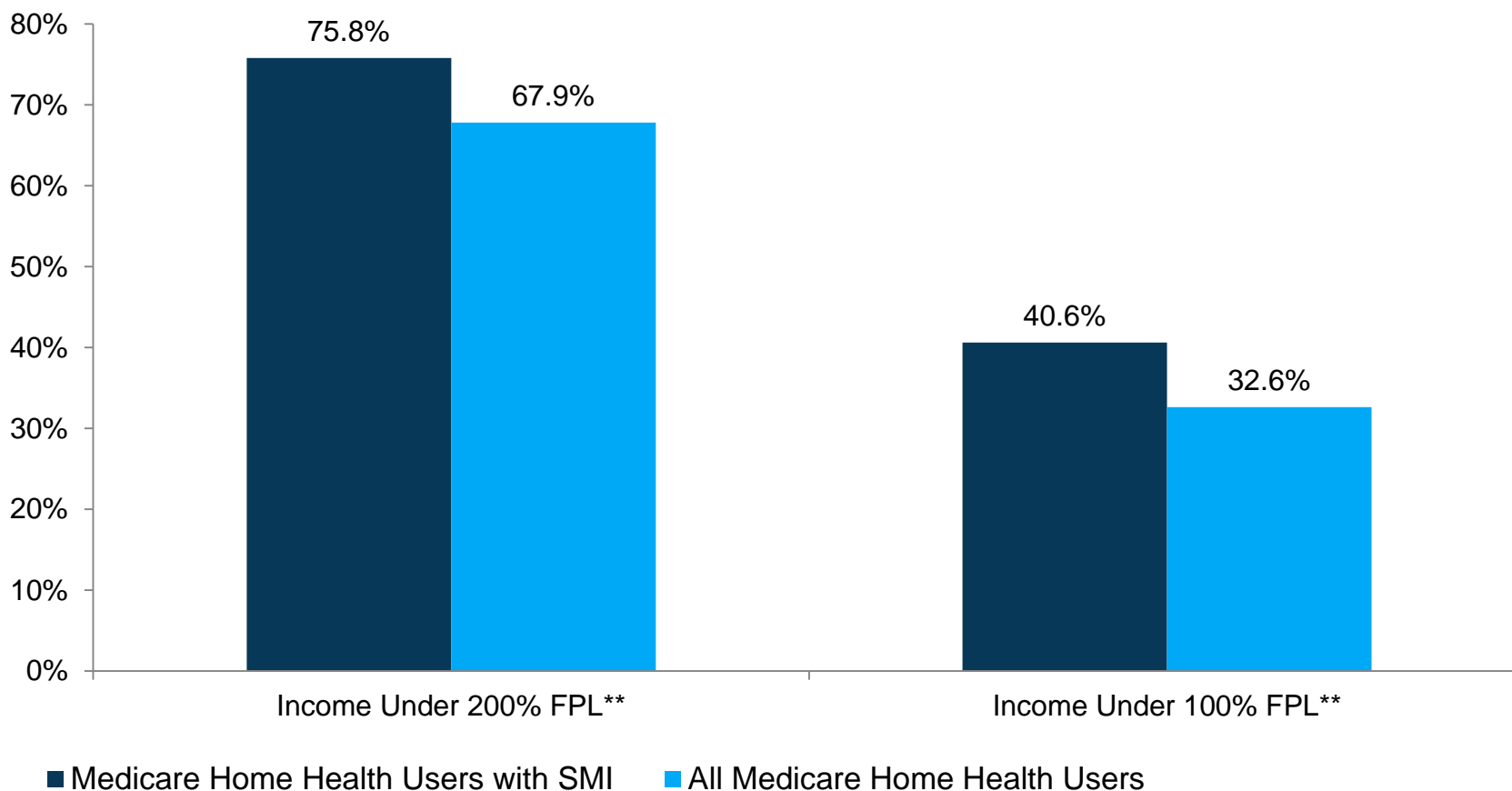
Source: Avalere analysis of the Medicare Current Beneficiary Survey, Access to Care file 2012.

*Severe mental illness (SMI) is defined as having depression or another mental disorder, including bipolar disorder, schizophrenia, and other psychoses.

**ADL = Activities of daily living, such as eating, dressing, and bathing. Limitations with at least 2 ADLs is considered a measure of moderate to severe disability and is often the eligibility threshold for a nursing home level of care.

Demographics of Home Health Users by Severe Mental Illness (SMI)*

Chart 1.20: Selected Characteristics of Medicare Home Health Users with SMI and All Medicare Home Health Users, 2012



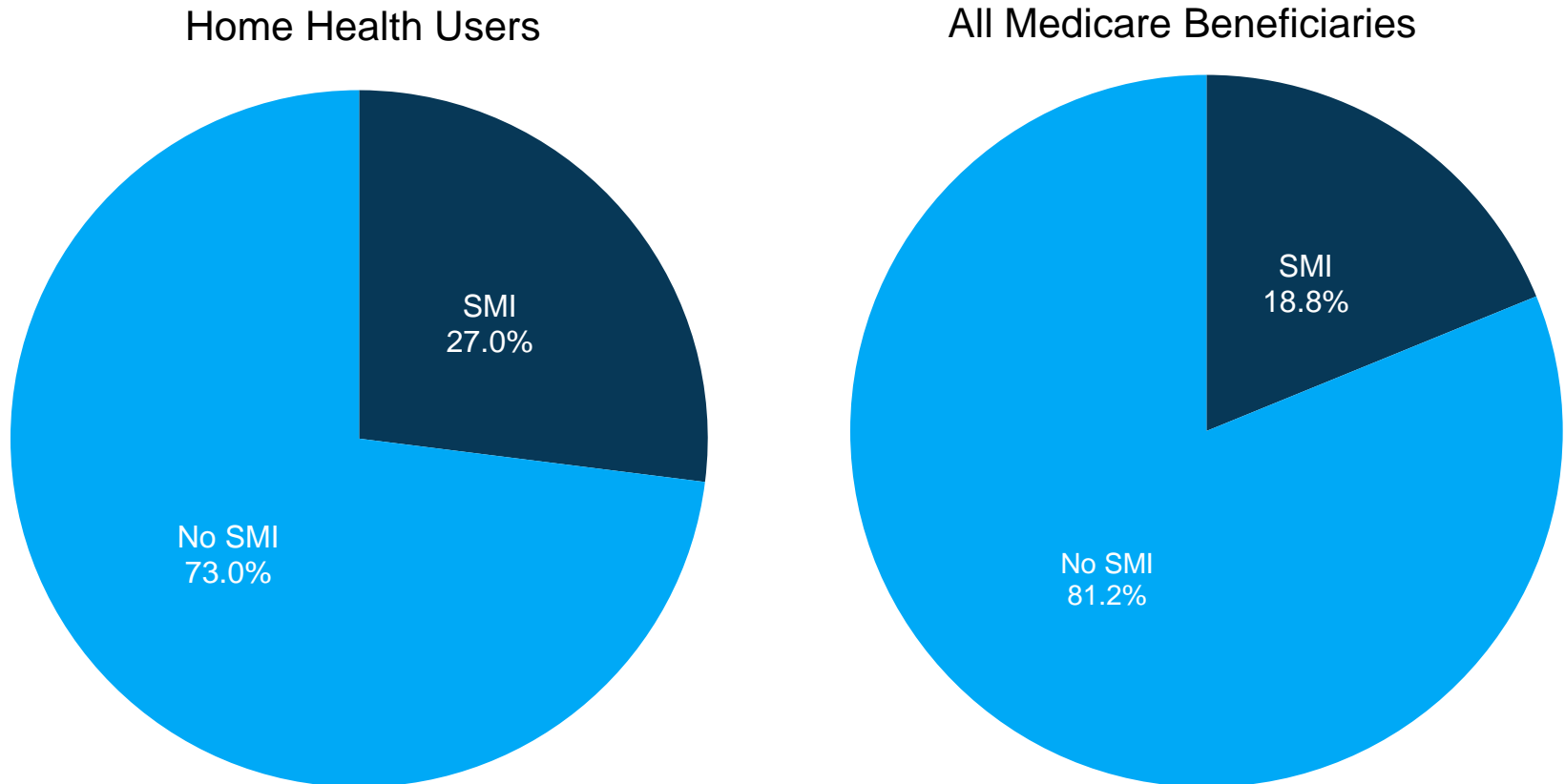
Source: Avalere analysis of the Medicare Current Beneficiary Survey, Access to Care file 2012.

*Severe mental illness (SMI) is defined as having depression or another mental disorder, including bipolar disorder, schizophrenia, and other psychoses.

**In 2012, Federal Poverty Level (FPL) for a household of 1 was \$11,170, a household of 2 was \$15,130, a household of 3 was \$19,090, and household of 4 was \$23,050. 200% of FPL is double those amounts.

Demographics of Home Health Users by Severe Mental Illness (SMI)*

Chart 1.21: Percentage of Medicare Home Health Users with SMI Compared to the Percentage of Medicare Beneficiaries, 2012

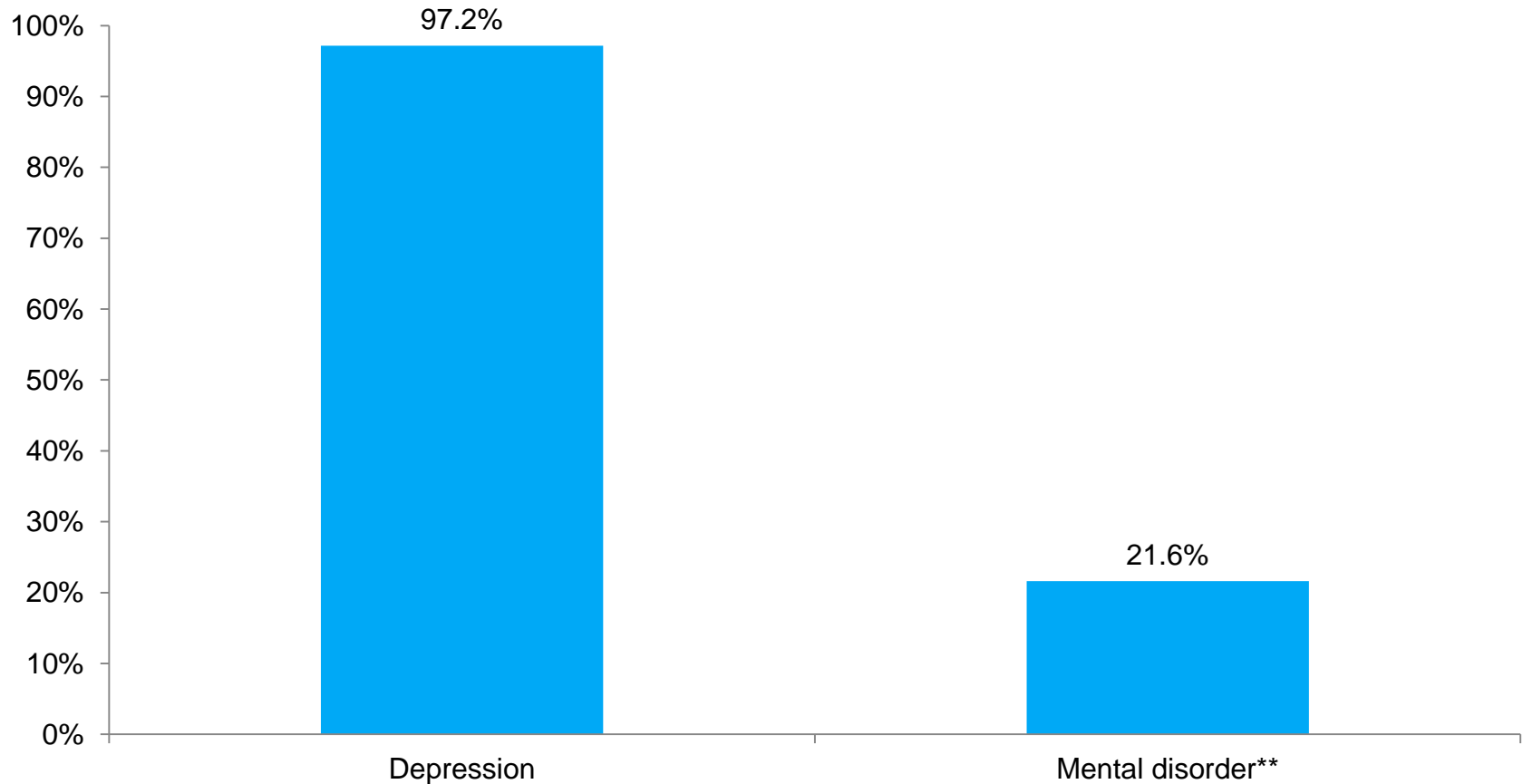


Source: Avalere analysis of the Medicare Current Beneficiary Survey, Access to Care file, 2012

*Severe mental illness (SMI) is defined as having depression or other mental disorder, including bipolar disorder, schizophrenia, and other psychoses.

Demographics of Home Health Users by Severe Mental Illness (SMI)*

Chart 1.22: Breakdown of Medicare Home Health Users with SMI by Type of SMI, 2012



Source: Avalere analysis of the Medicare Current Beneficiary Survey, Access to Care file 2012

*Severe mental illness (SMI) is defined as having depression or other mental disorder, including bipolar disorder, schizophrenia, and other psychoses.

**Mental disorder includes bipolar disorder, schizophrenia, and other psychoses besides depression.



Section 2: Clinical Profile of Home Health Users

Clinical Profile of Home Health Users

Table 2.1: Top 20 Most Common Diagnosis Related Groups (MS-DRGs) for Beneficiaries Discharged from Hospital to Part A Home Health Episodes, 2012

MS-DRG	Number of Home Health Part A Claims, 2012	Percent of Total Home Health Part A Claims, 2012
Major joint replacement or reattachment of lower extremity w/o mcc	197,332	10.33%
Septicemia or severe sepsis w/o mv 96+ hours w mcc	51,509	2.70%
Heart failure & shock w cc	42,746	2.24%
Heart failure & shock w mcc	36,460	1.91%
Hip & femur procedures except major joint w cc	34,050	1.78%
Kidney & urinary tract infections w/o mcc	32,405	1.70%
Simple pneumonia & pleurisy w cc	30,290	1.59%
Intracranial hemorrhage or cerebral infarction w cc	30,040	1.57%
Cellulitis w/o mcc	29,375	1.54%
Renal failure w cc	27,225	1.42%
Chronic obstructive pulmonary disease w mcc	26,192	1.37%
Simple pneumonia & pleurisy w mcc	23,883	1.25%
Chronic obstructive pulmonary disease w cc	22,620	1.18%
Esophagitis, gastroent & misc digest disorders w/o mcc	21,844	1.14%
Septicemia or severe sepsis w/o mv 96+ hours w/o mcc	21,600	1.13%
Misc disorders of nutrition, metabolism, fluids/electrolytes w/o mcc	19,940	1.04%
Spinal fusion except cervical w/o mcc	19,729	1.03%
Major small & large bowel procedures w cc	18,211	0.95%
Syncope & collapse	18,104	0.95%
G.I. Hemorrhage w cc	17,517	0.92%
Total for Top 20 MS-DRGs	721,072	37.73%

Source: Avalere Health, LLC analysis of Medicare Standard Analytic Files, 2012

Data for beneficiaries with a Part A home health episode and a prior short-term acute care hospital stay in 2012.

Note: CC is complication or comorbidity. MCC is major complication or comorbidity.

Clinical Profile of Home Health Users

Table 2.2: Top 20 Primary International Classification of Diseases, Version 9 (ICD-9) Diagnoses for All Home Health Claims, 2012

ICD-9 Diagnosis	Number of Home Health Part A Claims, 2012	Percent of Total Home Health Part A Claims, 2012
Diabetes mellitus	639,132	9.23%
Care involving use of rehabilitation procedures	500,728	7.23%
Other orthopedic aftercare	469,775	6.79%
Other and unspecified aftercare	417,035	6.02%
Heart failure	388,175	5.61%
Essential hypertension	344,549	4.98%
Chronic ulcer of skin	273,787	3.96%
Chronic bronchitis	208,668	3.01%
Osteoarthritis and allied disorders	207,327	3.00%
Late effects of cerebrovascular disease	193,169	2.79%
Cardiac dysrhythmias	135,305	1.95%
Disorders of muscle, ligament, and fascia	134,182	1.94%
Symptoms involving nervous and musculoskeletal systems	107,711	1.56%
Hypertensive heart disease	102,934	1.49%
Other complications of procedures, not elsewhere classified	98,105	1.42%
Other forms of chronic ischemic heart disease	92,461	1.34%
Other deficiency anemias	87,788	1.27%
Other disorders of urethra and urinary tract	87,556	1.26%
Other cellulitis and abscess	85,096	1.23%
Fitting and adjustment of other device	81,370	1.18%
Total for Top 20 Primary ICD-9 Diagnoses	4,654,853	67.25%

Source: Avalere Health, LLC analysis of Medicare Standard Analytic Files, 2012

Clinical Profile of Home Health Users

Table 2.3: Percent of Medicare Home Health (HH) Users with 3 or More Chronic Conditions Compared to All Medicare Beneficiaries, by State, 2012

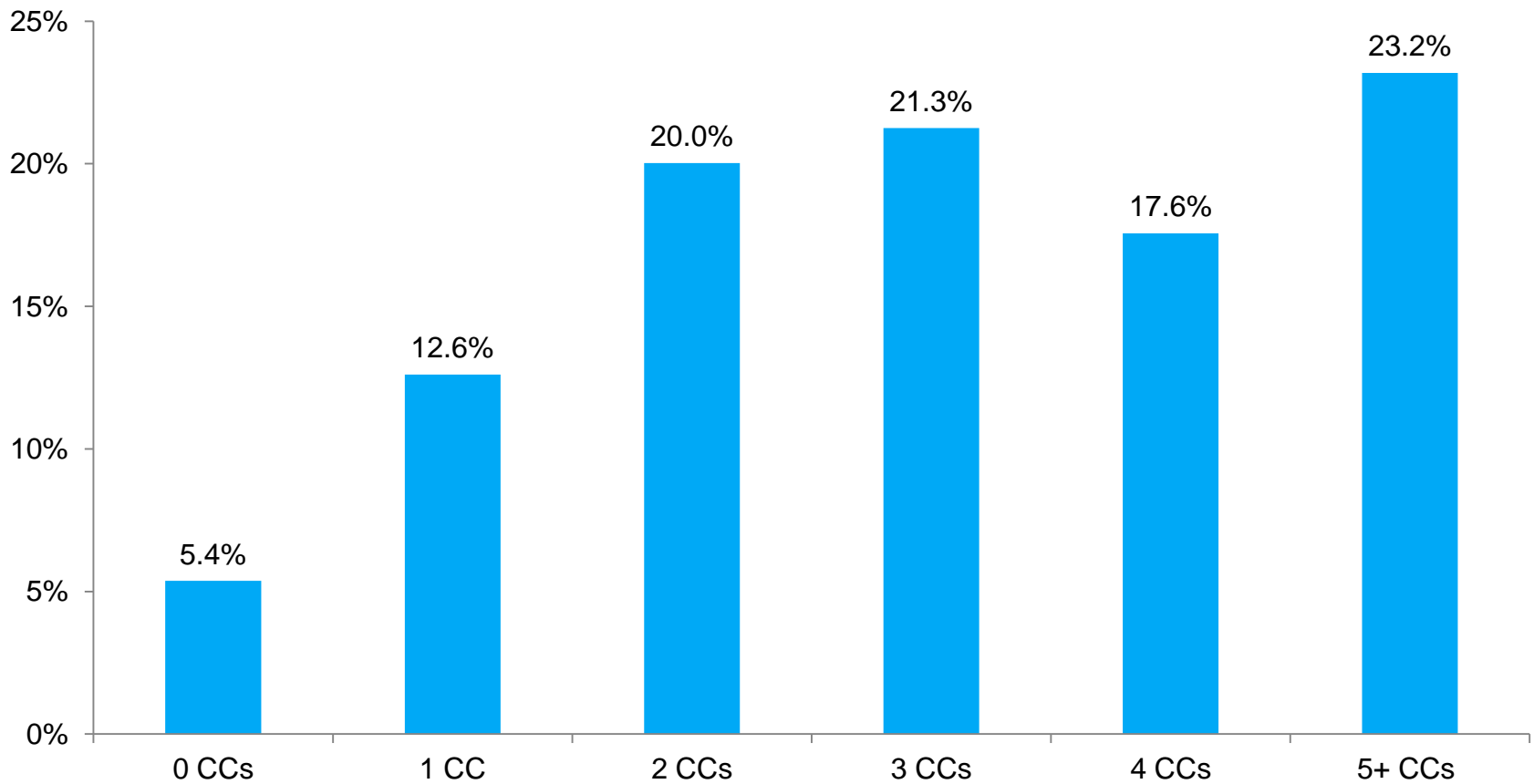
State	Percent of HH Users with 3+ CCs	Percent of Medicare Beneficiaries with 3+ CCs	State	Percent of HH Users with 3+ CCs	Percent of Medicare Beneficiaries with 3+ CCs
Alabama	87.64%	26.71%	Montana	87.37%	30.88%
Alaska	82.68%	26.32%	Nebraska	87.48%	29.23%
Arizona	85.49%	14.96%	Nevada	82.73%	15.25%
Arkansas	87.23%	26.61%	New Hampshire	90.21%	39.19%
California	86.23%	16.80%	New Jersey	88.28%	22.18%
Colorado	84.18%	18.93%	New Mexico	86.44%	22.93%
Connecticut	86.95%	24.97%	New York	87.65%	19.51%
Delaware	90.74%	33.27%	North Carolina	86.74%	26.71%
D.C	85.86%	25.44%	North Dakota	92.17%	43.00%
Florida	85.56%	21.35%	Ohio	90.31%	24.81%
Georgia	86.26%	23.28%	Oklahoma	89.84%	28.75%
Hawaii	84.63%	11.32%	Oregon	84.31%	17.15%
Idaho	84.71%	24.03%	Pennsylvania	89.02%	22.11%
Illinois	91.43%	34.26%	Rhode Island	87.39%	21.63%
Indiana	90.27%	29.13%	South Carolina	86.72%	27.21%
Iowa	89.71%	32.25%	South Dakota	89.06%	34.67%
Kansas	88.29%	29.79%	Tennessee	87.22%	21.61%
Kentucky	88.74%	30.39%	Texas	89.31%	24.94%
Louisiana	89.64%	27.65%	Utah	80.89%	17.07%
Maine	90.88%	36.75%	Vermont	88.69%	40.02%
Maryland	89.08%	25.16%	Virginia	86.58%	25.97%
Massachusetts	89.36%	30.22%	Washington	84.78%	21.18%
Michigan	90.29%	32.21%	West Virginia	90.51%	31.99%
Minnesota	86.32%	24.41%	Wisconsin	89.32%	23.75%
Mississippi	88.04%	30.38%	Wyoming	83.36%	25.42%
Missouri	89.52%	29.09%			

Source: Avalere Health, LLC analysis of Medicare Standard Analytic Files, 2012

Note: Having a chronic condition is defined as having a Medicare claim with a chronic condition listed in 2012. Medicare beneficiaries without any claims in 2012 are categorized as having no chronic conditions in 2012.

Clinical Profile of Home Health Users

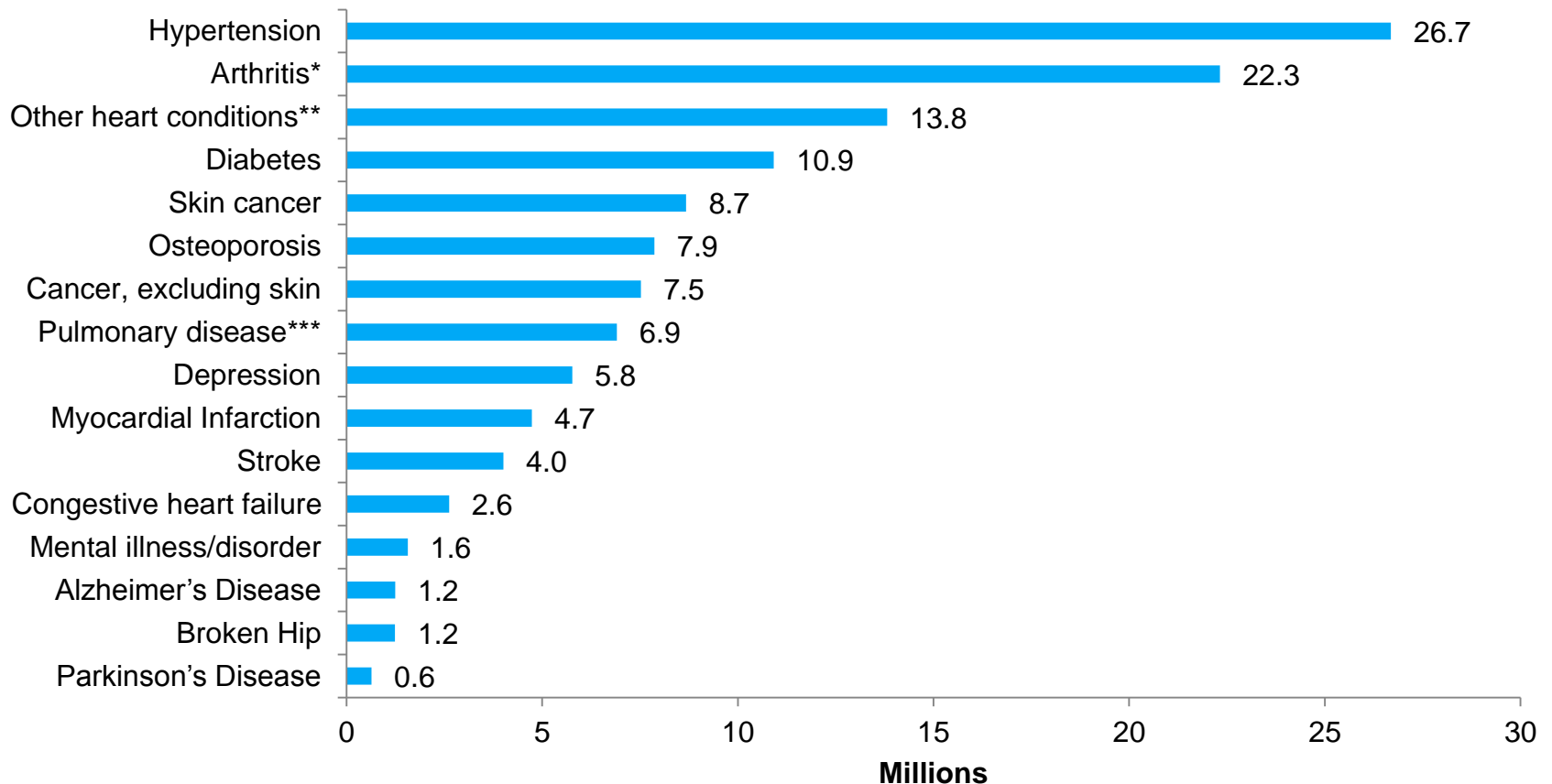
Chart 2.4: Percentage of Medicare Beneficiaries Aged 65+ with Chronic Conditions by Number of Chronic Conditions, 2012



Source: Avalere analysis of the Medicare Current Beneficiary Survey, Access to Care file 2012

Clinical Profile of Home Health Users

Chart 2.5: Number of Medicare Beneficiaries Aged 65+ with Chronic Conditions by Type of Condition, in Millions, 2012



Source: Medicare Current Beneficiary Survey, Access to Care file, 2012

*Includes rheumatoid and non-rheumatoid arthritis.

**Includes coronary artery disease, peripheral vascular disease, peripheral artery disease.

***Includes chronic lung disease, asthma, and chronic obstructive pulmonary disease (COPD).



Section 3: Post-Acute Care Market Overview

Post-Acute Care Market Overview

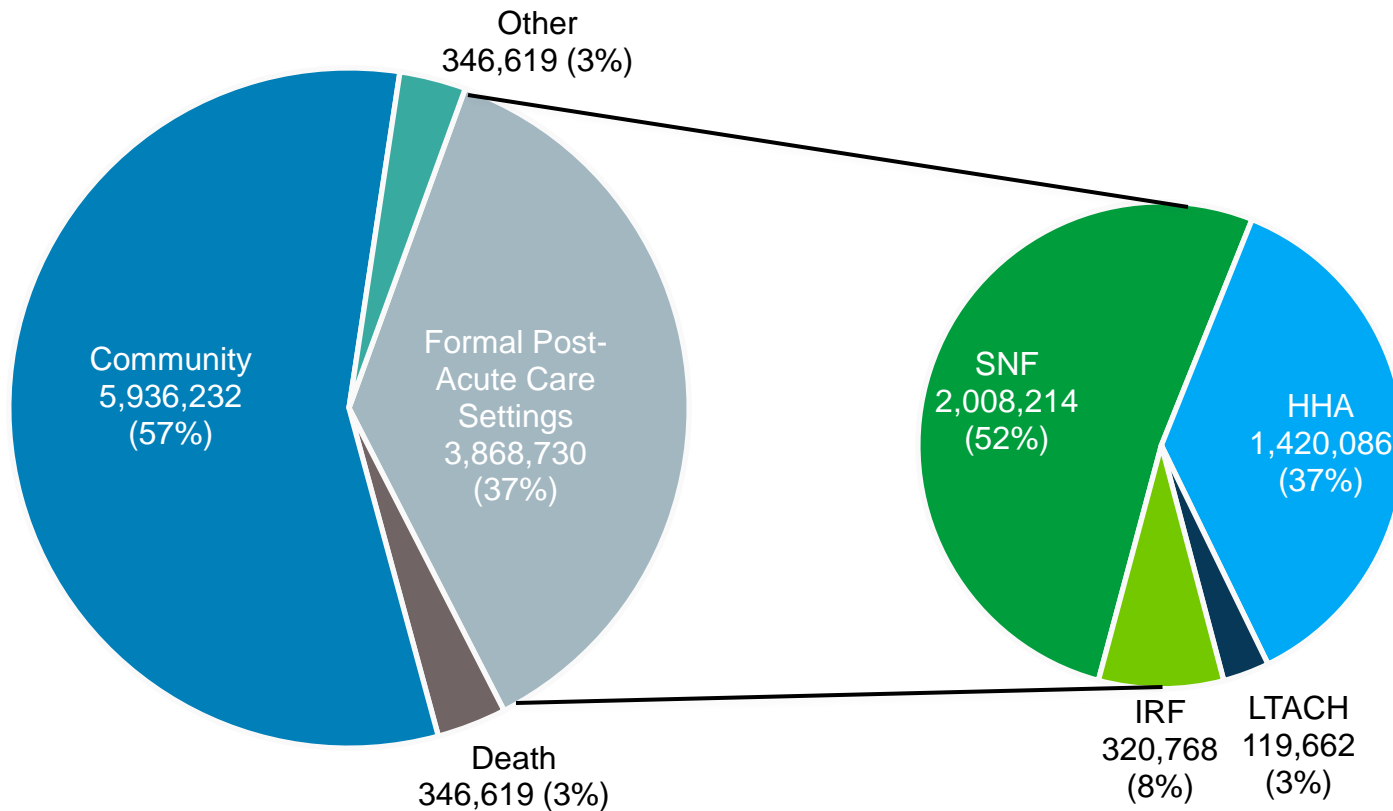
Chart 3.1: Total Medicare Post-acute Care Expenditures, Billions of Dollars, 2001-2012



Source: Medicare Payment Advisory Commission. A Data Book: Health Care Spending and the Medicare Program. June 2014

Post-Acute Care Market Overview

Chart 3.2: Initial Patient Destinations Following an Inpatient Hospital Stay for Medicare Beneficiaries, 2012



Source: Avalere Health, LLC analysis of Medicare Standard Analytic Files, 2012

Hospital: Short-Term Acute Care Hospital (STACH).

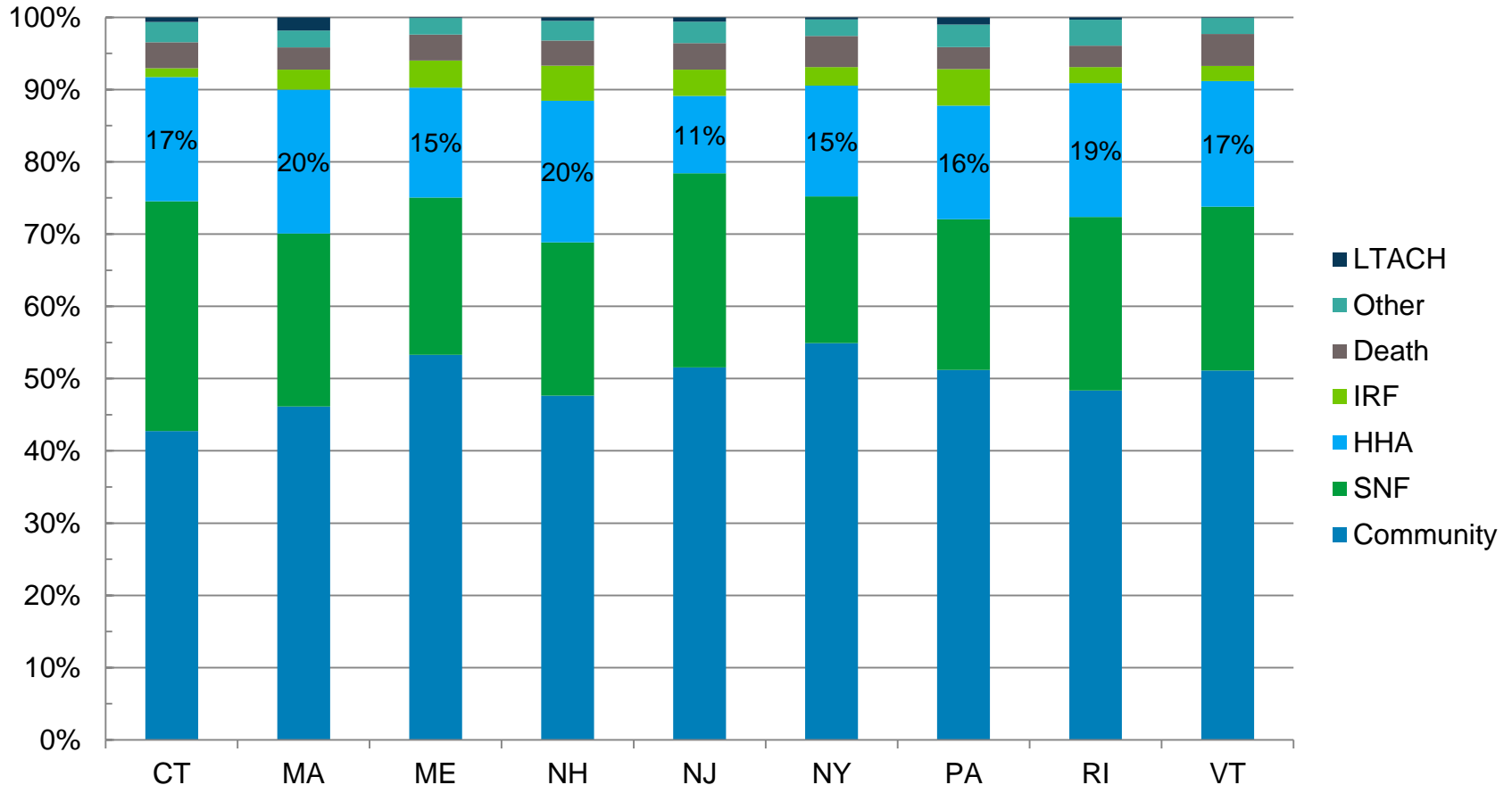
Community: Discharges to the community without skilled home health care; includes individuals living at home, assisted living facilities, and retirement communities.

Formal Post-Acute Care Settings: Settings designated as post-acute care by Medicare. Includes skilled nursing facilities (SNF), home health agencies (HHA), inpatient rehabilitation facilities (IRF), and long-term acute care hospitals (LTACH).

Other: Hospice, a different Inpatient Hospital, or other Inpatient Hospitals such as Inpatient Psychiatric Facilities

Post-Acute Care Market Overview

Chart 3.3: Initial Patient Destinations Following an Inpatient Hospital Stay for Medicare Beneficiaries in 2012, for States in Northeastern Region



Source: Avalere Health, LLC analysis of Medicare Standard Analytic Files, 2012

Note: U.S. Census Bureau defines which states are in the Northeast Region; includes CT, ME, MA, NH, RI, VT, NJ, NY, PA

Hospital: Short-Term Acute Care Hospital (STACH).

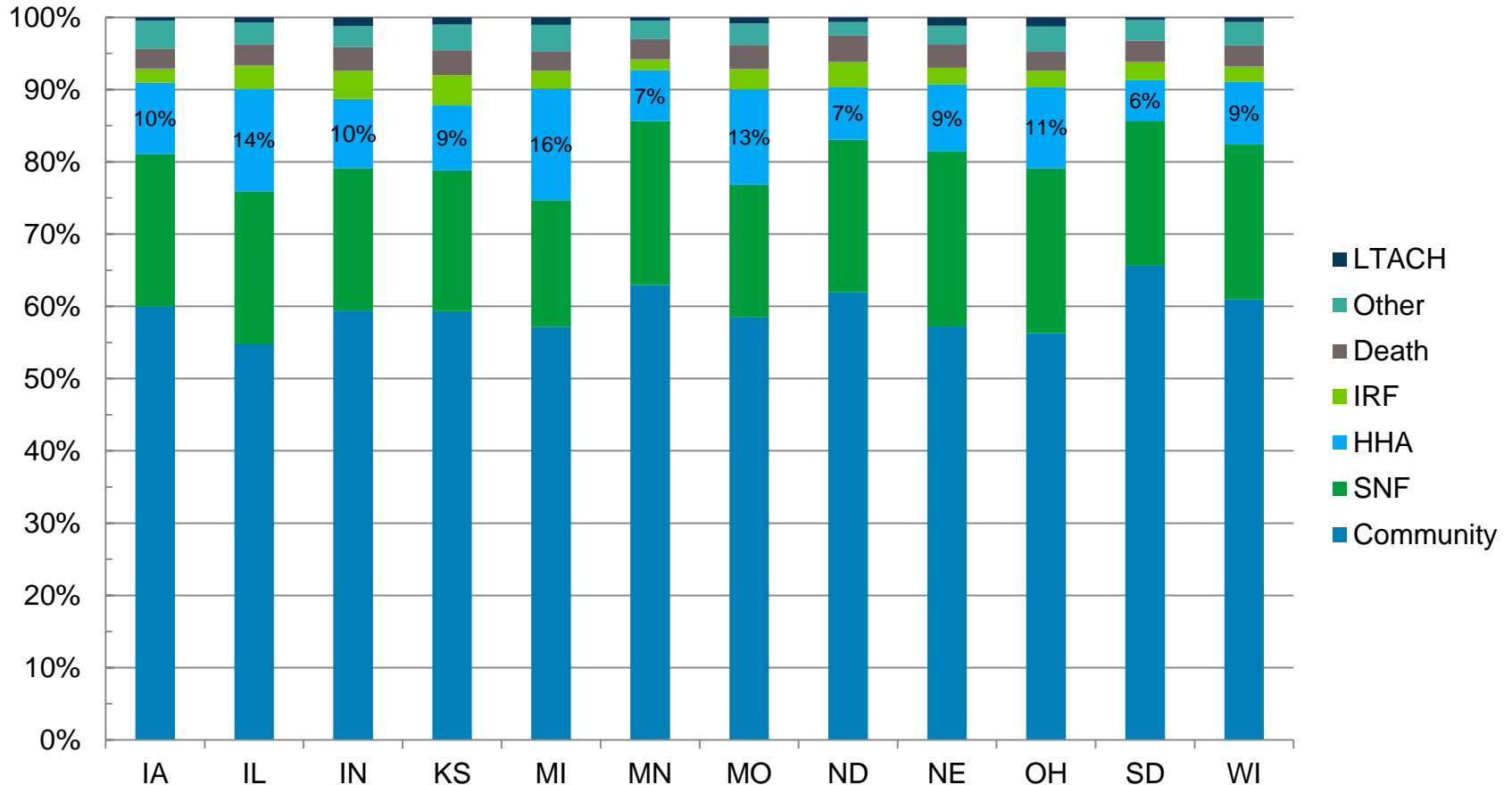
Community: Discharges to the community without skilled home health care; includes individuals living at home, assisted living facilities, and retirement communities.

Formal Post-Acute Care Settings: Settings designated as post-acute care by Medicare. Includes skilled nursing facilities (SNF), home health agencies (HHA), inpatient rehabilitation facilities (IRF), and long-term acute care hospitals (LTACH).

Other: Hospice, a different Inpatient Hospital, or other Inpatient Hospitals such as Inpatient Psychiatric Facilities.

Post-Acute Care Market Overview

Chart 3.4: Initial Patient Destinations Following an Inpatient Hospital Stay for Medicare Beneficiaries in 2012, for States in Midwestern Region



Source: Avalere Health, LLC analysis of Medicare Standard Analytic Files, 2012

Note: U.S. Census Bureau defines which states are in the Midwestern Region; includes IA, IL, IN, KS, MI, MN, MO, ND, NE, OH, SD, WI

Hospital: Short-Term Acute Care Hospital (STACH).

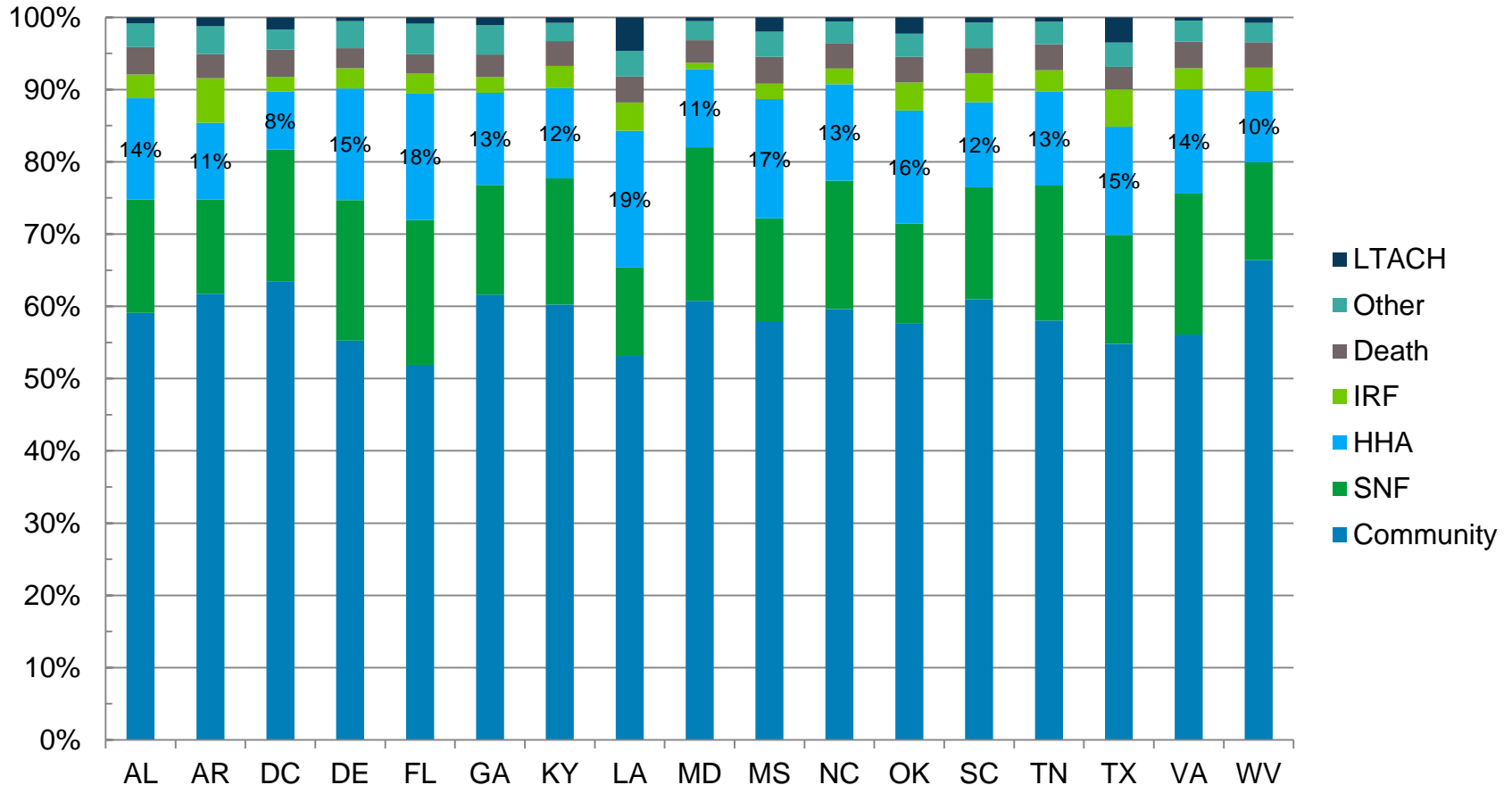
Community: Discharges to the community without skilled home health care; includes individuals living at home, assisted living facilities, and retirement communities.

Formal Post-Acute Care Settings: Settings designated as post-acute care by Medicare. Includes skilled nursing facilities (SNF), home health agencies (HHA), inpatient rehabilitation facilities (IRF), and long-term acute care hospitals (LTACH).

Other: Hospice, a different Inpatient Hospital, or other Inpatient Hospitals such as Inpatient Psychiatric Facilities.

Post-Acute Care Market Overview

Chart 3.5: Initial Patient Destinations Following an Inpatient Hospital Stay for Medicare Beneficiaries in 2012, for States in Southern Region



Source: Avalere Health, LLC analysis of Medicare Standard Analytic Files, 2012

Note: U.S. Census Bureau defines which states are in the Southern Region; includes AL, AR, DC, DE, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, VA, WV
 Hospital: Short-Term Acute Care Hospital (STACH).

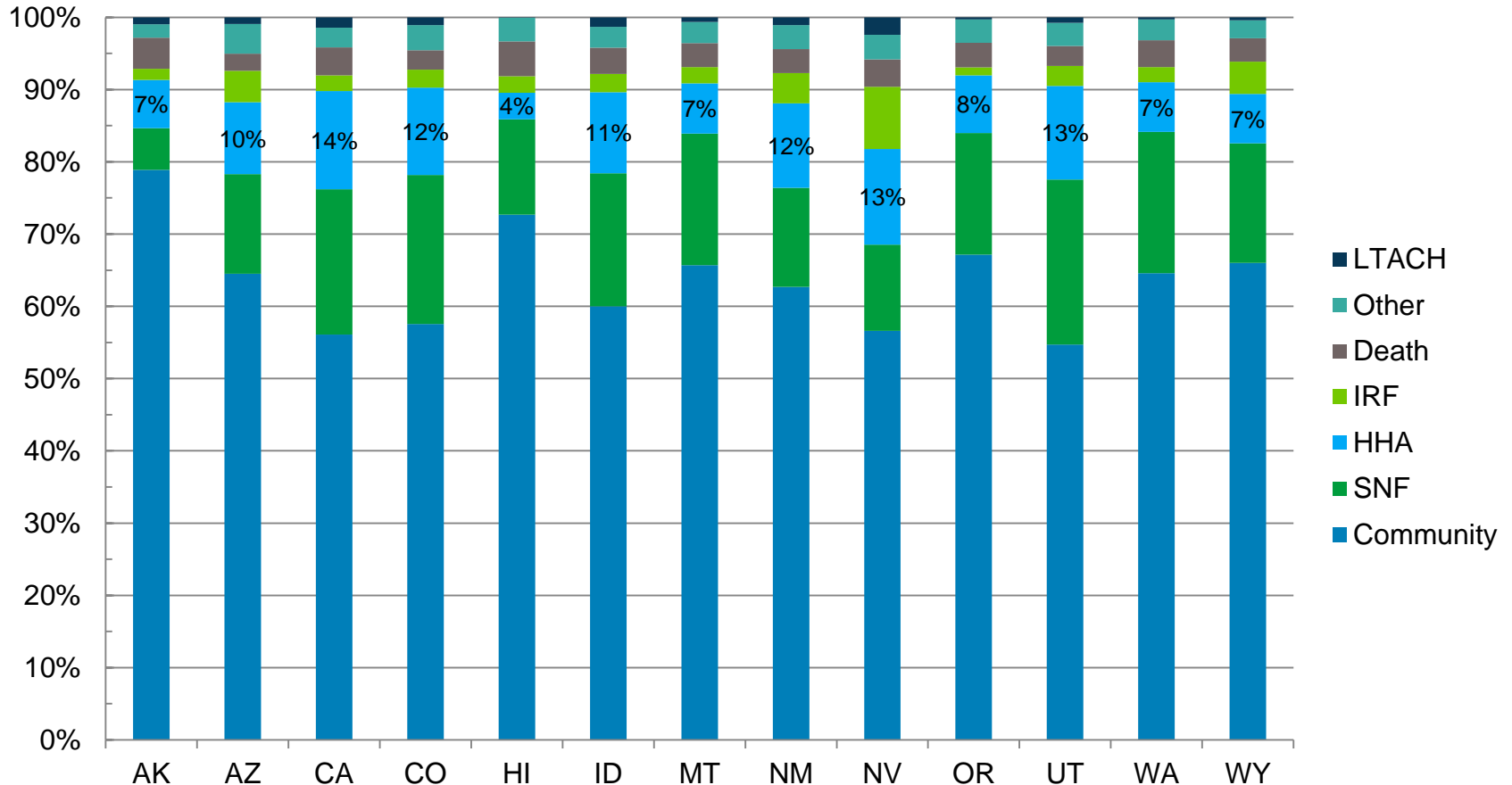
Community: Discharges to the community without skilled home health care; includes individuals living at home, assisted living facilities, and retirement communities.

Formal Post-Acute Care Settings: Settings designated as post-acute care by Medicare. Includes skilled nursing facilities (SNF), home health agencies (HHA), inpatient rehabilitation facilities (IRF), and long-term acute care hospitals (LTACH).

Other: Hospice, a different Inpatient Hospital, or other Inpatient Hospitals such as Inpatient Psychiatric Facilities.

Post-Acute Care Market Overview

Chart 3.6: Initial Patient Destinations Following an Inpatient Hospital Stay for Medicare Beneficiaries in 2012, for States in Western Region



Source: Avalere Health, LLC analysis of Medicare Standard Analytic Files, 2012

Note: U.S. Census Bureau defines which states are in the Western Region; includes AK, AZ, CA, CO, HI, ID, MT, NM, NV, OR, UT, WA, WY

Hospital: Short-Term Acute Care Hospital (STACH).

Community: Discharges to the community without skilled home health care; includes individuals living at home, assisted living facilities, and retirement communities.

Formal Post-Acute Care Settings: Settings designated as post-acute care by Medicare. Includes skilled nursing facilities (SNF), home health agencies (HHA), inpatient rehabilitation facilities (IRF), and long-term acute care hospitals (LTACH).

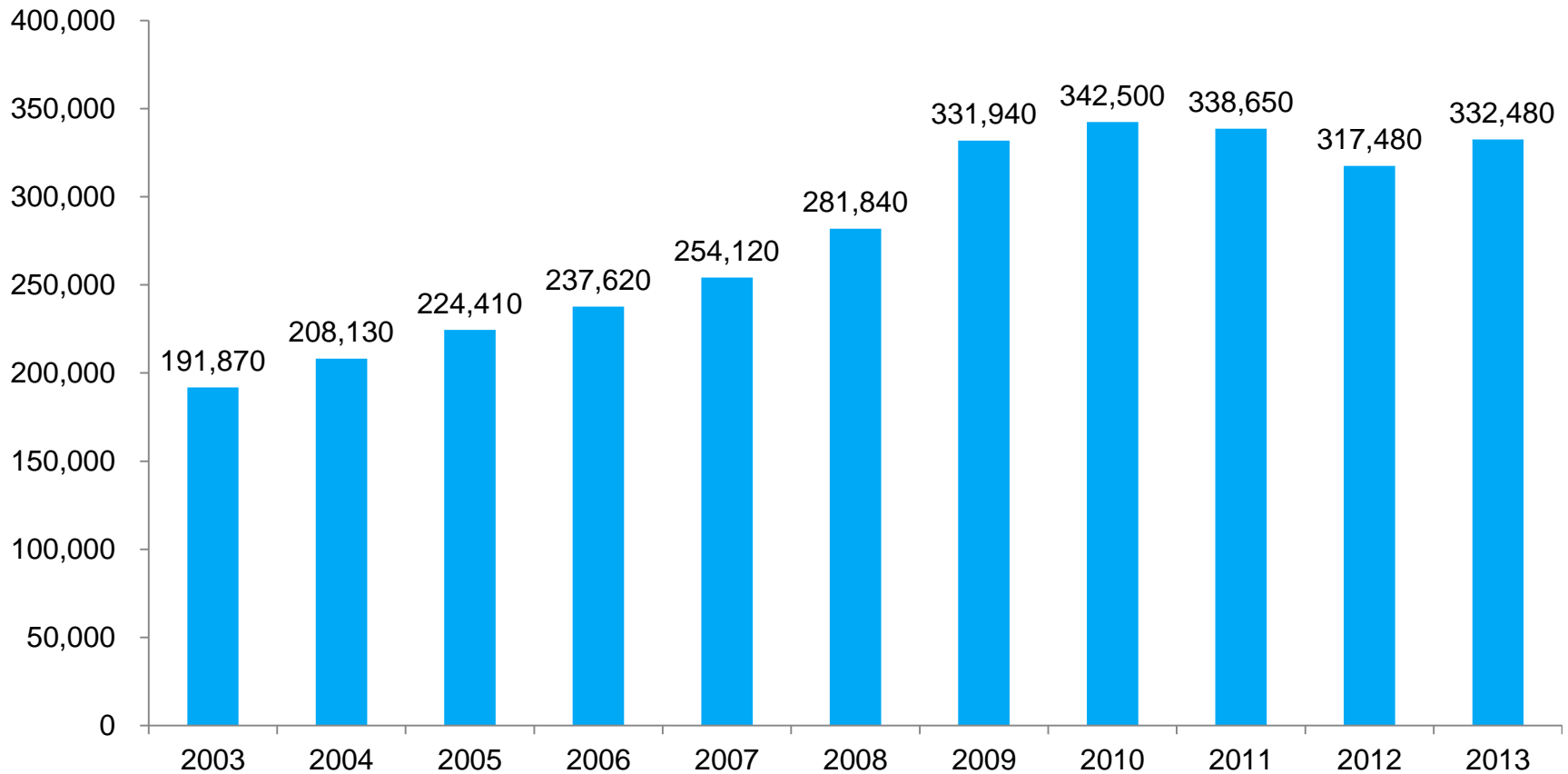
Other: Hospice, a different Inpatient Hospital, or other Inpatient Hospitals such as Inpatient Psychiatric Facilities.



Section 4: Home Health Care Services Industry Workforce

Home Health Care Services Industry Workforce

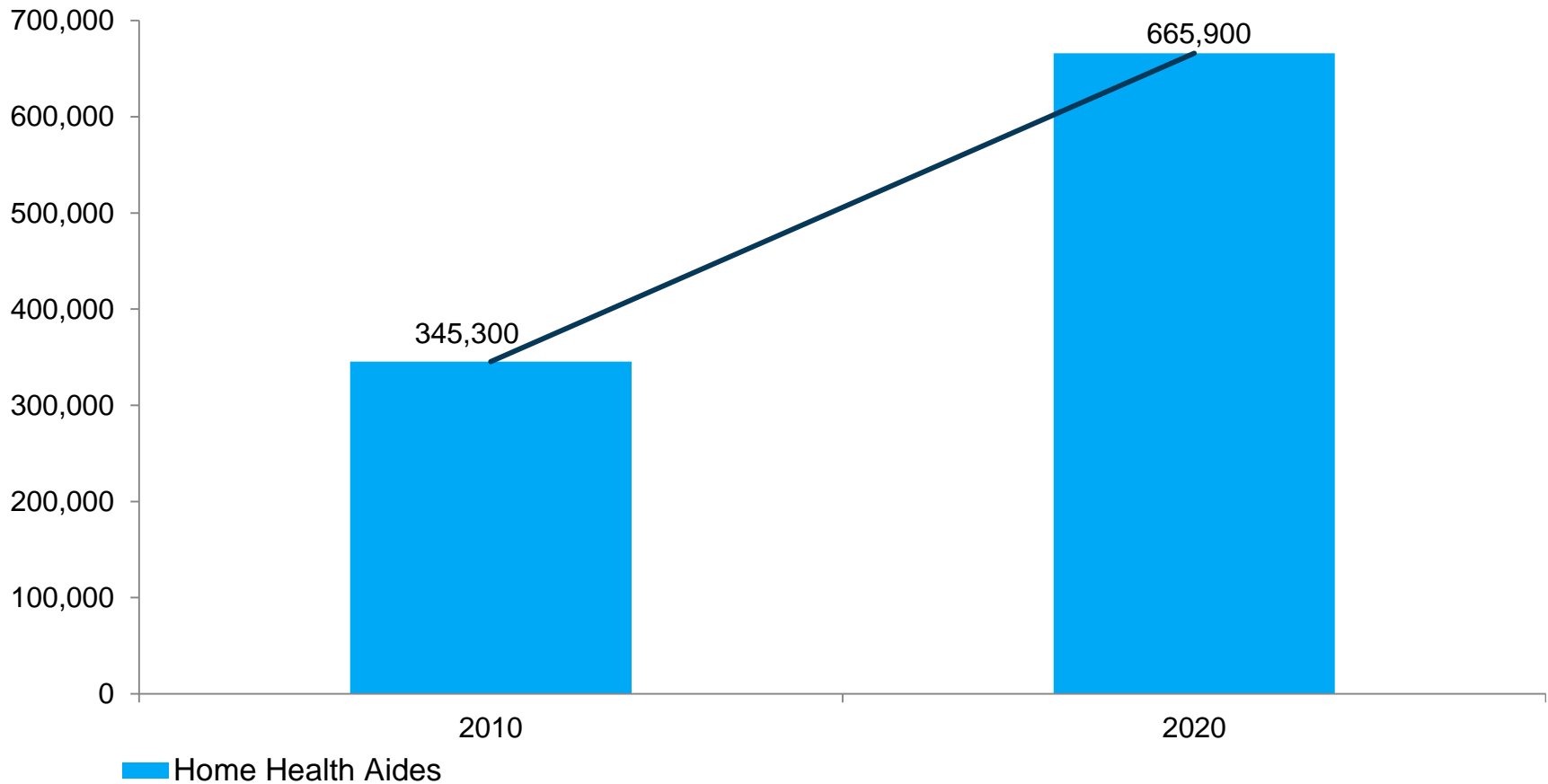
Chart 4.1: Total Number of Home Health Aides Employed in the Home Health Care Services Industry, 2003-2013



Source: Bureau of Labor Statistics, U.S. Department of Commerce

Home Health Care Services Industry Workforce

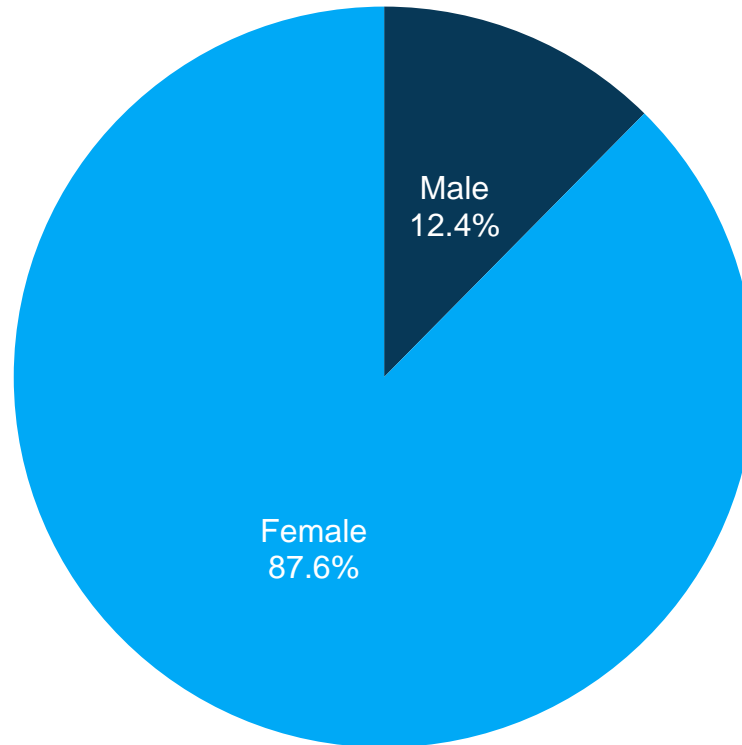
Chart 4.2: Number of Home Health Aides Employed in the Home Health Care Services Industry, 2010 and 2020 (Projected)



Source: Bureau of Labor Statistics Employment Projections program, U.S. Department of Commerce

Home Health Care Services Industry Workforce

Chart 4.3: Breakdown of Persons Employed in Home Health Care Services by Gender, 2012



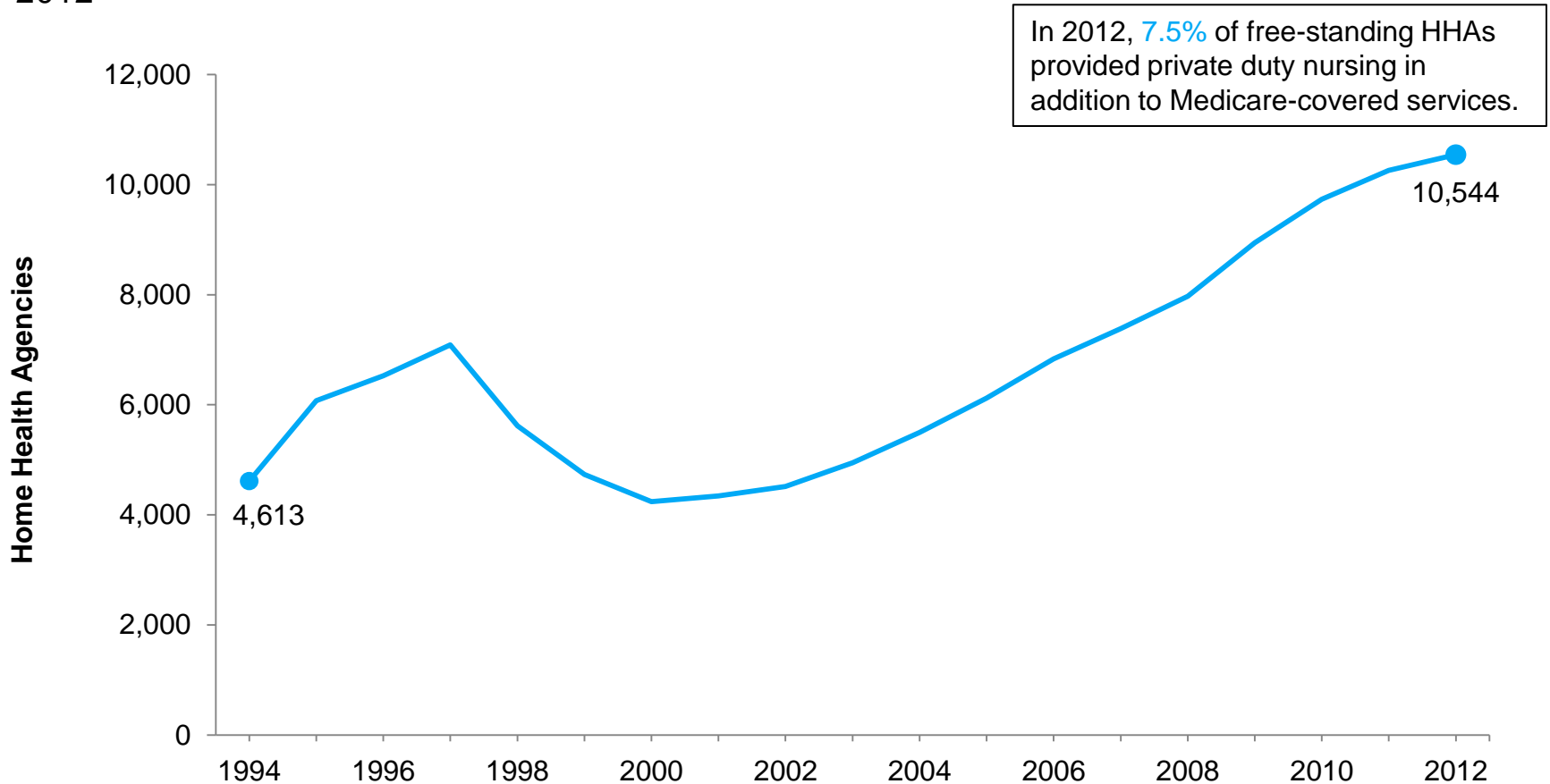
Source: Bureau of Labor Statistics, Labor Force Statistics from the Current Population Survey, 2012



Section 5: Organizational Trends in Home Health

Organizational Trends in Home Health

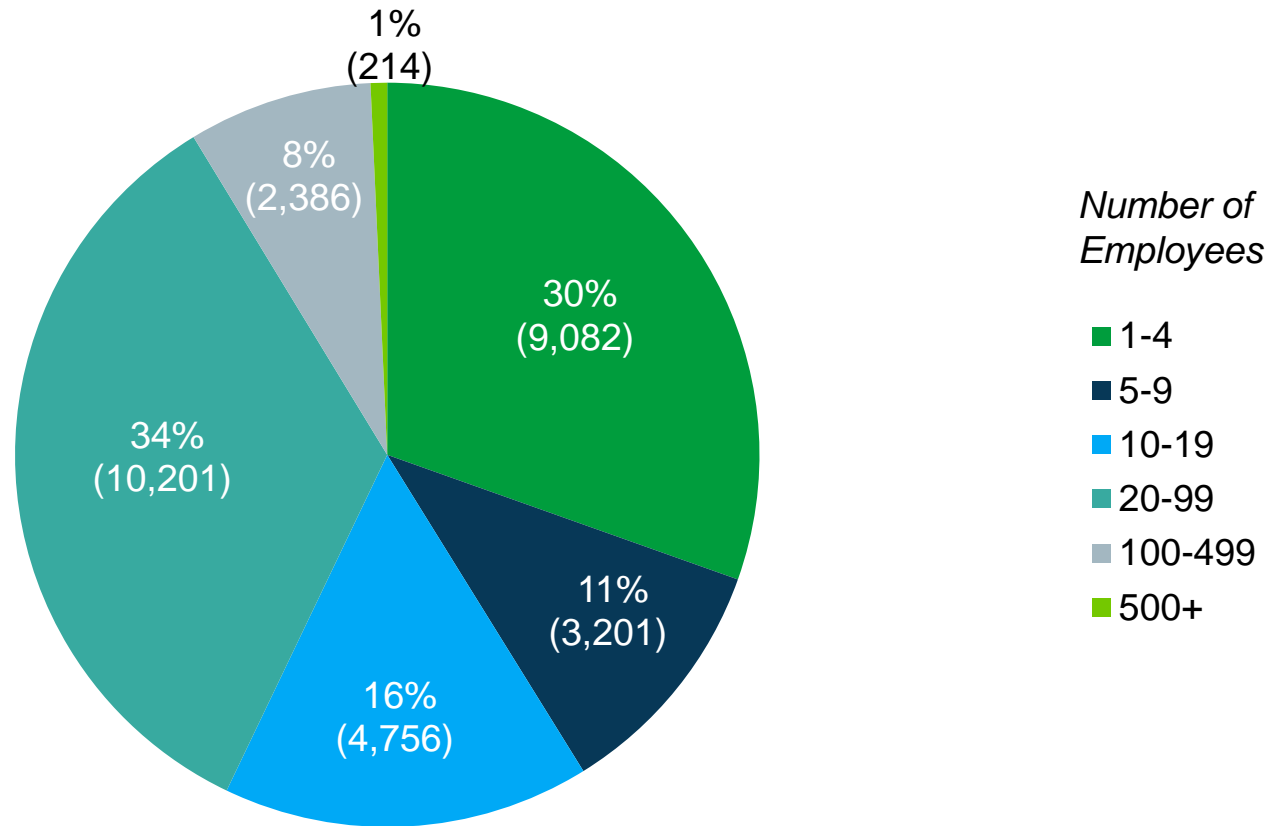
Chart 5.1: Number of Medicare-Certified Free-Standing Home Health Agencies (HHAs), 1994-2012



Source: Medicare Cost Reports from the Centers for Medicare and Medicaid Services

Organizational Trends in Home Health

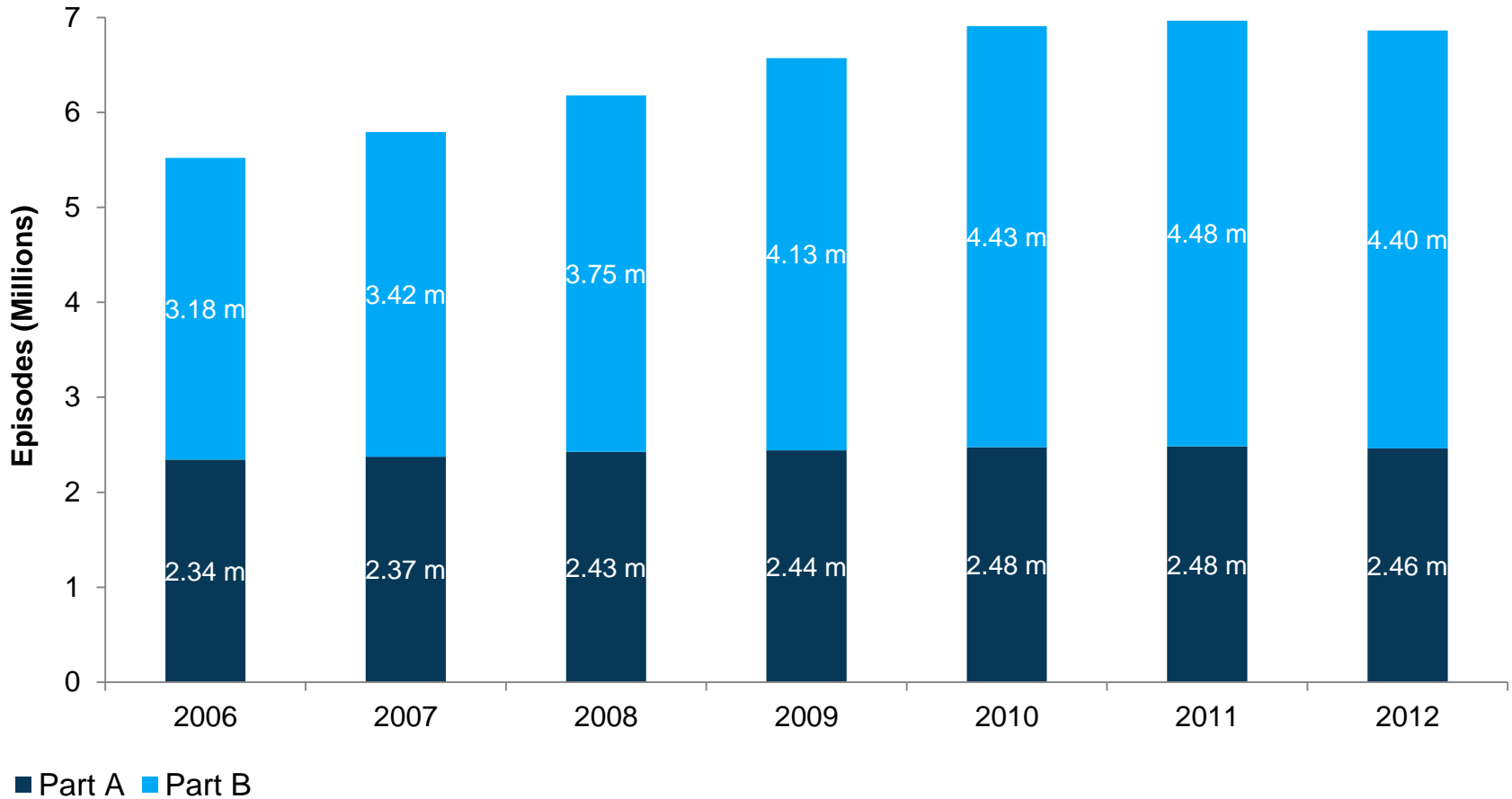
Chart 5.2: Percentage (and Number) of Home Health Care Services Firms by Number of Employees, 2012



Source: Census Bureau. 2012 County Business Patterns. Home Health Care Services firms are identified by NAICS code 621610

Organizational Trends in Home Health

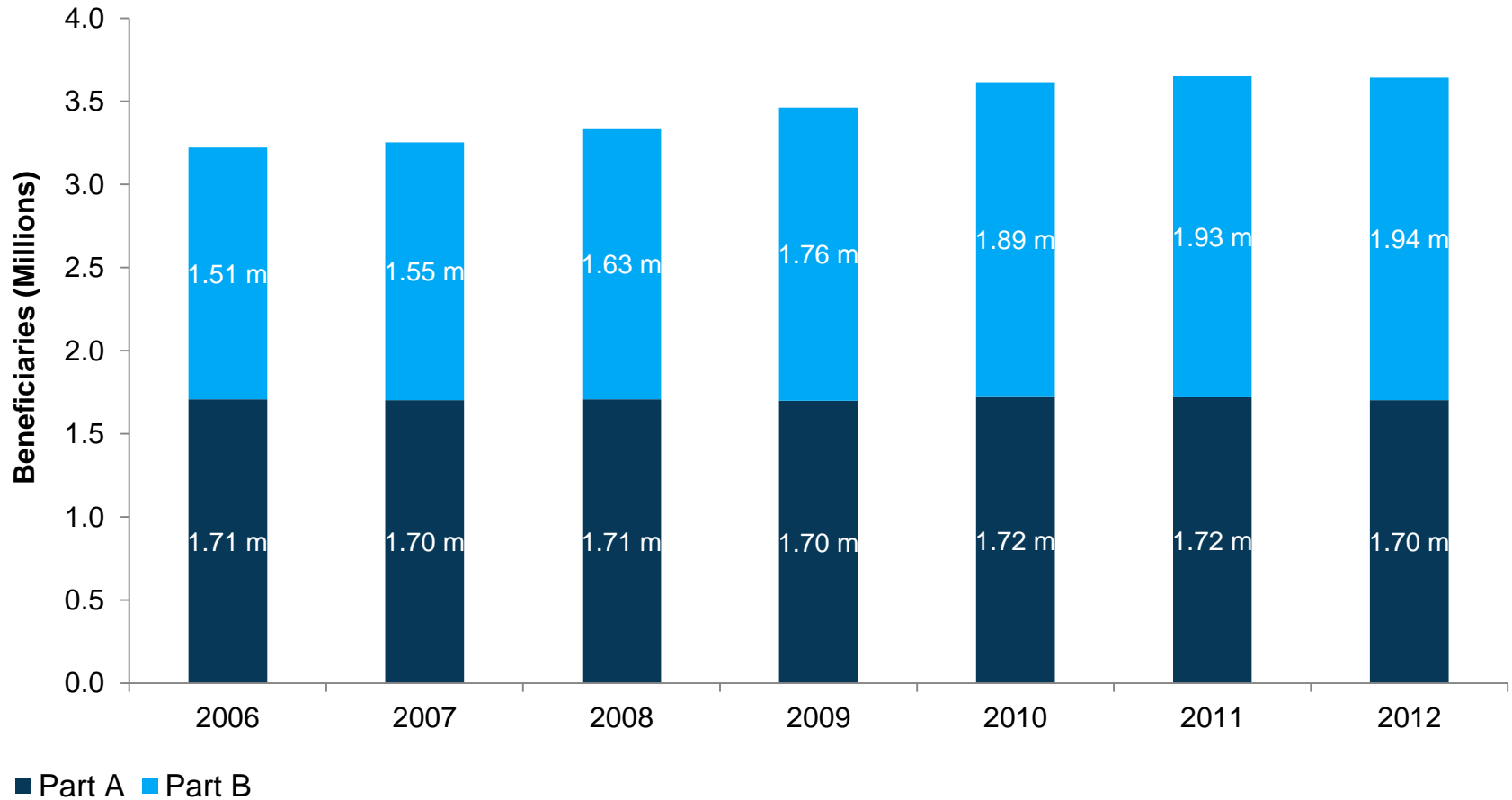
Chart 5.3: Number of Medicare Part A and Part B Home Health Episodes, in Millions, 2006-2012



Source: Avalere Health, LLC analysis of Medicare Standard Analytic Files, 2006 - 2012

Organizational Trends in Home Health

Chart 5.4: Number of Medicare Part A and Part B Beneficiaries with a Home Health Episode, in Millions, 2006-2012



Source: Avalere Health, LLC analysis of Medicare Standard Analytic Files, 2006 - 2012

Note: Beneficiaries are double-counted if they had both a Part A and a Part B home health episode during the year.

Organizational Trends in Home Health

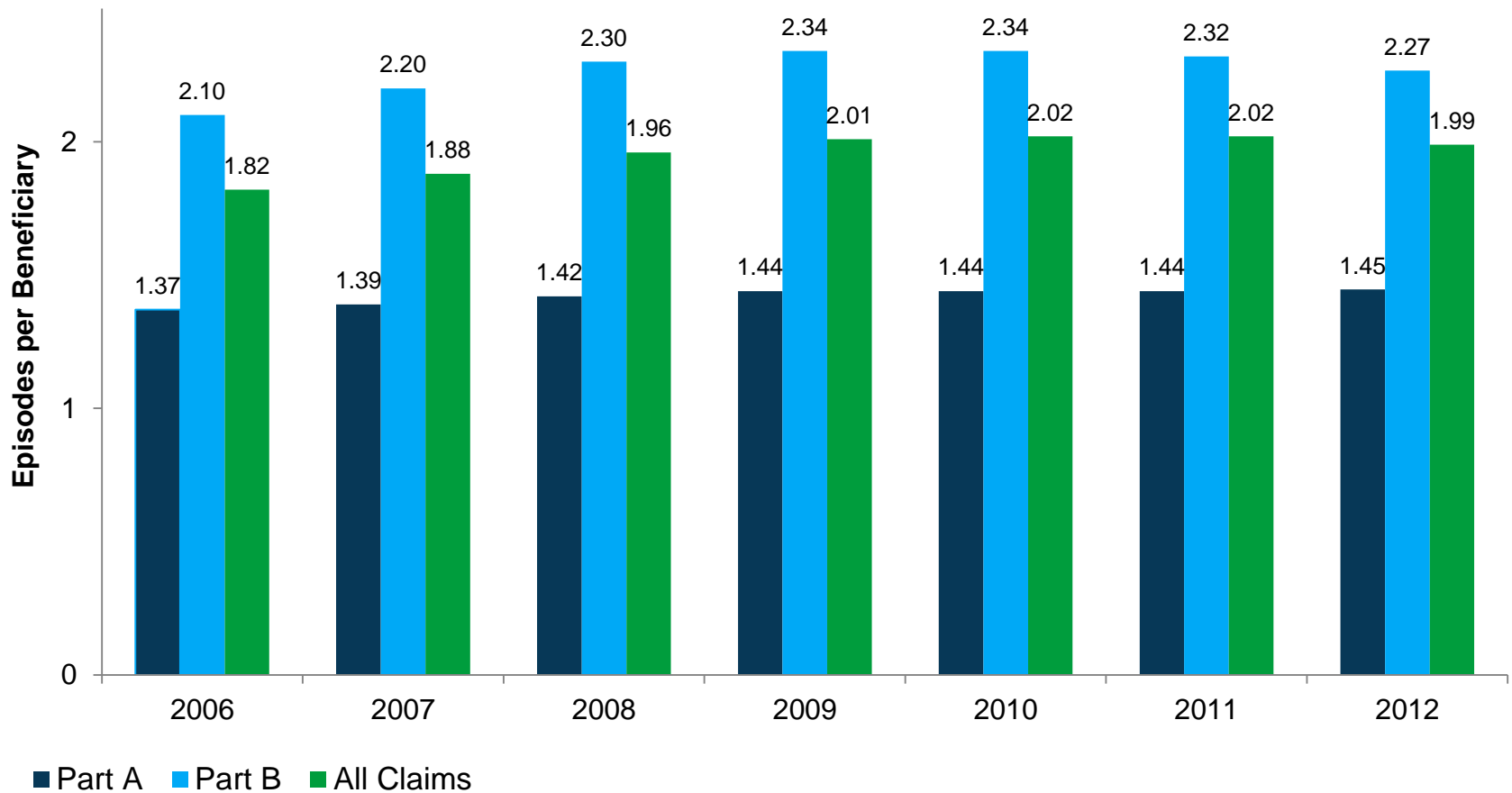
Table 5.5: Number of Medicare Beneficiaries with A Home Health Episode, by State, 2012

State	Number of Beneficiaries	State	Number of Beneficiaries	State	Number of Beneficiaries
Alabama	71,196	Kentucky	61,028	North Dakota	4,158
Alaska	2,461	Louisiana	74,849	Ohio	116,227
Arizona	37,231	Maine	19,527	Oklahoma	65,697
Arkansas	35,580	Maryland	60,672	Oregon	22,009
California	283,003	Massachusetts	107,248	Pennsylvania	143,824
Colorado	33,509	Michigan	153,295	Rhode Island	12,989
Connecticut	51,710	Minnesota	33,484	South Carolina	52,145
Delaware	12,025	Mississippi	56,183	South Dakota	4,562
District of Columbia	6,226	Missouri	67,053	Tennessee	81,933
Florida	343,558	Montana	6,664	Texas	350,774
Georgia	86,930	Nebraska	14,975	Utah	19,069
Hawaii	3,019	Nevada	23,683	Vermont	9,658
Idaho	12,001	New Hampshire	20,428	Virginia	90,694
Illinois	194,653	New Jersey	97,313	Washington	40,868
Indiana	62,052	New Mexico	16,664	West Virginia	22,566
Iowa	25,275	New York	183,594	Wisconsin	35,613
Kansas	24,298	North Carolina	107,398	Wyoming	3,670
				Total U.S.	3,479,383

Source: Avalere Health, LLC analysis of Medicare Standard Analytic Files, 2012

Organizational Trends in Home Health

Chart 5.6: Number of Home Health Episodes per Medicare Home Health User by Part A, Part B, and all Claims, 2006-2012

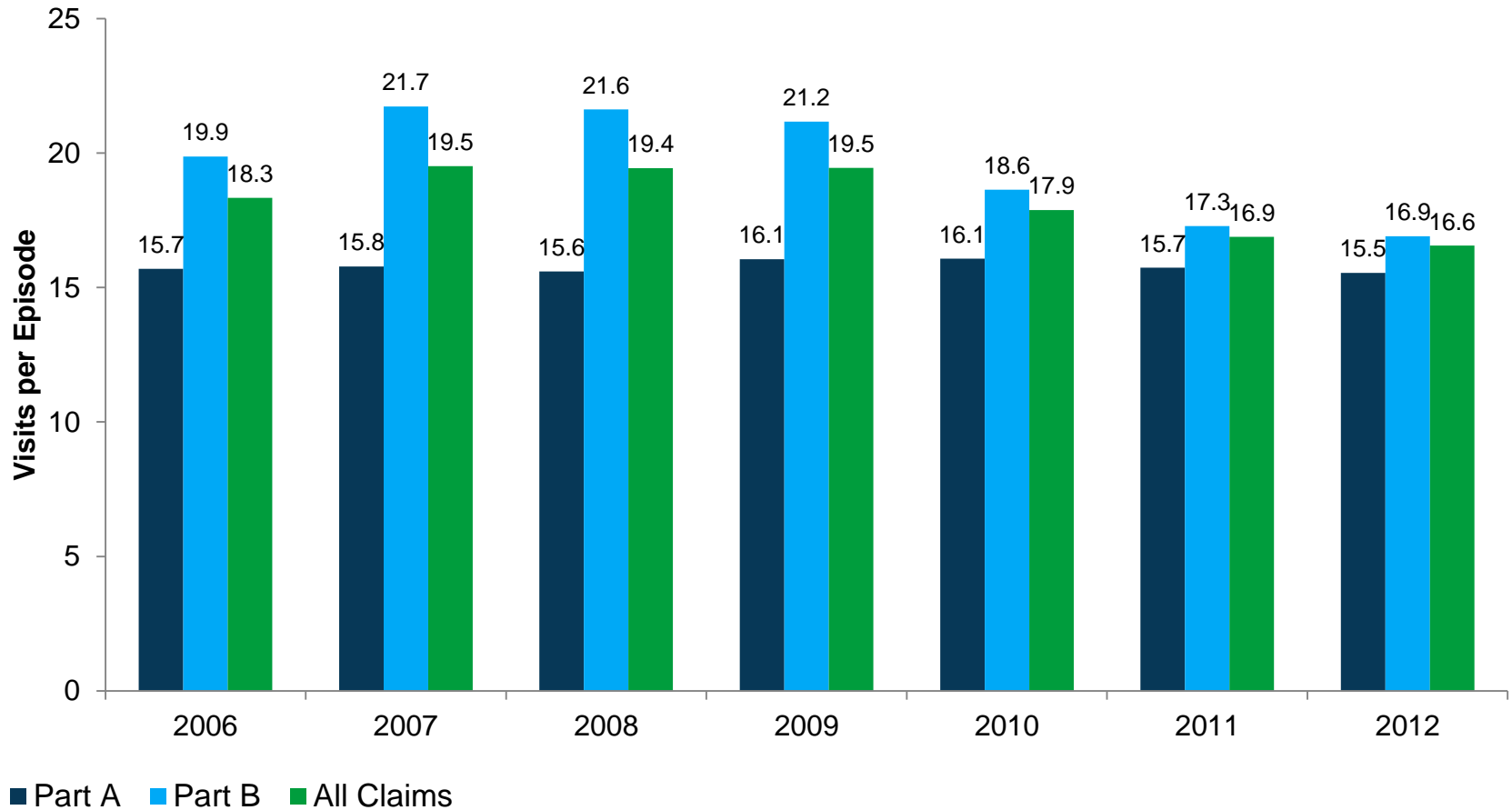


Source: Avalere Health, LLC analysis of Medicare Standard Analytic Files, 2006 – 2012

Note: These data reflect the number of home health episodes for Medicare beneficiaries with at least one Part A or Part B home health episode.

Organizational Trends in Home Health

Chart 5.7: Number of Home Health Visits per Episode by Part A, Part B, and all Claims, 2006-2012



Source: Avalere Health, LLC analysis of Medicare Standard Analytic Files, 2006 – 2012



Section 6: Economic Contribution of Home Health Agencies

Economic Contribution of Home Health Agencies

Table 6.1: Impact of Home Health on Employment, by State, 2012

State	Estimated Number of HH Employees ¹	Multiplier for Employment ²	Estimated Jobs Created by HH Industry ³	State	Estimated Number of HH Employees	Multiplier for Employment	Estimated Jobs Created by HH Industry
Alabama	11,825	1.5991	18,909	Montana	2,644	1.3420	3,548
Alaska	1,992	1.3092	2,608	Nebraska	3,076	1.3658	4,201
Arizona	21,812	1.4557	31,752	Nevada	5,174	1.5271	7,901
Arkansas	6,507	1.3464	8,761	New Hampshire	4,067	1.4778	6,010
California	69,734	1.5353	107,063	New Jersey	38,042	1.4886	56,629
Colorado	15,163	1.4976	22,708	New Mexico	11,965	1.3573	16,240
Connecticut	13,948	1.4889	20,767	New York	126,344	1.3856	175,062
Delaware	3,094	1.4677	4,541	North Carolina	40,106	1.4688	58,908
D.C.	4,875	1.1420	5,567	North Dakota	559	1.2881	720
Florida	66,308	1.6030	106,292	Ohio	59,974	1.4632	87,754
Georgia	22,200	1.6327	36,246	Oklahoma	19,344	1.4350	27,759
Hawaii	2,900	1.3753	3,988	Oregon	4,329	1.5238	6,597
Idaho	6,547	1.3459	8,812	Pennsylvania	40,566	1.6358	66,358
Illinois	39,174	1.5804	61,911	Rhode Island	5,155	1.4271	7,357
Indiana	19,163	1.5117	28,969	South Carolina	10,618	1.5086	16,018
Iowa	7,210	1.3389	9,653	South Dakota	974	1.2400	1,208
Kansas	10,337	1.3218	13,663	Tennessee	17,029	1.6312	27,778
Kentucky	8,692	1.5957	13,870	Texas	244,853	1.4728	360,619
Louisiana	24,095	1.5316	36,904	Utah	6,826	1.6727	11,418
Maine	4,000	1.4513	5,805	Vermont	2,156	1.3632	2,939
Maryland	14,424	1.5266	22,020	Virginia	25,461	1.4182	36,109
Massachusetts	32,971	1.5262	50,320	Washington	9,680	1.5287	14,798
Michigan	36,902	1.5259	56,309	West Virginia	7,753	1.3639	10,574
Minnesota	19,824	1.4104	27,960	Wisconsin	13,643	1.4272	19,471
Mississippi	7,432	1.5238	11,325	Wyoming	561	1.2931	725
Missouri	18,949	1.5154	28,715	Total U.S.	1,190,977	N/A	1,772,140

1: Quarterly Census of Employment and Wages (QCEW) collected by the U.S. Bureau of Labor Statistics

2. U.S. Bureau of Economic Analysis multipliers

3. Avalere calculation

Note: The QCEW collects employment data monthly. All states report employment figures on privately owned home health agencies, including for-profit and non-profit organizations. Alabama, Arkansas, Iowa, Minnesota, Missouri, North Carolina, Ohio and Virginia submit employment figures for their government-owned facilities, which are included in this analysis. The QWEC does not include jobs for HHA contractors, but the multiplier is intended to account for such jobs.

Economic Contribution of Home Health Agencies

Table 6.2: Impact of Home Health on Labor Income, by State, 2012

State	Estimated Home Health Total Wages ¹	Multiplier for Earnings ²	Estimated Impact of HH Payroll on Labor Income ³	State	Estimated Home Health Total Wages	Multiplier for Earnings	Estimated Impact of HH Payroll on Labor Income
Alabama	\$436,249,968	1.4907	\$650,317,827	Montana	\$60,128,858	1.3740	\$82,617,051
Alaska	\$47,639,664	1.3685	\$65,194,880	Nebraska	\$93,981,595	1.3471	\$126,602,607
Arizona	\$597,082,306	1.5636	\$933,597,894	Nevada	\$212,126,377	1.4621	\$310,149,976
Arkansas	\$163,918,309	1.4149	\$231,928,015	New Hampshire	\$138,519,421	1.5361	\$212,779,683
California	\$2,322,196,911	1.6406	\$3,809,796,252	New Jersey	\$1,024,503,672	1.6215	\$1,661,232,704
Colorado	\$430,247,447	1.6524	\$710,940,881	New Mexico	\$230,880,251	1.4231	\$328,565,685
Connecticut	\$521,882,287	1.5237	\$795,192,041	New York	\$3,501,267,804	1.4943	\$5,231,944,480
Delaware	\$120,338,653	1.4332	\$172,469,357	North Carolina	\$927,745,533	1.6039	\$1,488,011,060
D.C.	\$123,861,491	1.1792	\$146,057,470	North Dakota	\$18,651,847	1.3203	\$24,626,034
Florida	\$2,341,432,911	1.5944	\$3,733,180,633	Ohio	\$1,422,903,654	1.6205	\$2,305,815,371
Georgia	\$704,672,677	1.6417	\$1,156,861,134	Oklahoma	\$468,616,715	1.4980	\$701,987,839
Hawaii	\$76,216,986	1.4868	\$113,319,415	Oregon	\$131,761,925	1.5263	\$201,108,226
Idaho	\$120,148,107	1.3857	\$166,489,232	Pennsylvania	\$1,490,599,246	1.6241	\$2,420,882,235
Illinois	\$1,176,482,481	1.6827	\$1,979,667,071	Rhode Island	\$145,296,138	1.5039	\$218,510,862
Indiana	\$508,936,775	1.5215	\$774,347,303	South Carolina	\$288,136,620	1.5440	\$444,882,941
Iowa	\$225,826,118	1.3544	\$305,858,894	South Dakota	\$21,373,225	1.2979	\$27,740,309
Kansas	\$253,647,042	1.3848	\$351,250,424	Tennessee	\$614,765,882	1.6075	\$988,236,155
Kentucky	\$340,275,137	1.5072	\$512,862,686	Texas	\$4,713,039,276	1.6640	\$7,842,497,355
Louisiana	\$708,008,650	1.4835	\$1,050,330,832	Utah	\$207,837,401	1.6235	\$337,424,021
Maine	\$117,807,967	1.4935	\$175,946,199	Vermont	\$65,441,224	1.4040	\$91,879,478
Maryland	\$531,130,335	1.5331	\$814,275,917	Virginia	\$674,562,410	1.5269	\$1,029,989,344
Massachusetts	\$1,190,816,183	1.5822	\$1,884,109,365	Washington	\$328,983,306	1.5315	\$503,837,933
Michigan	\$1,114,374,359	1.5796	\$1,760,265,737	West Virginia	\$190,737,802	1.3902	\$265,163,692
Minnesota	\$490,686,657	1.5593	\$765,127,704	Wisconsin	\$338,386,654	1.5223	\$515,126,003
Mississippi	\$289,088,566	1.4226	\$411,257,394	Wyoming	\$16,287,638	1.2900	\$21,011,053
Missouri	\$543,425,189	1.5758	\$856,329,413	Total U.S.	\$32,822,927,650	N/A	\$51,709,596,070

1: Quarterly Census of Employment and Wages (QCEW) collected by the U.S. Bureau of Labor Statistics

2. U.S. Bureau of Economic Analysis multipliers

3. Avalere calculation

Note: The QCEW collects wage data quarterly. All states report employment figures on privately owned home health agencies, including for-profit and non-profit organizations. Alabama, Arkansas, Iowa, Minnesota, Missouri, North Carolina, Ohio and Virginia submit wage data for their government-owned facilities, which are included in this analysis. The QWEC does not include wage data for HHA contractors, but the multiplier is intended to account for such wages.

Economic Contribution of Home Health Agencies

Table 6.3: Impact of Home Health on Output, by State, 2012

State	Estimated Home Health Expenditures ¹	Multiplier for Output ²	Estimated Impact of HH Spending on Output ³	State	Estimated Home Health Expenditures	Multiplier for Output	Estimated Impact of HH Spending on Output
Alabama	\$575,332,769	2.007	\$1,154,692,867	Montana	\$39,740,319	1.7662	\$70,189,351
Alaska	\$1,478,030,114	1.7811	\$2,632,519,436	Nebraska	\$101,061,887	1.7286	\$174,695,578
Arizona	\$506,332,662	2.1218	\$1,074,336,642	Nevada	\$1,418,870,663	1.9412	\$2,754,311,731
Arkansas	\$282,995,371	1.8661	\$528,097,662	New Hampshire	\$180,325,932	2.0647	\$372,318,952
California	\$1,879,238,301	2.3116	\$4,344,047,257	New Jersey	\$398,486,834	2.29	\$912,534,850
Colorado	\$1,595,673,704	2.3194	\$3,701,005,589	New Mexico	\$121,641,305	1.8458	\$224,525,521
Connecticut	\$591,271,017	2.0916	\$1,236,702,459	New York	\$2,501,656,083	2.0703	\$5,179,178,589
Delaware	\$138,743,760	1.8907	\$262,322,827	North Carolina	\$649,050,987	2.2365	\$1,451,602,532
D.C.	\$140,398,450	1.2841	\$180,285,650	North Dakota	\$12,197,357	1.6653	\$20,312,259
Florida	\$2,629,719,933	2.181	\$5,735,419,174	Ohio	\$2,340,045,680	2.2747	\$5,322,901,908
Georgia	\$361,308,520	2.3034	\$832,238,045	Oklahoma	\$497,554,899	2.0018	\$996,005,397
Hawaii	\$23,980,038	1.9823	\$47,535,629	Oregon	\$99,183,900	2.0696	\$205,270,999
Idaho	\$59,988,025	1.7761	\$106,544,731	Pennsylvania	\$1,210,334,014	2.2799	\$2,759,440,519
Illinois	\$1,644,950,089	2.3944	\$3,938,668,493	Rhode Island	\$132,651,154	2.0158	\$267,398,196
Indiana	\$423,708,216	2.0867	\$884,151,934	South Carolina	\$152,315,815	2.1341	\$325,057,181
Iowa	\$745,935,964	1.7514	\$1,306,432,247	South Dakota	\$21,386,363	1.6396	\$35,065,081
Kansas	\$176,422,940	1.8267	\$322,271,784	Tennessee	\$594,706,480	2.2548	\$1,340,944,171
Kentucky	\$152,146,869	2.0484	\$311,657,646	Texas	\$3,872,872,980	2.3735	\$9,192,264,018
Louisiana	\$2,165,410,389	1.959	\$4,242,038,952	Utah	\$245,454,128	2.2794	\$559,488,139
Maine	\$191,300,245	2.0019	\$382,963,960	Vermont	\$102,729,278	1.8276	\$187,748,028
Maryland	\$529,775,541	2.0603	\$1,091,496,547	Virginia	\$571,276,012	2.086	\$1,191,681,761
Massachusetts	\$2,350,390,570	2.1786	\$5,120,560,896	Washington	\$232,653,222	2.095	\$487,408,500
Michigan	\$1,299,160,885	2.1743	\$2,824,765,512	West Virginia	\$67,053,715	1.8032	\$120,911,259
Minnesota	\$335,433,077	2.1534	\$722,321,588	Wisconsin	\$310,368,143	2.0534	\$637,309,945
Mississippi	\$587,483,856	1.8702	\$1,098,712,307	Wyoming	\$16,690,702	1.6201	\$27,040,606
Missouri	\$465,256,156	2.179	\$1,013,793,164	Total U.S.	\$37,220,695,313	N/A	\$79,911,188,073

1: CMS Medicare 2012 Cost Reports for Home Health Agencies

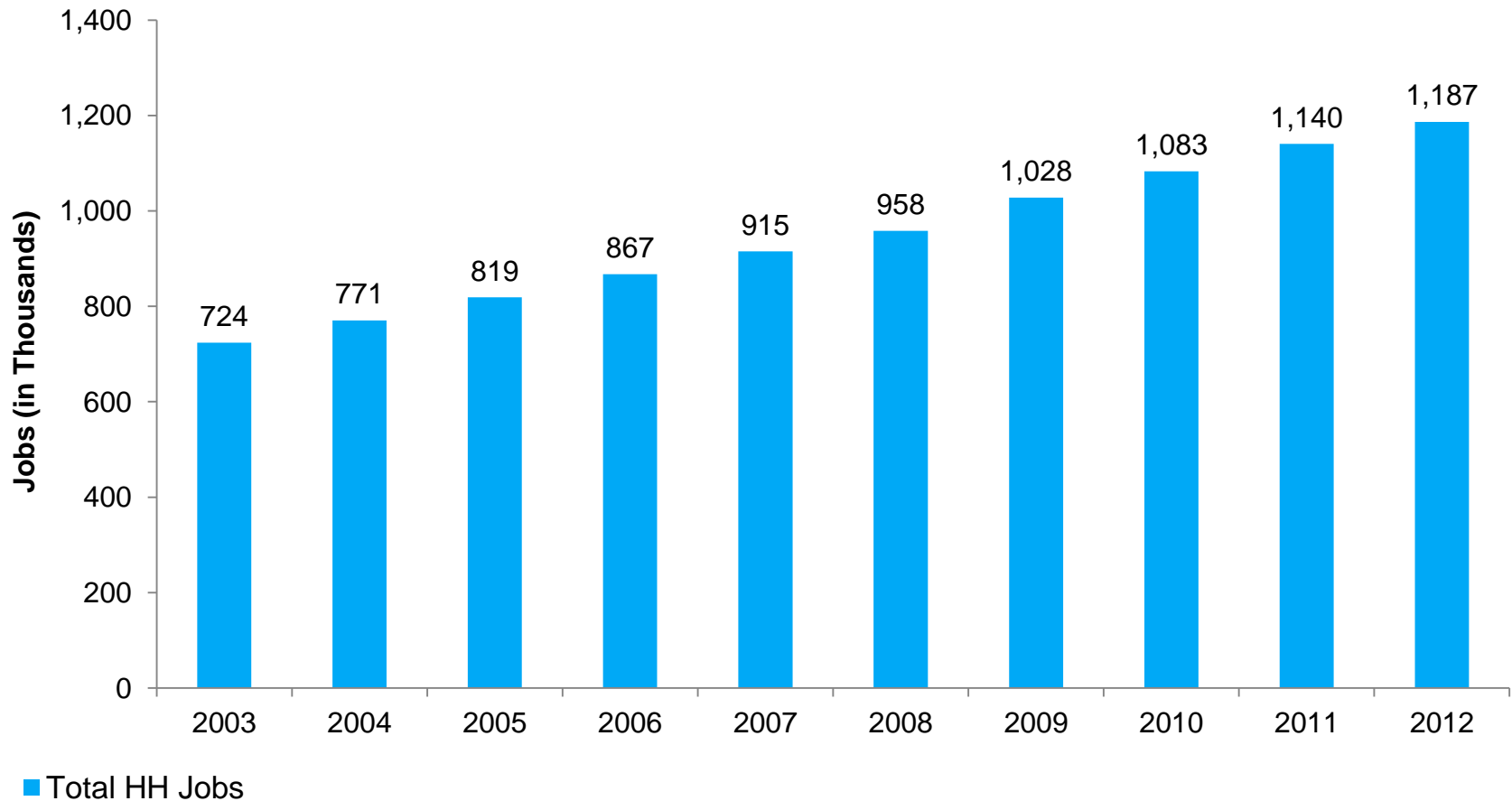
2. U.S. Bureau of Economic Analysis multipliers

3. Avalere calculation

Note: All Medicare-certified home health agencies are required to submit an annual cost report, which includes cost and charges by cost center in total and for Medicare. Cost report data do not include expenditures from HHA contractors, but the multiplier is intended to account for such figures.

Economic Contribution of Home Health Agencies

Chart 6.4: Impact of Home Health on Jobs, Nationally, 2003 - 2012



Source: Avalere Health, LLC analysis of the Medicare Cost Reports from the Centers for Medicare and Medicaid Services; Bureau of Labor Statistics
Note: Employment data for privately-owned facilities only. Output is not adjusted by U.S. Bureau of Economic Analysis multipliers.



Section 7: Outcomes

Outcomes: Rehospitalization Among Post-Acute Care Users

Table 7.1: 30-day Rehospitalization Rates for Top 20 Most Common MS-DRGs Discharged from Hospital to Selected Post-Acute Care (PAC) Settings, by Setting, 2012

MS-DRG	% of Home Health Users Rehospitalized Within 30 Days	% of SNF Users Rehospitalized Within 30 Days
Major joint replacement or reattachment of lower extremity w/o mcc	3.84%	7.53%
Septicemia or severe sepsis w/o mv 96+ hours w mcc	22.24%	23.87%
Kidney & urinary tract infections w/o mcc	19.53%	15.08%
Heart failure & shock w cc	24.09%	24.15%
Heart failure & shock w mcc	25.64%	27.54%
Hip & femur procedures except major joint w cc	8.78%	12.17%
Intracranial hemorrhage or cerebral infarction w cc	14.90%	15.85%
Simple pneumonia & pleurisy w cc	18.28%	17.72%
Renal failure w cc	22.95%	20.46%
Simple pneumonia & pleurisy w mcc	21.69%	22.86%
Cellulitis w/o mcc	13.99%	14.73%
Septicemia or severe sepsis w/o mv 96+ hours w/o mcc	17.01%	18.02%
Chronic obstructive pulmonary disease w mcc	23.21%	25.02%
Misc disorders of nutrition, metabolism, fluids/electrolytes w/o mcc	21.56%	16.38%
Renal failure w mcc	20.21%	22.04%
Esophagitis, gastroent & misc digest disorders w/o mcc	27.20%	24.71%
Chronic obstructive pulmonary disease w cc	19.54%	17.15%
Kidney & urinary tract infections w mcc	23.78%	21.87%
G.I. Hemorrhage w cc	22.42%	18.63%
Syncope & collapse	19.44%	18.52%
Average Rate Across All MS-DRGs	17.39%	18.23%

Source: Avalere Health, LLC, analysis of Medicare Standard Analytic Files, 2012

Note: CC is complication or comorbidity. MCC is major complication or comorbidity.

Outcomes: Quality of Home Health Care

Table 7.2: National Averages for How Often Home Health Team Met Quality Measures Related to Patient Care, 2012 - 2014

Measure	April 2012 – March 2013	April 2013 - March 2014	Change
Checked patients for pain	99%	99%	—
Checked patients for the risk of developing pressure sores (bed sores)	98%	99%	▲
Treated heart failure symptoms	98%	98%	—
Treated patients' pain	98%	98%	—
Checked patients for depression	98%	98%	—
Checked patients' risk of falling	96%	98%	▲
Included treatments to prevent pressure sores (bed sores) in the plan of care	97%	97%	—
Took doctor-ordered action to prevent pressure sores (bed sores)	96%	97%	▲
For diabetic patients, got doctor's orders, gave and educated about foot care	93%	94%	▲
Taught patients (or their family caregivers) about their drugs	92%	93%	▲
Began care in timely manner	91%	92%	▲
Determined whether patients received a flu shot for the current flu season	70%	72%	▲
Determined whether patients received a pneumococcal vaccine (pneumonia shot)	69%	72%	▲

Source: Medicare Home Health Compare. Archive dates: June 01, 2013; July 24 2014

Outcomes: Quality of Home Health Care

Table 7.3: National Averages for Patient Outcomes while in Home Health Care, 2012 - 2014

Measure	April 2012 – March 2013	April 2013 – March 2014	Change
Wounds improved or healed after operation	89%	89%	—
Got better at bathing	66%	68%	▲
Had less pain when moving around	67%	68%	▲
Breathing improved	64%	65%	▲
Got better at walking or moving around	59%	62%	▲
Got better at getting in and out of bed	55%	57%	▲
Got better at taking drugs correctly by mouth	50%	51%	▲
Had to be admitted to hospital	17%*	16%**	▼
Needed any urgent, unplanned care in the hospital emergency room – without being admitted to the hospital	12%*	12%**	—

Source: Medicare Home Health Compare. Archive dates: June 01, 2013. July 24 2014

* Date range from January 2012 to December 2012

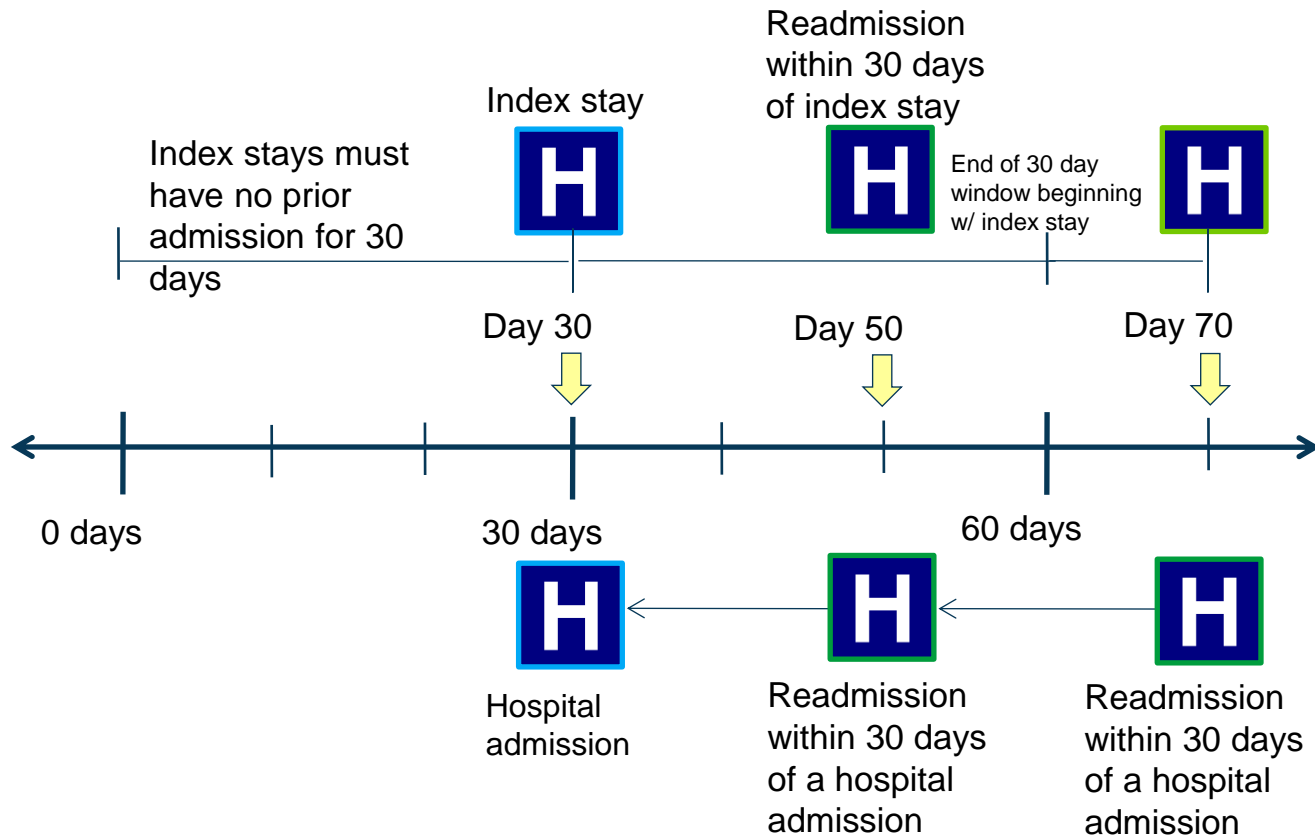
** Date range from January 2013 to December 2013



Appendix A: Readmission Rate Methodology

Methodology: Calculating Readmission Rates

The ACA methodology defines a readmission as an admission to a short-term acute care hospital (STACH) within 30 days of an initial, or 'index', admission to a STACH. To be considered an index admission, there must be no other STACH admission in the prior 30 days. These data are based on raw Medicare claims and no risk-based or geographic adjustments have been applied.



Using the Affordable Care Act (ACA) methodology, this episode of care results in **one** 30-day readmission

Without defining index stays as above, this episode of care results in **two** 30-day readmissions