



Home Health Chartbook

August 2013

Avalere Health LLC

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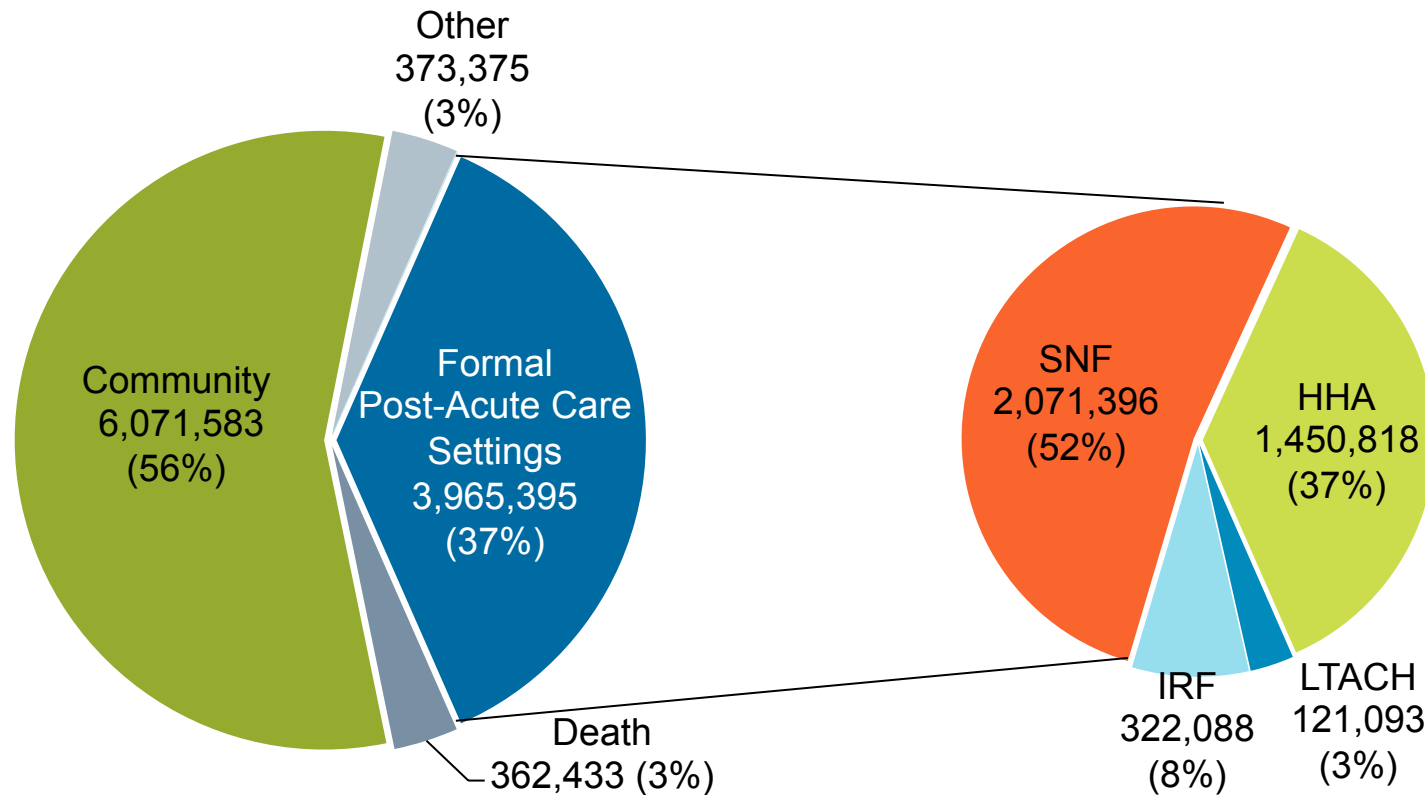
Section 1: National Overview



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National Overview

Chart 1.1: Initial Patient Destinations Following an Inpatient Hospital Stay for Medicare Beneficiaries, 2011



Source: Avalere Health, LLC analysis of Medicare Standard Analytic Files, 2011.

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

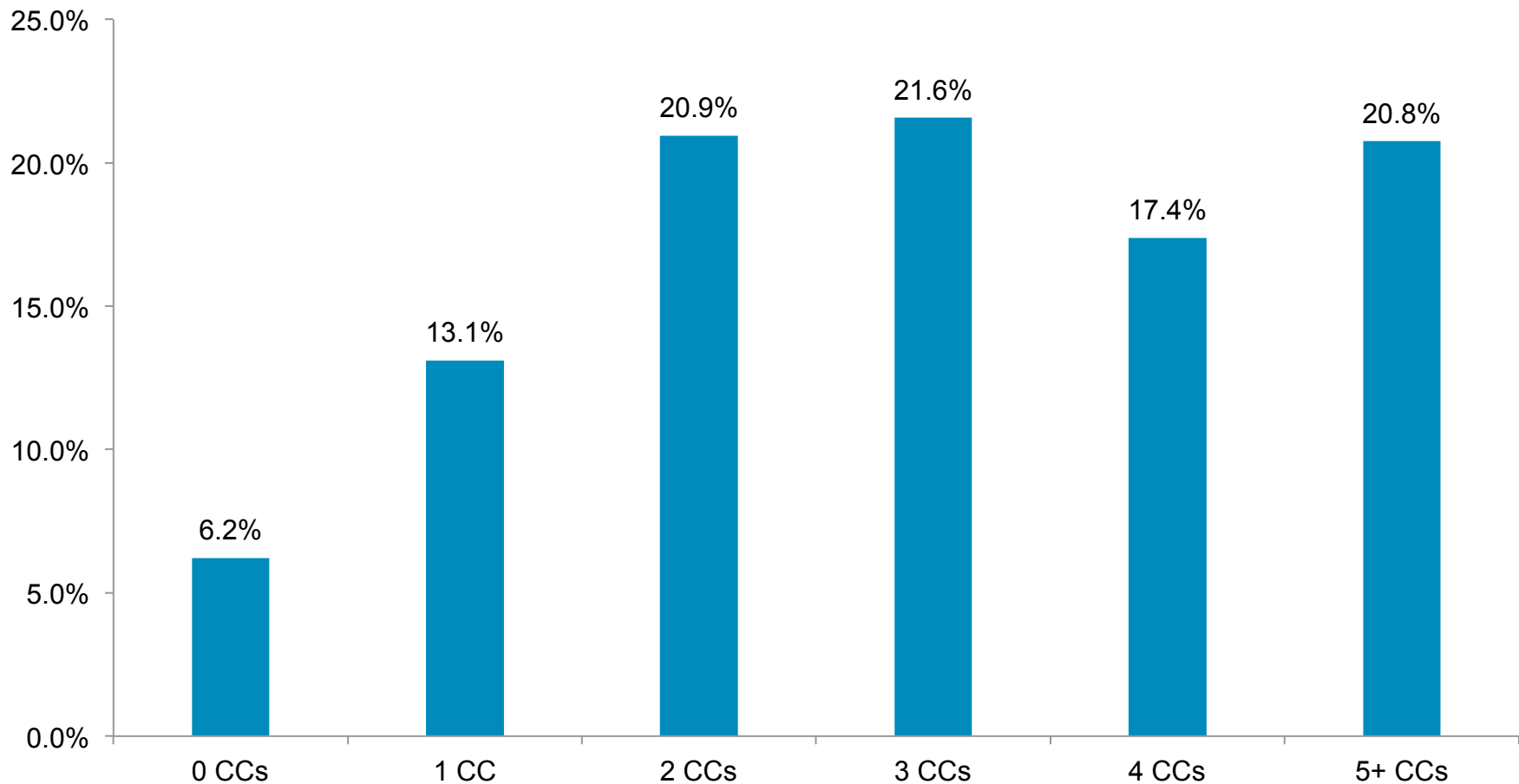
Community: Discharges to the community without skilled home health care. This includes individuals living at home, assisted living facilities, and retirement communities.

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

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

National Overview

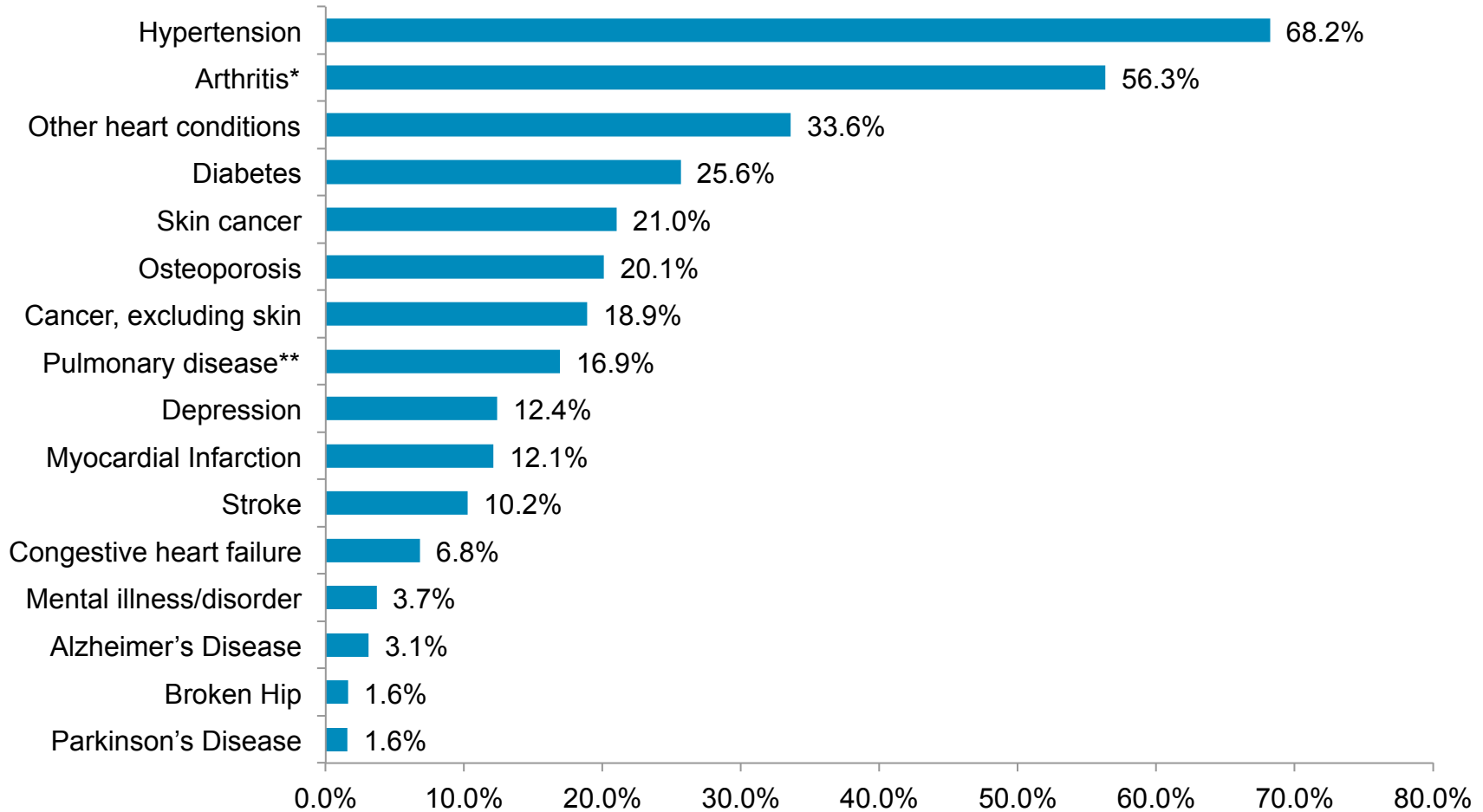
Chart 1.2: Percentage of Medicare Beneficiaries aged 65+ with Chronic Conditions by Number of Chronic Conditions, 2011



Source: Medicare Current Beneficiary Survey, Access to Care file, 2011

National Overview

Chart 1.3: Percentage of Medicare Beneficiaries aged 65+ with Selected Chronic Conditions, 2011



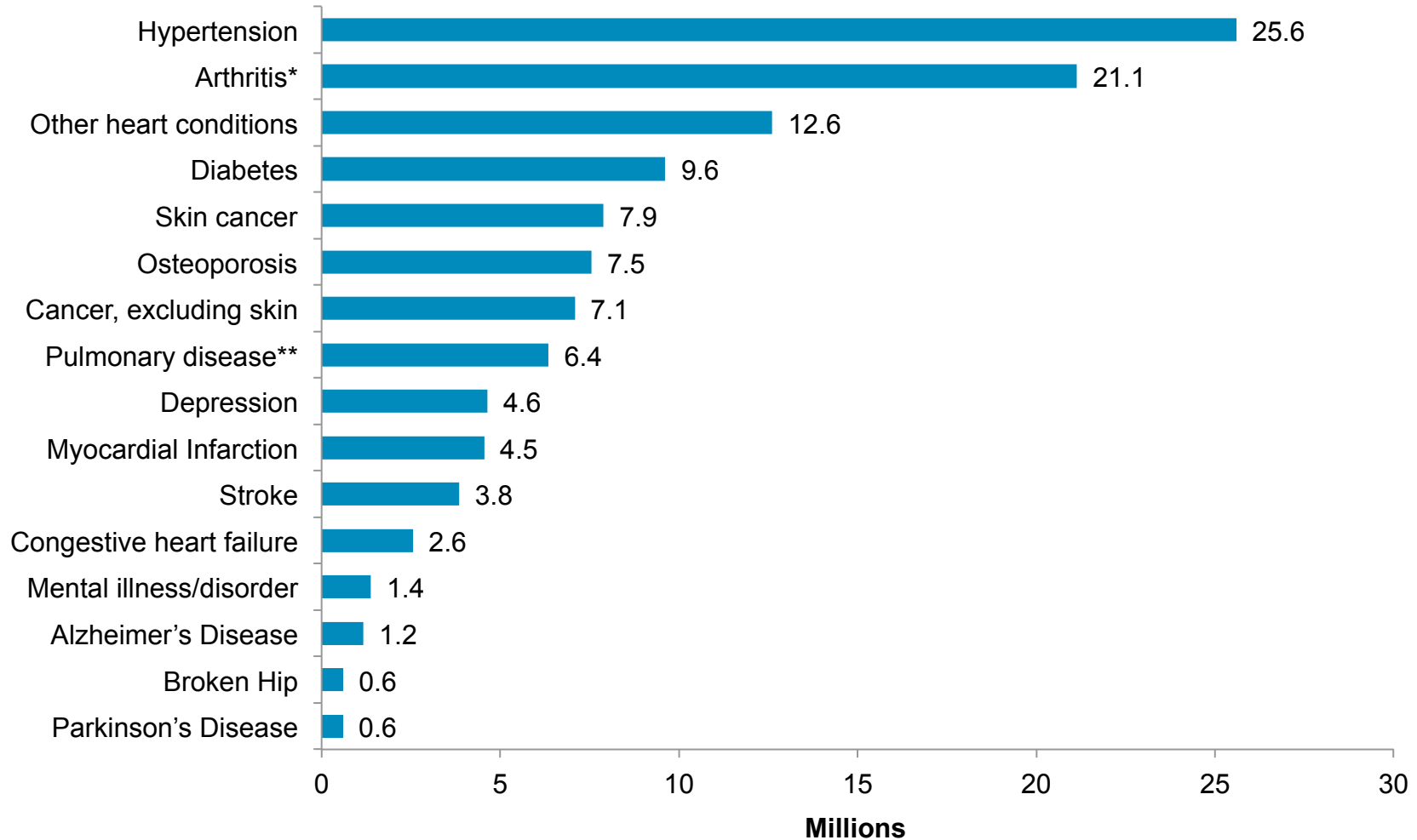
Source: Medicare Current Beneficiary Survey, Access to Care file, 2011

*Includes rheumatoid and non-rheumatoid arthritis.

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

National Overview

Chart 1.4: Number of Medicare Beneficiaries aged 65+ with Chronic Conditions by Type of Condition, in Millions, 2011



Source: Medicare Current Beneficiary Survey, Access to Care file, 2011

*Includes rheumatoid and non-rheumatoid arthritis.

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



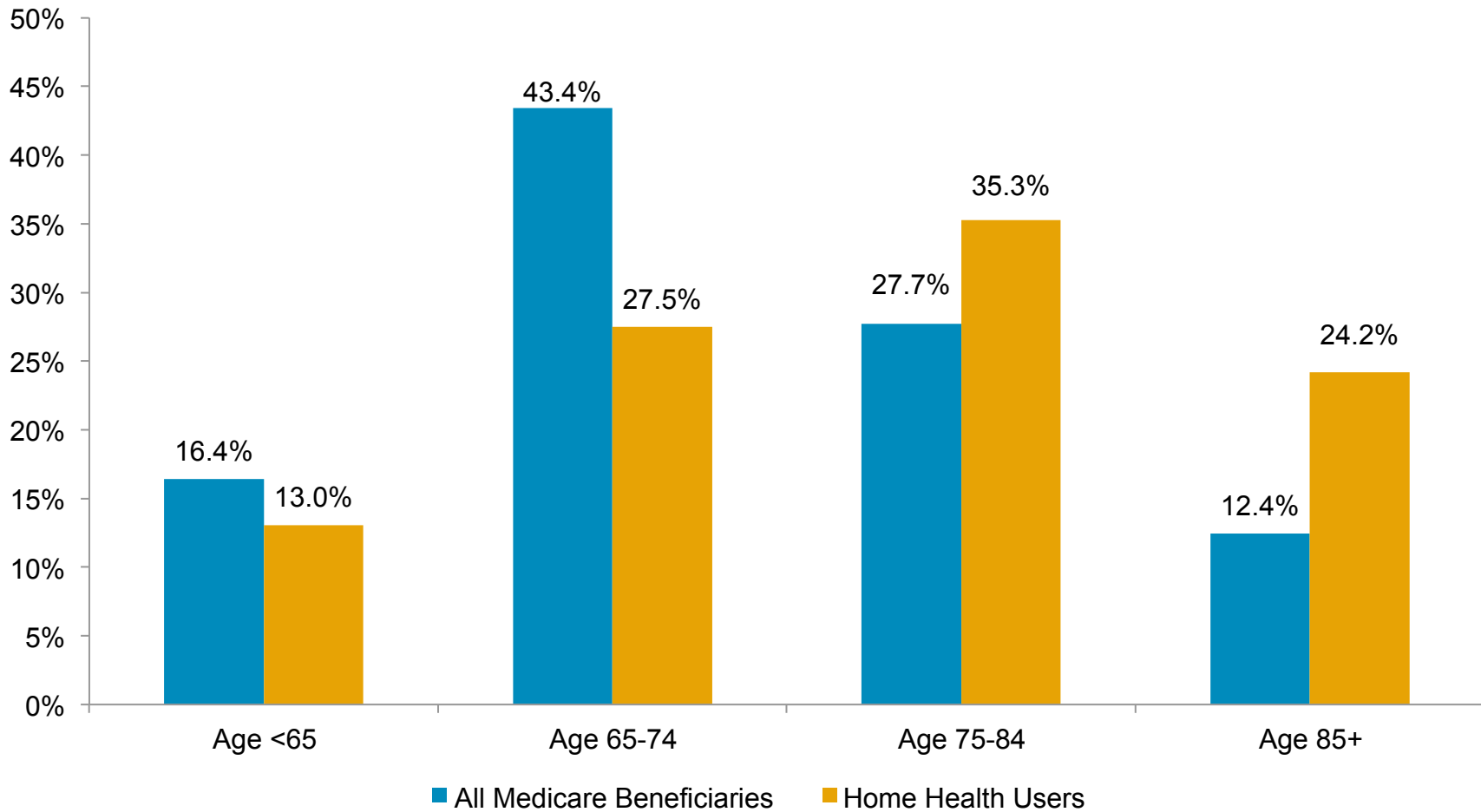
Section 2: Demographics of Home Health Users



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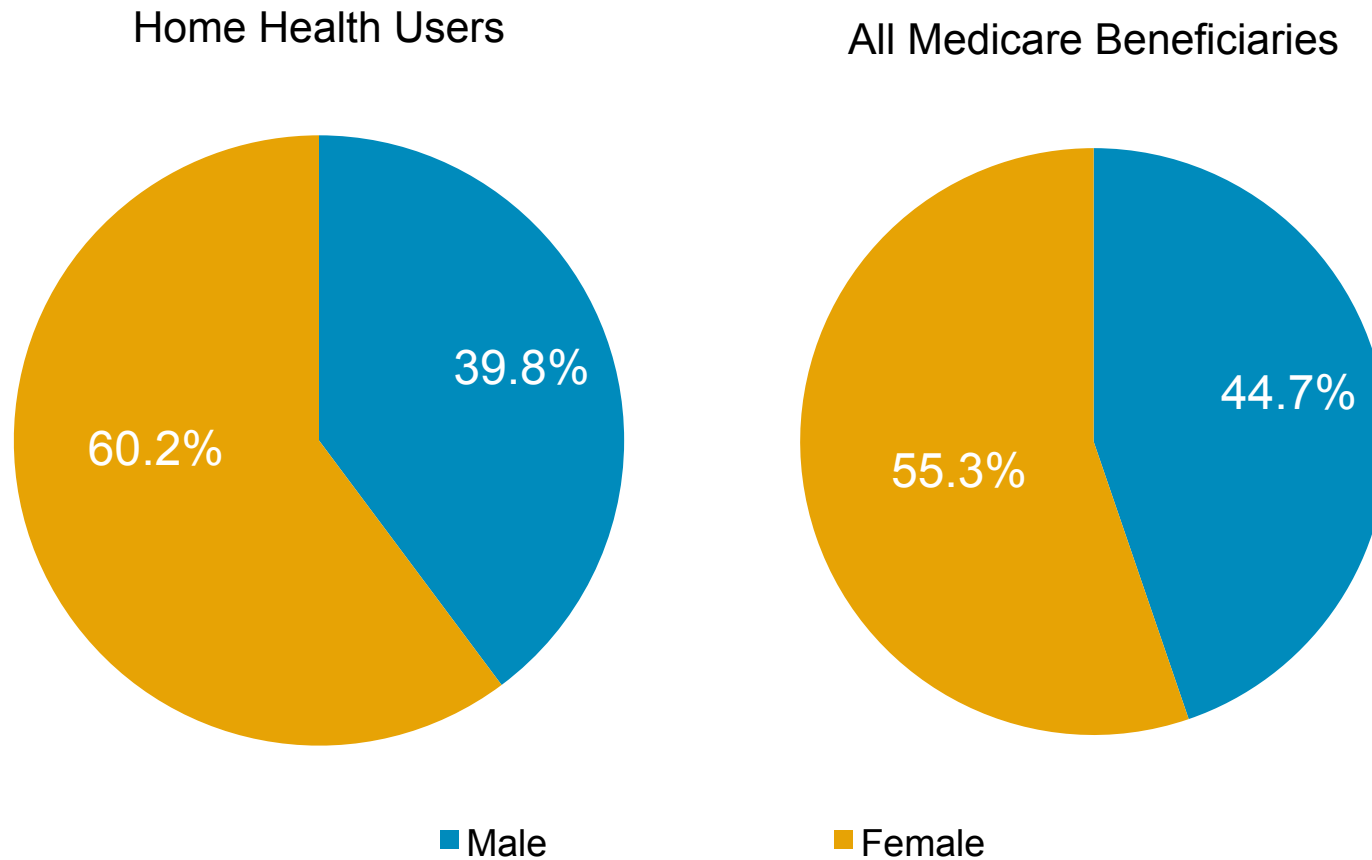
Demographics of Home Health Users

Chart 2.1: Age Distribution of Home Health Users and All Medicare Beneficiaries, 2011



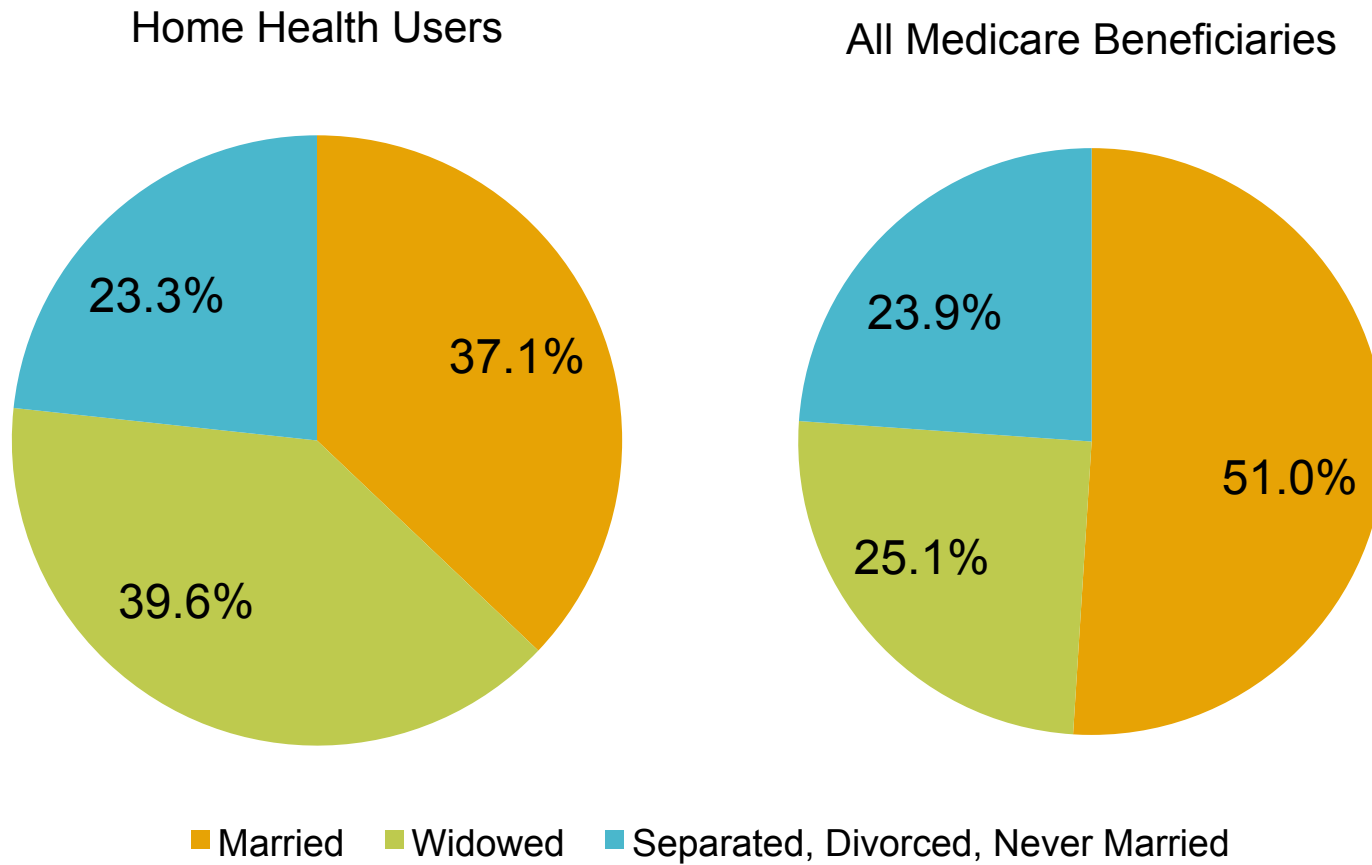
Demographics of Home Health Users

Chart 2.2: Gender Distribution of Home Health Users and All Medicare Beneficiaries, 2011



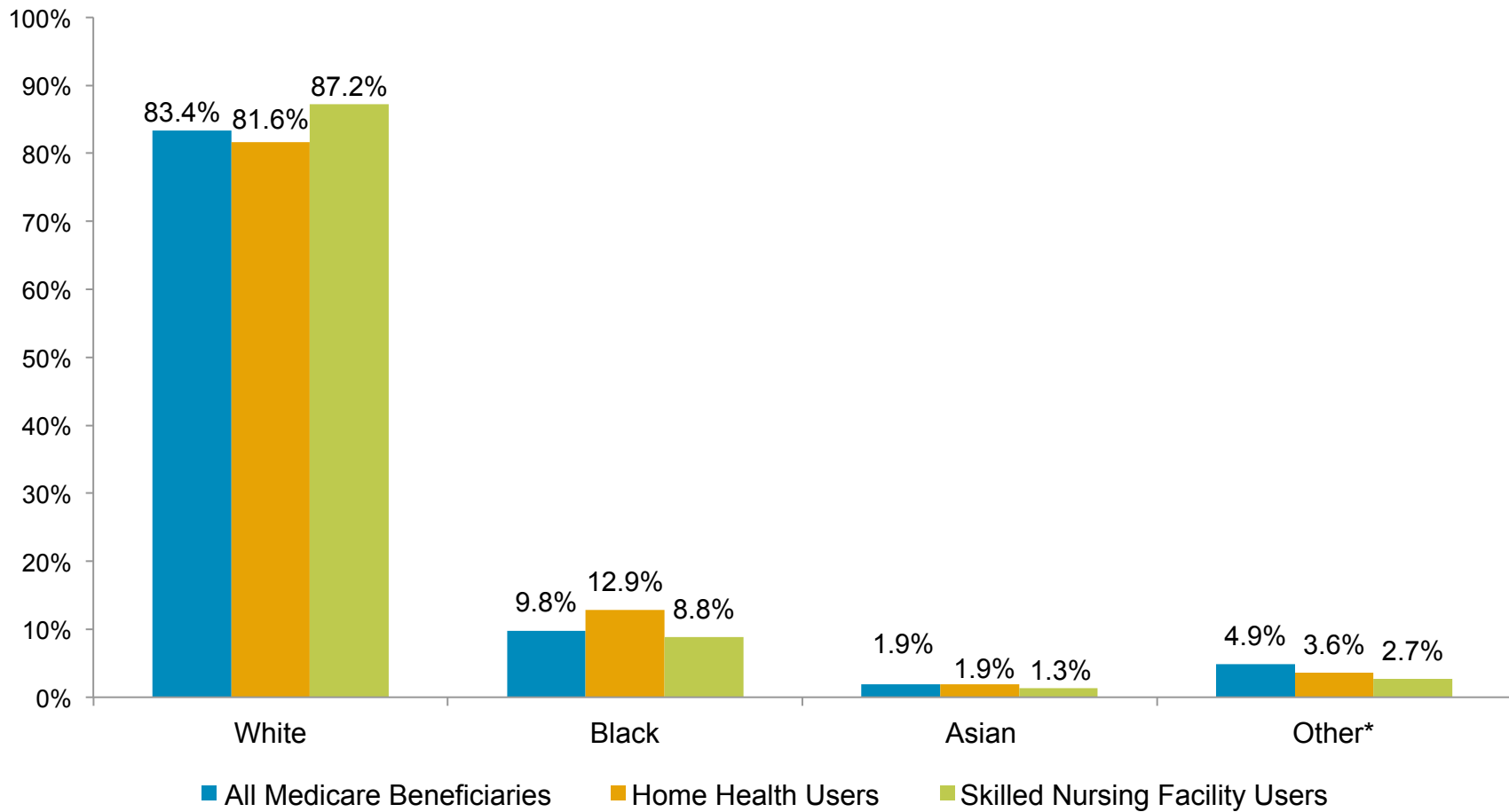
Demographics of Home Health Users

Chart 2.3: Marital Status of Home Health Users and All Medicare Beneficiaries, 2011



Demographics of Home Health Users

Chart 2.4: Race of Home Health Users, Skilled Nursing Facility Users, and All Medicare Beneficiaries, 2011

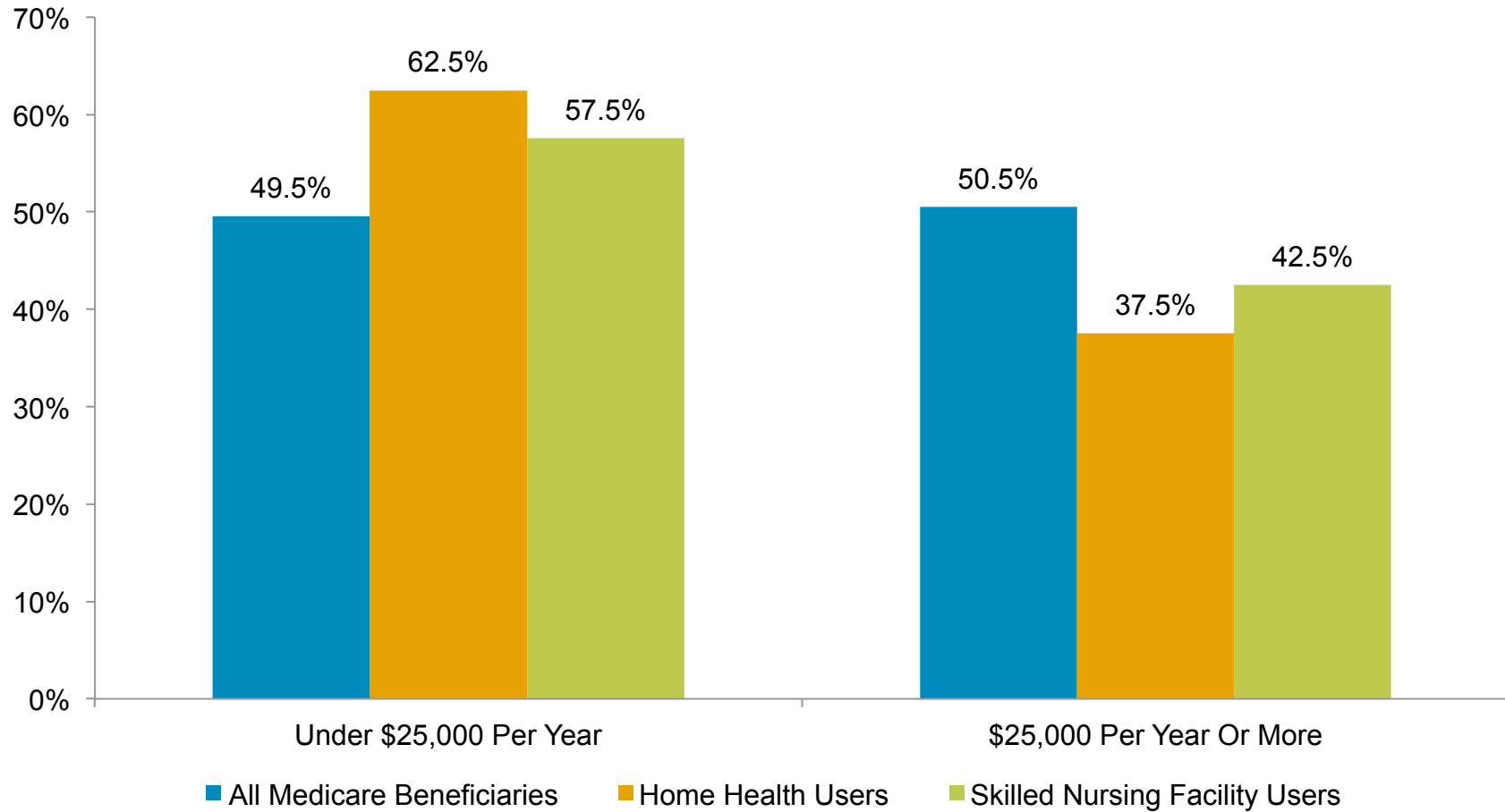


Source: Avalere analysis of the Medicare Current Beneficiary Survey, Access to Care file 2011

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

Demographics of Home Health Users

Chart 2.5: Income Distribution of Home Health Users, Skilled Nursing Facility Users, and All Medicare Beneficiaries, 2011



Demographics of Home Health Users

Table 2.6: Selected Characteristics of Medicare Home Health Users and All Medicare Beneficiaries, 2011

	All Medicare Home Health Users	All Medicare Beneficiaries
Over age 85	24.2%	12.5%
Live alone	35.6%	29.4%
Have 3 or more chronic conditions	83.2%	60.5%
Have 2 or more ADL limitations*	28.7%	10.6%
Report fair or poor health	45.8%	26.6%
Are in somewhat or much worse health than last year	41.3%	23.0%
Have incomes under 200% of the Federal Poverty Level (FPL)**	64.5%	48.9%
Have incomes under 100% of the Federal Poverty Level (FPL)**	34.8%	22.0%

Source: Avalere analysis of the Medicare Current Beneficiary Survey, Access to Care file 2011.

*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 2011, FPL for a household of 1 was \$10,890, a household of 2 was \$14,710, a household of 3 was \$18,530, and household of 4 was \$22,350.

Demographics of Home Health Users*

Table 2.7: 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, 2011

Living Expense	One-Person Elderly Household	Two-Person Elderly Household	All Elderly Household Sizes
Housing	\$5,584	\$7,400	\$6,749
Food	\$2,296	\$3,794	\$3,296
Transportation	\$1,592	\$3,306	\$2,678
Health Care (out-of-pocket costs)	\$1,746	\$3,207	\$2,417
Total	\$11,218	\$17,707	\$15,140

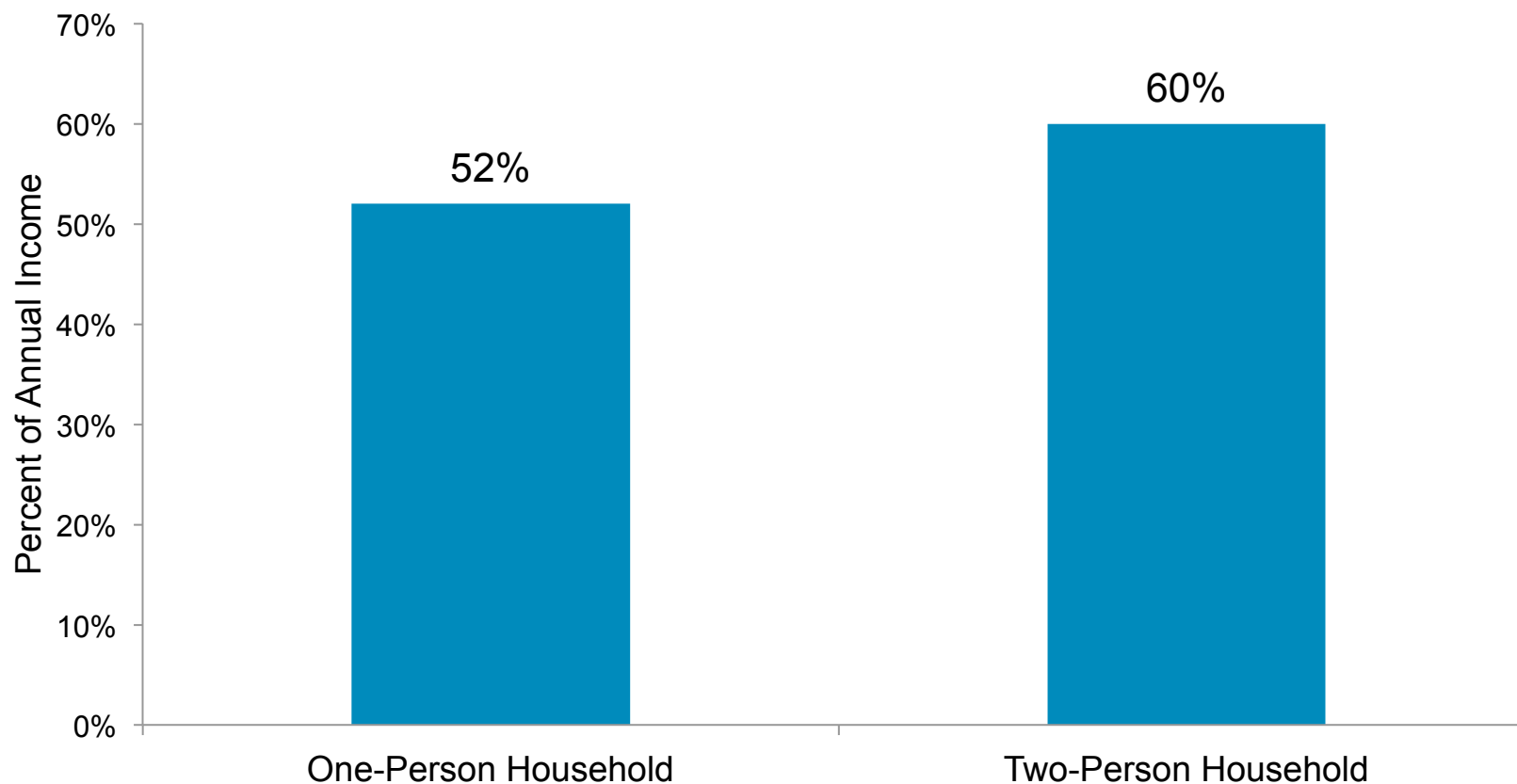
Source: Avalere analysis of the 2011 Bureau of Labor Statistics Consumer Expenditure Survey. The analysis includes households with one or more individuals age 65 or older and annual incomes below 200% of the Federal Poverty Limit.

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

**200% of the Federal Poverty Level is equal to \$21,780 for a one-person household and \$29,420 for a two-person household.

Demographics of Home Health Users*

Chart 2.8: 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, 2011



Source: Avalere analysis of the 2011 Bureau of Labor Statistics Consumer Expenditure Survey. 2011 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.

**\$21,780 for a one-person household; \$29,420 for a two-person household.

Demographics of Home Health Users by Race and Ethnicity

Table 2.9: Selected Characteristics of All Medicare Home Health Users and Medicare Home Health Users by Race and Ethnicity, 2011

	Black Medicare HH Users	Hispanic Medicare HH Users	All Medicare Beneficiaries
Over age 85	18.7%	19.9%	12.5%
Live alone	34.5%	31.8%	29.4%
Have 3 or more chronic conditions	81.6%	76.1%	60.5%
Have 2 or more ADL limitations*	36.3%	30.9%	10.6%
Report fair or poor health	55.1%	55.2%	26.6%
Are in somewhat or much worse health than last year	33.0%	48.3%	23.0%
Have incomes under 200% of the Federal Poverty Level (FPL)**	85.1%	82.2%	48.9%
Have incomes under 100% of the Federal Poverty Level (FPL)**	66.6%	53.4%	22.0%

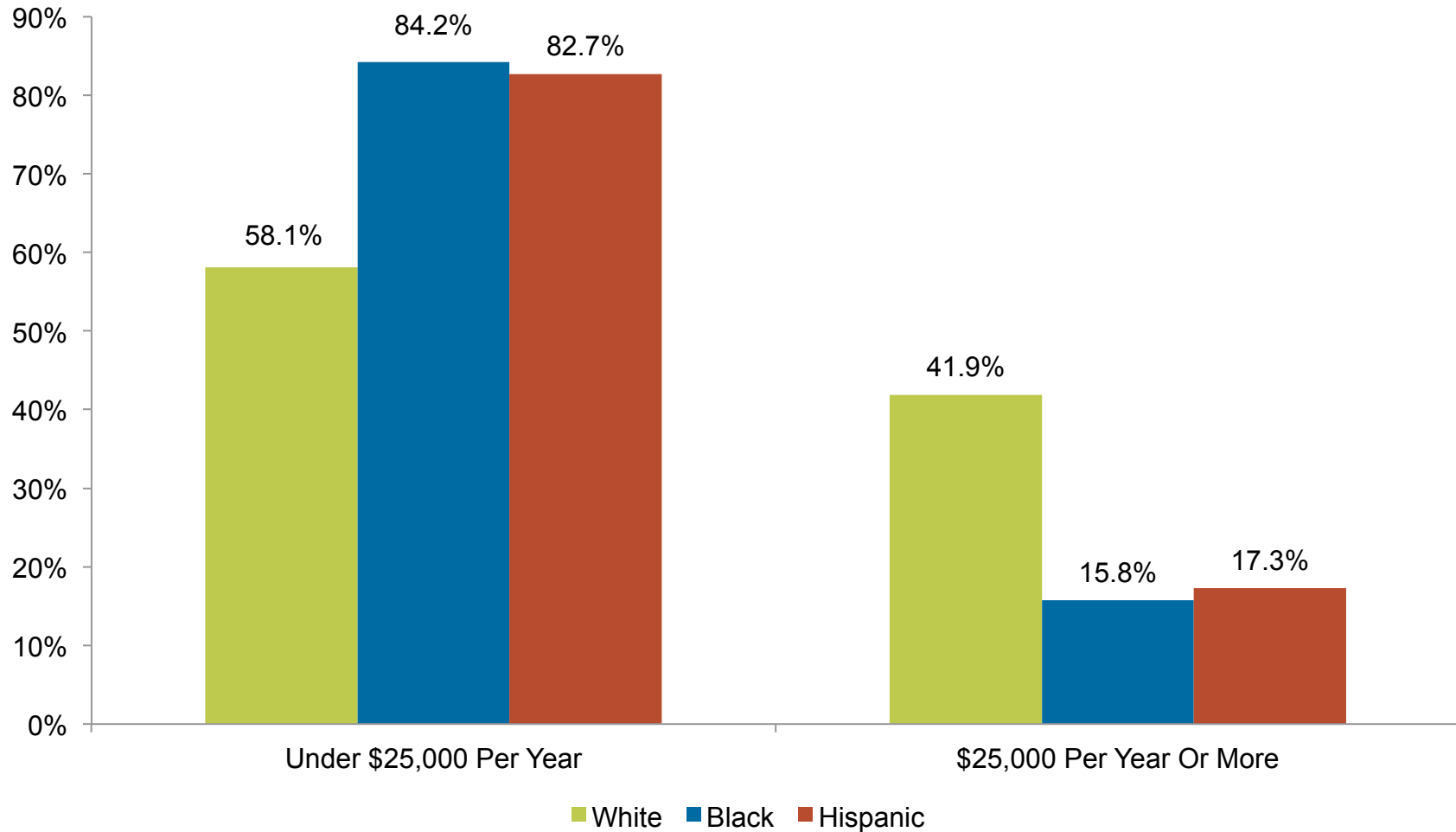
Source: Avalere analysis of the Medicare Current Beneficiary Survey, Access to Care file 2011.

*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 2011, FPL for a household of 1 was \$10,890, a household of 2 was \$14,710, a household of 3 was \$18,530, and household of 4 was \$22,350.

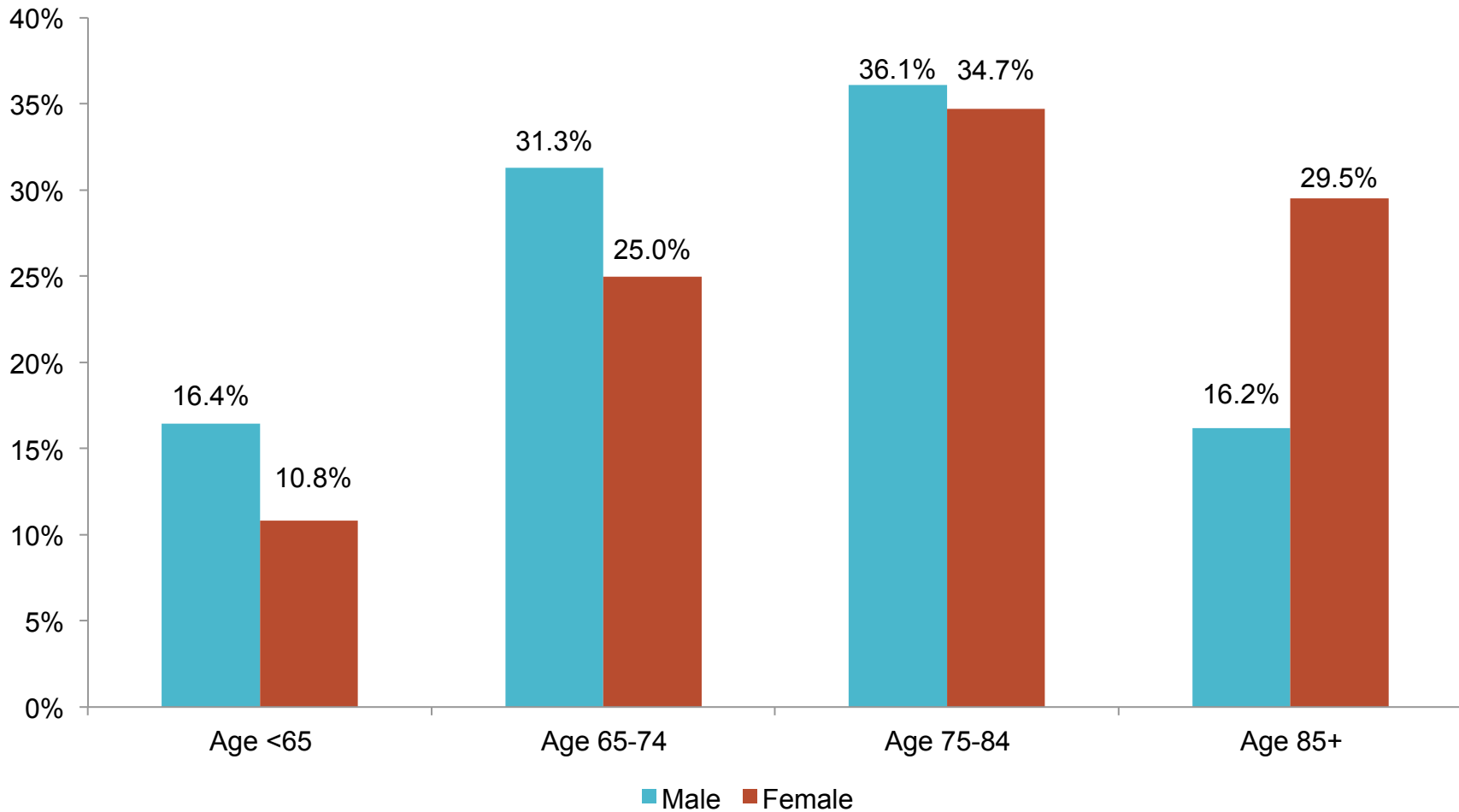
Demographics of Home Health Users by Race and Ethnicity

Chart 2.10: Income Distribution of Home Health Users by Race and Ethnicity, 2011



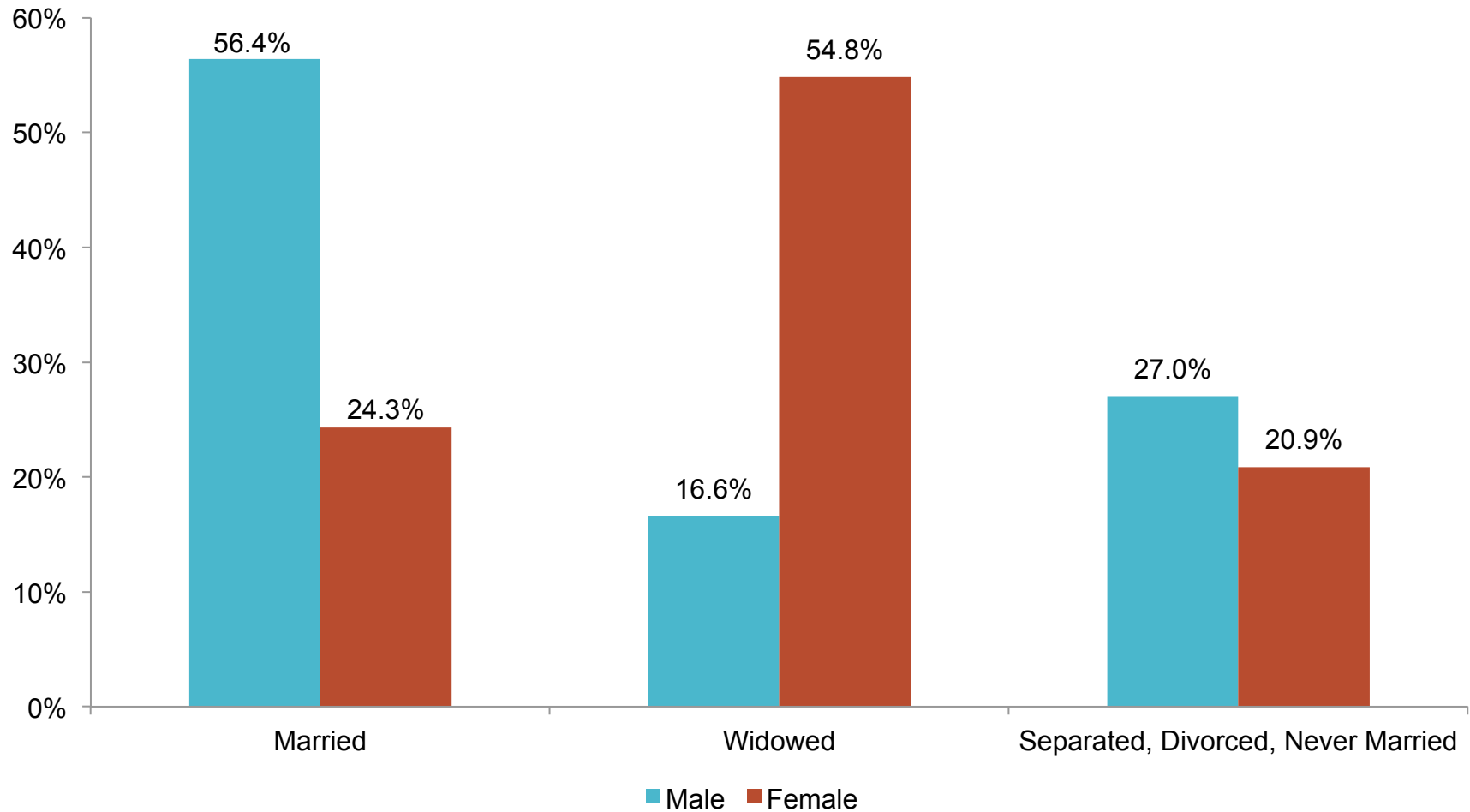
Demographics of Home Health Users by Sex

Chart 2.11: Age Distribution of Home Health Users by Sex, 2011



Demographics of Home Health Users by Sex

Chart 2.12: Marital Status of Home Health Users by Sex, 2011



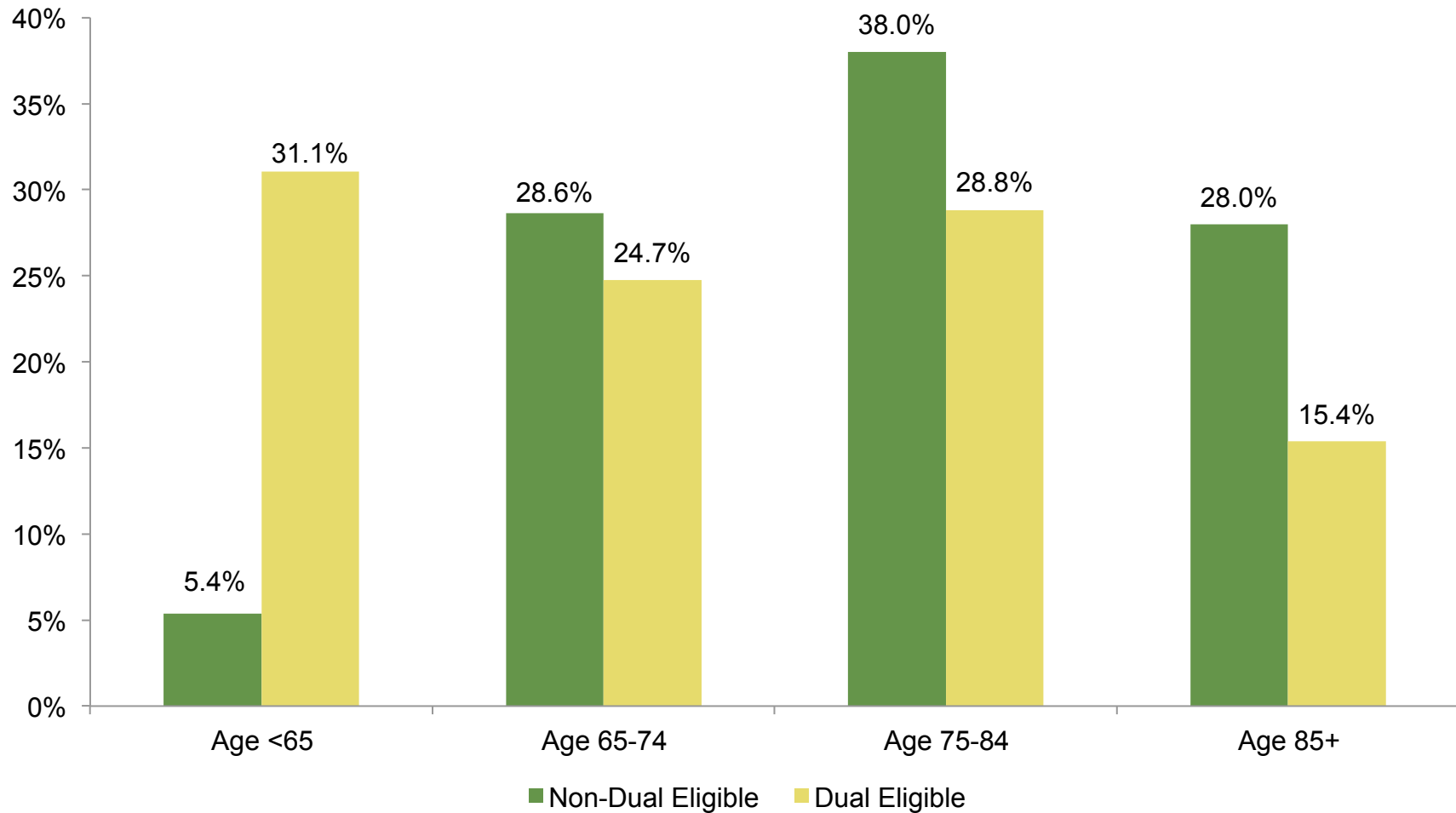
Demographics of Home Health Users by Sex

Chart 2.13: Income Distribution of Home Health Users by Sex, 2011



Demographics of Home Health Users by Dual Eligible Status

Chart 2.14: Age Distribution of Home Health Users by Dual Eligible Status, 2011

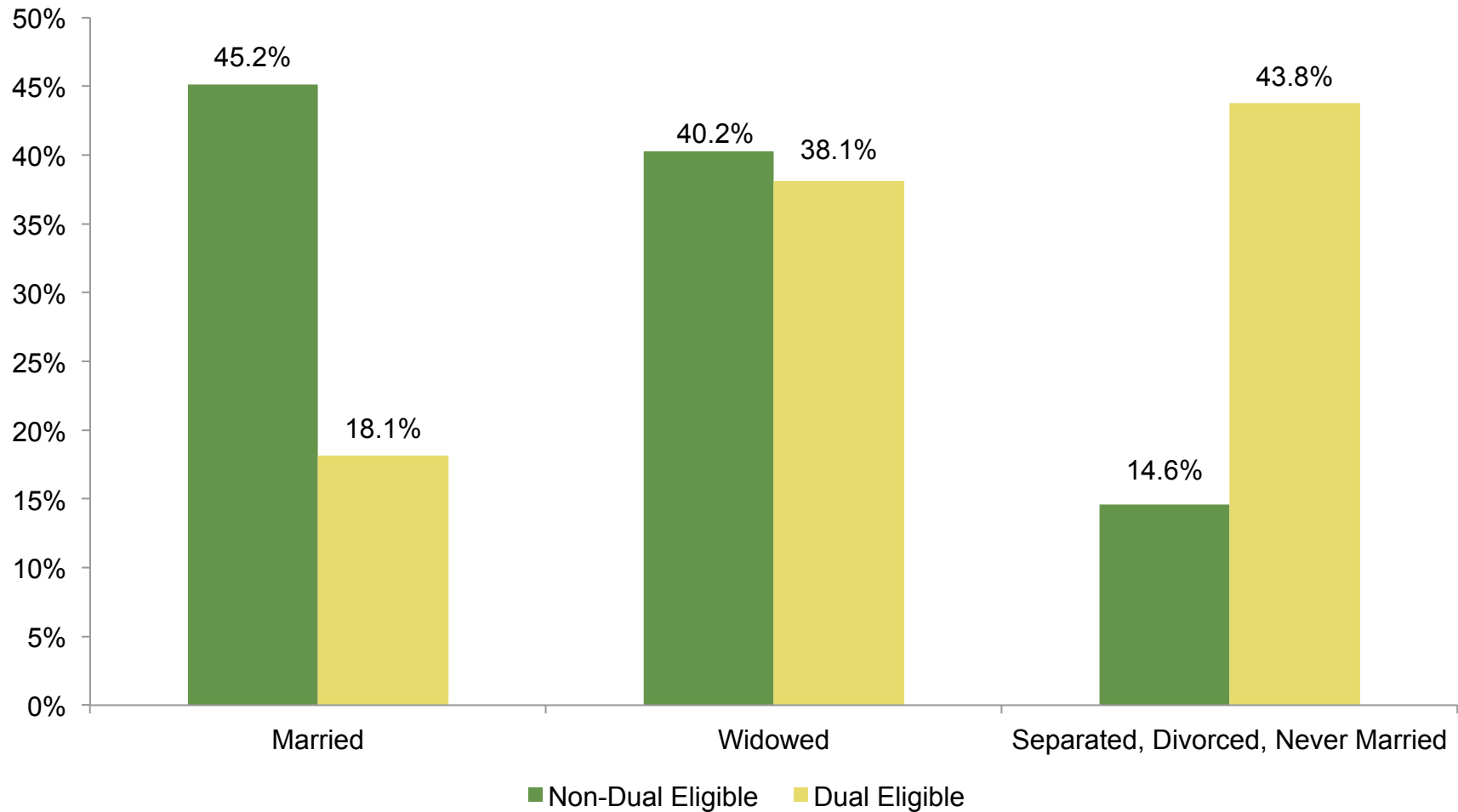


Source: Avalere analysis of the Medicare Current Beneficiary Survey, Access to Care file 2011

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 2.15: Marital Status of Home Health Users by Dual Eligible Status, 2011

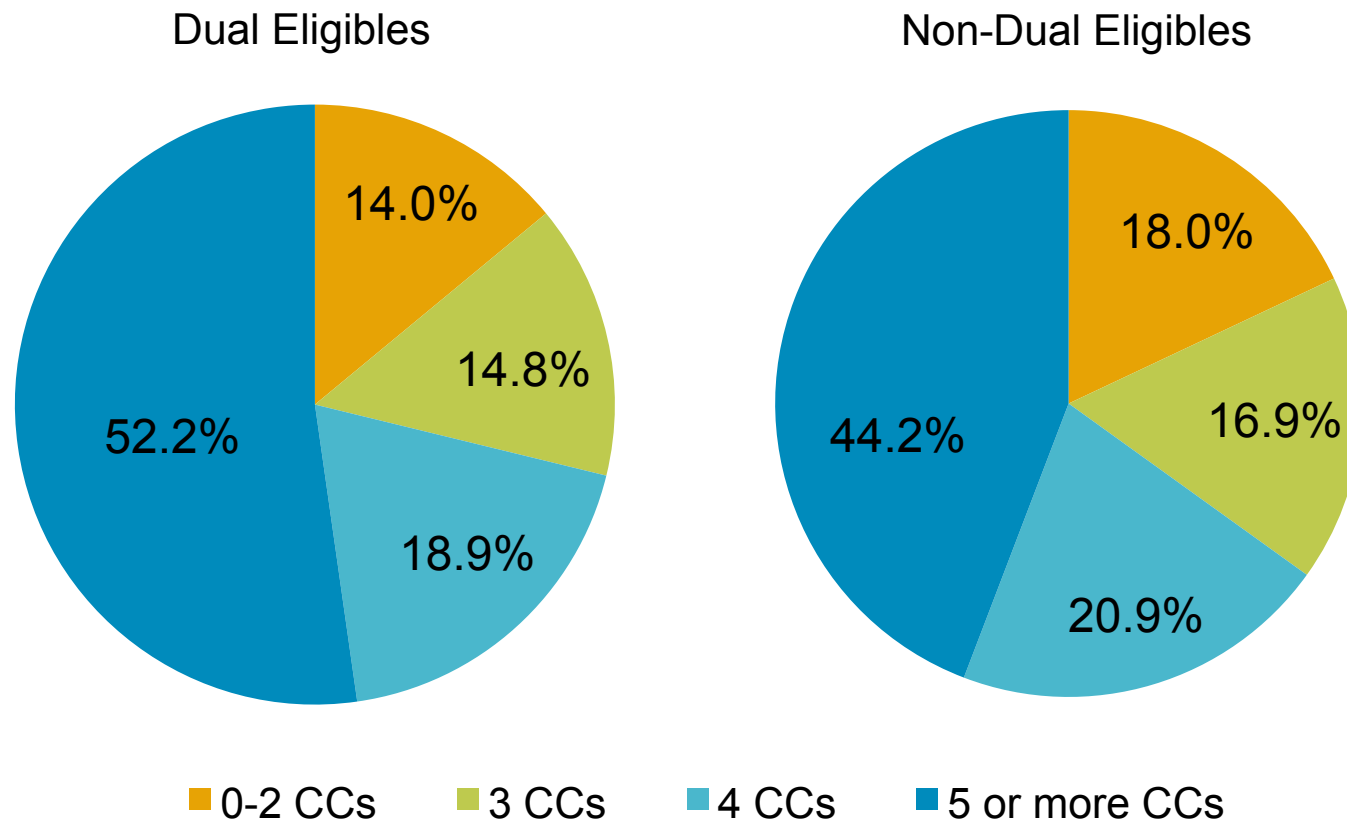


Source: Avalere analysis of the Medicare Current Beneficiary Survey, Access to Care file 2011

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

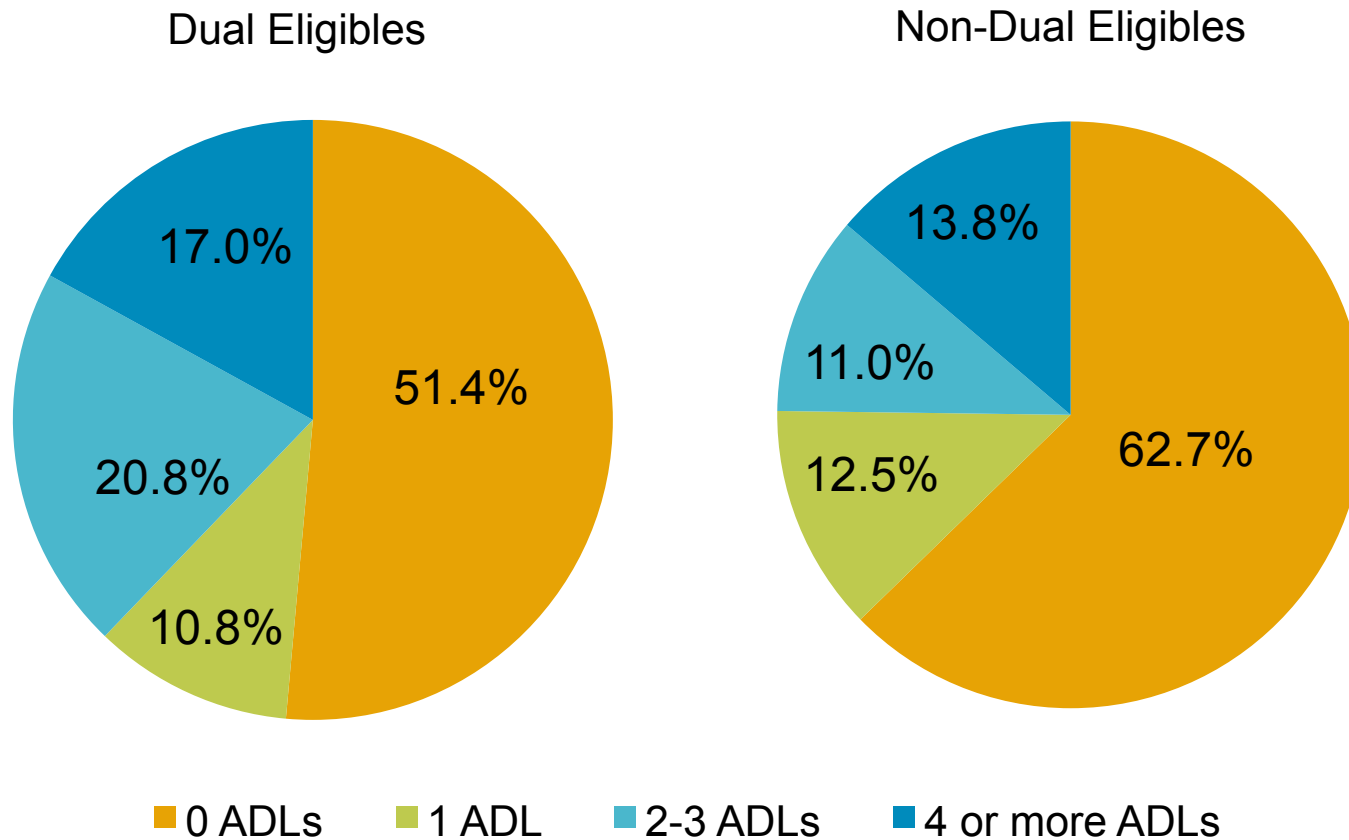
Chart 2.16: Percentage of Home Health Users by Dual Eligible Status and Number of Chronic Conditions (CCs), 2011



Source: Avalere analysis of the Medicare Current Beneficiary Survey, Access to Care file 2011
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 2.17: Percentage of Home Health Users by Dual Eligible Status and Number of Activities of Daily Living (ADLs) with Which They Require Assistance, 2011



Source: Avalere analysis of the Medicare Current Beneficiary Survey, Access to Care file 2011

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)*

Table 2.18: Selected Characteristics of All Medicare Home Health Users and Medicare Home Health users with SMI, 2011

	Medicare Home Health Users with SMI	All Medicare Beneficiaries
Over age 85	12.9%	12.5%
Live alone	38.3%	29.4%
Have 3 or more chronic conditions	90.3%	60.5%
Have 2 or more ADL limitations**	37.5%	10.6%
Report fair or poor health	69.7%	26.6%
Are in somewhat or much worse health than last year	50.0%	23.0%
Have incomes under 200% of the Federal Poverty Level (FPL)***	71.5%	48.9%
Have incomes under 100% of the Federal Poverty Level (FPL)***	40.6%	22.0%

Source: Avalere analysis of the Medicare Current Beneficiary Survey, Access to Care file 2011.

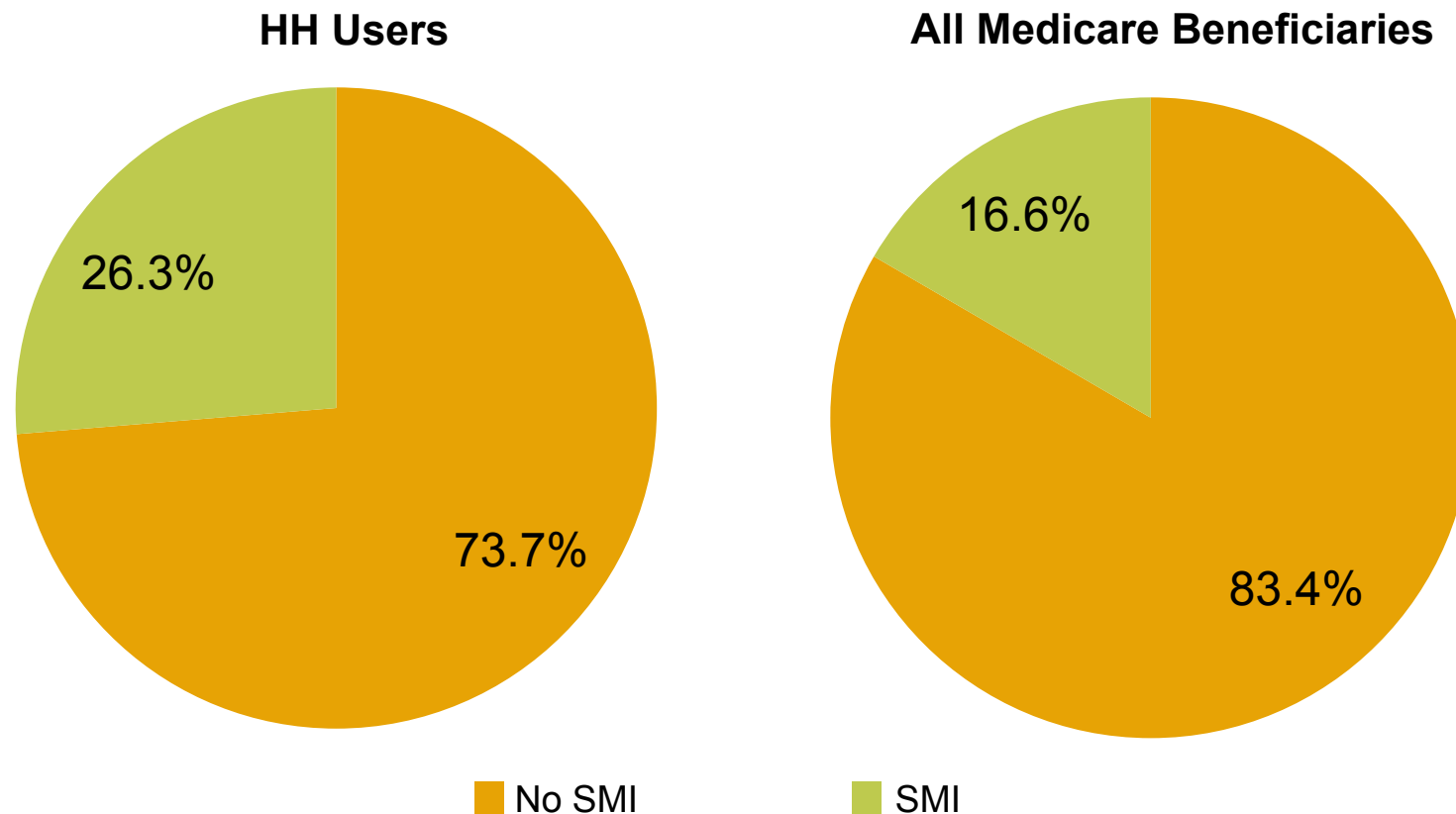
*Severe mental illness (SMI) is defined as having depression or another mental disorder, including bipolar disorder, schizophrenia, and other psychoses.

**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.

***In 2011, FPL for a household of 1 was \$10,890, a household of 2 was \$14,710, a household of 3 was \$18,530, and household of 4 was \$22,350.

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

Chart 2.19: Percentage of Home Health Users who Have SMI Compared to the Percentage of Medicare Beneficiaries with SMI, 2011

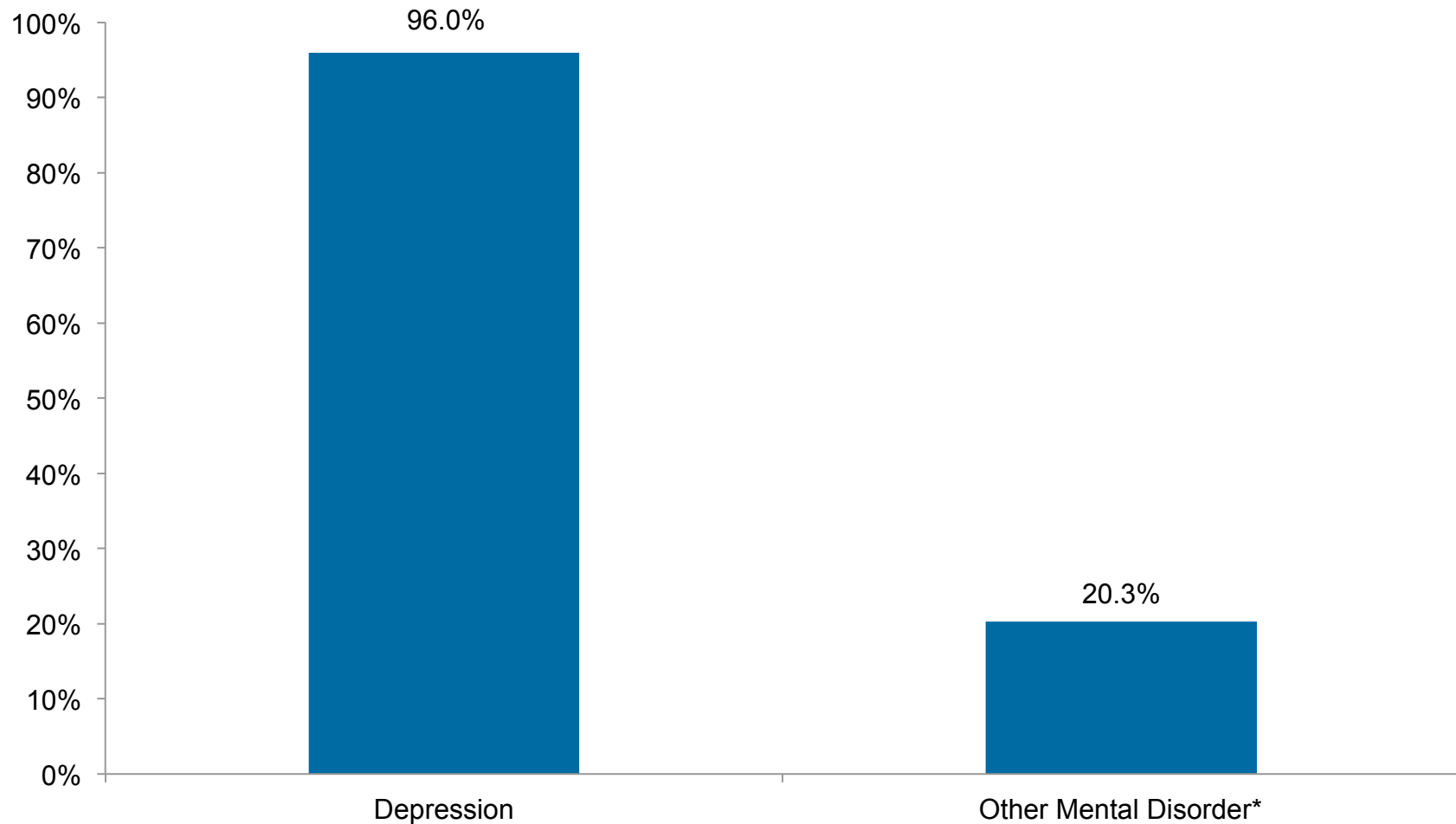


Source: Avalere analysis of the Medicare Current Beneficiary Survey, Access to Care file, 2011

Note: 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 2.20: Breakdown of Medicare Home Health Users with SMI by Type of SMI, 2011



Source: Avalere analysis of the Medicare Current Beneficiary Survey, Access to Care file 2011

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



Section 3: Clinical Profile of Home Health Users



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Clinical Profile of Home Health Users

Chart 3.1: Top 20 Most Common Diagnosis Related Groups (DRGs) for Beneficiaries Discharged from Hospital to Part A Home Health Episodes, 2011

MS-DRG	Number of Home Health Part A Claims, 2011	Percent of Total Home Health Part A Claims, 2011
MAJOR JOINT REPLACEMENT OR REATTACHMENT OF LOWER EXTREMITY W/O MCC	201,426	10.39%
HEART FAILURE & SHOCK W CC	45,194	2.33%
SEPTICEMIA OR SEVERE SEPSIS W/O MV 96+ HOURS W MCC	44,839	2.31%
HEART FAILURE & SHOCK W MCC	35,214	1.82%
HIP & FEMUR PROCEDURES EXCEPT MAJOR JOINT W CC	34,154	1.76%
SIMPLE PNEUMONIA & PLEURISY W CC	32,974	1.70%
KIDNEY & URINARY TRACT INFECTIONS W/O MCC	32,611	1.68%
INTRACRANIAL HEMORRHAGE OR CEREBRAL INFARCTION W CC	30,697	1.58%
CELLULITIS W/O MCC	29,084	1.50%
CHRONIC OBSTRUCTIVE PULMONARY DISEASE W MCC	27,413	1.41%
RENAL FAILURE W CC	26,454	1.36%
CHRONIC OBSTRUCTIVE PULMONARY DISEASE W CC	24,357	1.26%
SIMPLE PNEUMONIA & PLEURISY W MCC	23,342	1.20%
ESOPHAGITIS, GASTROENT & MISC DIGEST DISORDERS W/O MCC	23,227	1.20%
NUTRITIONAL & MISC METABOLIC DISORDERS W/O MCC	22,057	1.14%
SYNCOPE & COLLAPSE	20,524	1.06%
SEPTICEMIA OR SEVERE SEPSIS W/O MV 96+ HOURS W/O MCC	19,646	1.01%
SPINAL FUSION EXCEPT CERVICAL W/O MCC	18,872	0.97%
MAJOR SMALL & LARGE BOWEL PROCEDURES W CC	18,620	0.96%
G.I. HEMORRHAGE W CC	17,435	0.90%
Total for Top 20 MS-DRGs	728,140	37.55%

Source: Avalere Health, LLC analysis of Medicare Standard Analytic Files, 2011

Data for beneficiaries with a Part A home health episode and a prior short-term acute care hospital stay in 2011.

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

Clinical Profile of Home Health Users

Chart 3.2: Top 20 Primary International Classification of Diseases, Version 9 (ICD-9) Diagnoses for Home Health Claims, 2011

ICD-9 Diagnosis	Number of Home Health Claims, 2011	Percent of Total Home Health Claims, 2011
Diabetes mellitus	682,607	9.71%
Care involving use of rehabilitation procedures	484,378	6.89%
Essential hypertension	482,970	6.87%
Other orthopedic aftercare	459,013	6.53%
Other and unspecified aftercare	420,357	5.98%
Heart failure	390,321	5.55%
Chronic ulcer of skin	269,933	3.84%
Chronic bronchitis	207,625	2.95%
Osteoarthritis and allied disorders	199,747	2.84%
Late effects of cerebrovascular disease	192,683	2.74%
Cardiac dysrhythmias	133,756	1.90%
Disorders of muscle, ligament, and fascia	131,052	1.86%
Symptoms involving nervous and musculoskeletal systems	118,693	1.69%
Other deficiency anemias	97,783	1.39%
Other complications of procedures, not elsewhere classified	96,014	1.37%
Other forms of chronic ischemic heart disease	91,236	1.30%
Fitting and adjustment of other device	83,005	1.18%
Other cellulitis and abscess	82,102	1.17%
Other disorders of urethra and urinary tract	80,159	1.14%
Pneumonia, organism unspecified	71,243	1.01%
Total for Top 20 Primary ICD-9 Diagnoses	4,774,677	67.92%

Source: Avalere Health, LLC analysis of Medicare Standard Analytic Files, 2011

National Overview

Chart 3.3: Percent of Medicare Home Health Users with 3 or More Chronic Conditions Compared to All Medicare Beneficiaries, by State, 2011

State	Percent of Home Health Users with 3+ CCs	Percent of Medicare Beneficiaries with 3+ CCs
Alabama	87.94%	27.22%
Alaska	84.18%	26.28%
Arizona	85.95%	15.18%
Arkansas	87.15%	25.58%
California	86.41%	17.06%
Colorado	84.60%	19.57%
Connecticut	87.12%	25.92%
Delaware	90.11%	33.41%
D.C	86.83%	26.62%
Florida	85.38%	22.18%
Georgia	86.99%	24.37%
Hawaii	84.87%	11.92%
Idaho	85.18%	24.60%
Illinois	91.43%	34.93%
Indiana	90.15%	29.75%
Iowa	90.19%	32.76%
Kansas	88.30%	30.50%
Kentucky	88.62%	30.48%
Louisiana	89.52%	27.92%
Maine	90.91%	37.83%
Maryland	89.25%	25.52%
Massachusetts	88.39%	30.94%
Michigan	90.39%	33.19%
Minnesota	87.22%	25.11%
Mississippi	88.24%	30.73%
Missouri	89.43%	29.37%

State	Percent of Home Health Users with 3+ CCs	Percent of Medicare Beneficiaries with 3+ CCs
Missouri	89.43%	29.37%
Montana	87.70%	31.10%
Nebraska	87.83%	29.43%
Nevada	81.87%	15.73%
New Hampshire	90.07%	39.93%
New Jersey	89.01%	23.16%
New Mexico	86.70%	23.38%
New York	88.32%	20.46%
North Carolina	86.89%	26.81%
North Dakota	91.83%	41.34%
Ohio	90.44%	25.81%
Oklahoma	89.51%	28.70%
Oregon	85.25%	17.15%
Pennsylvania	89.21%	22.69%
Rhode Island	87.18%	21.46%
South Carolina	87.18%	28.06%
South Dakota	87.25%	30.10%
Tennessee	87.88%	22.69%
Texas	88.54%	26.03%
Utah	81.18%	17.91%
Vermont	87.99%	40.92%
Virginia	86.99%	25.91%
Washington	85.32%	21.71%
West Virginia	90.87%	32.18%
Wisconsin	89.32%	24.26%
Wyoming	83.01%	26.22%

Source: Avalere Health, LLC analysis of Medicare Standard Analytic Files, 2011

Note: Having a chronic condition is defined as having a Medicare claim with a chronic condition listed in 2011. Medicare beneficiaries without any claims in 2011 are categorized as having no chronic conditions in 2011.



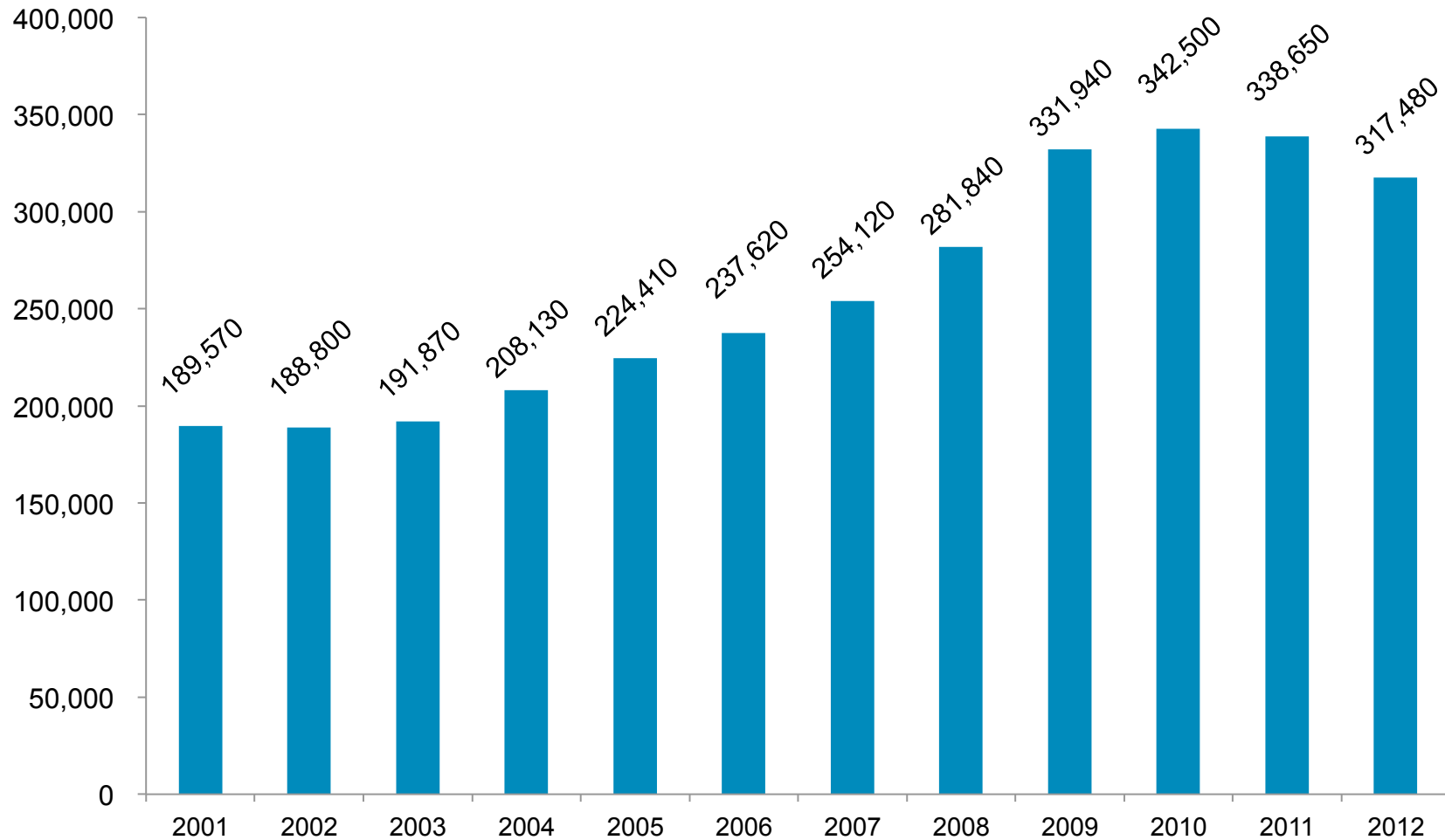
Section 4: Home Health Care Services Industry Workforce



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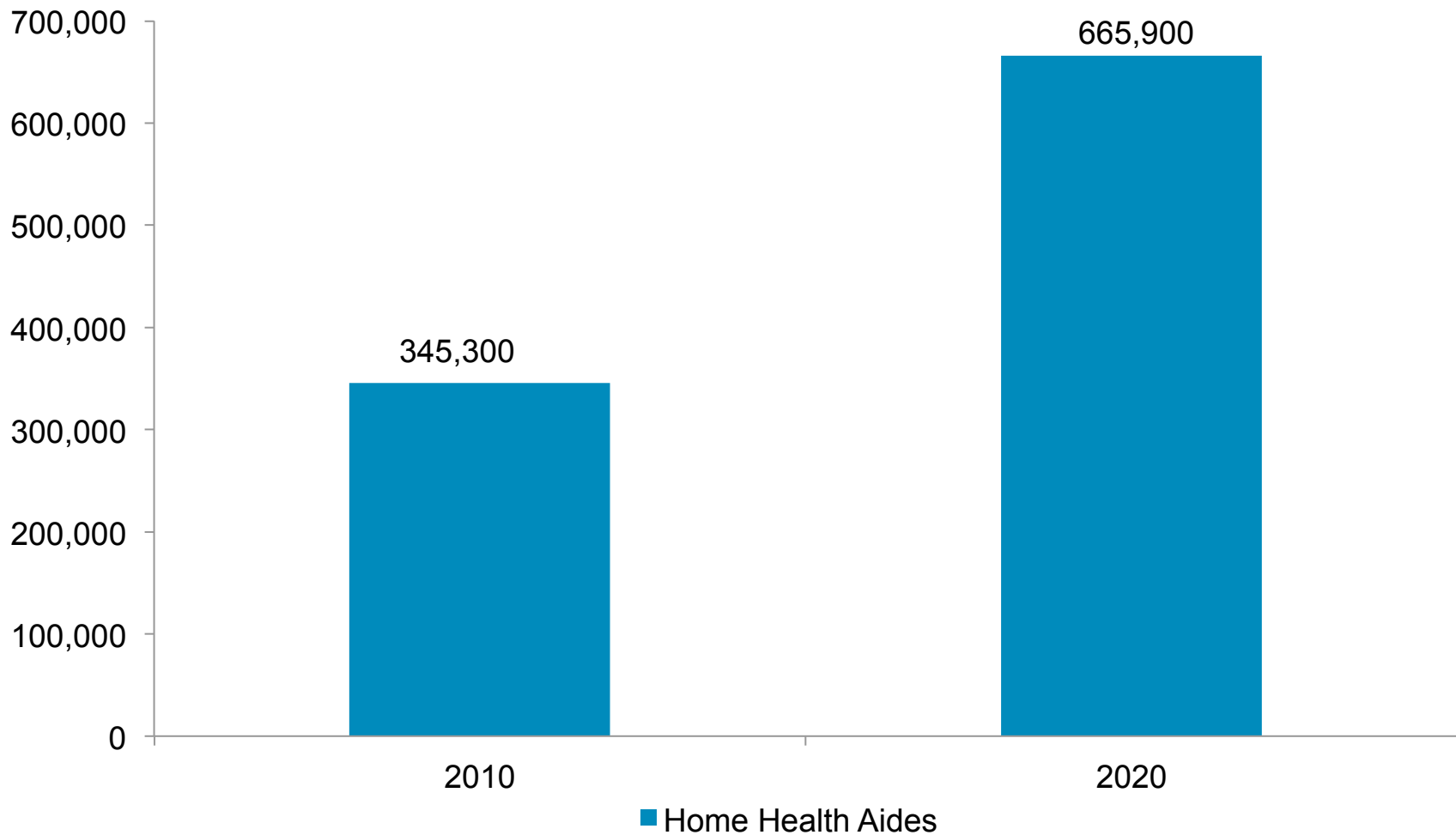
Home Health Care Services Industry Workforce

Chart 4.1: Total Number of Home Health Aides Employed in the Home Health Care Services Industry, 2001-2012



Home Health Care Services Industry Workforce

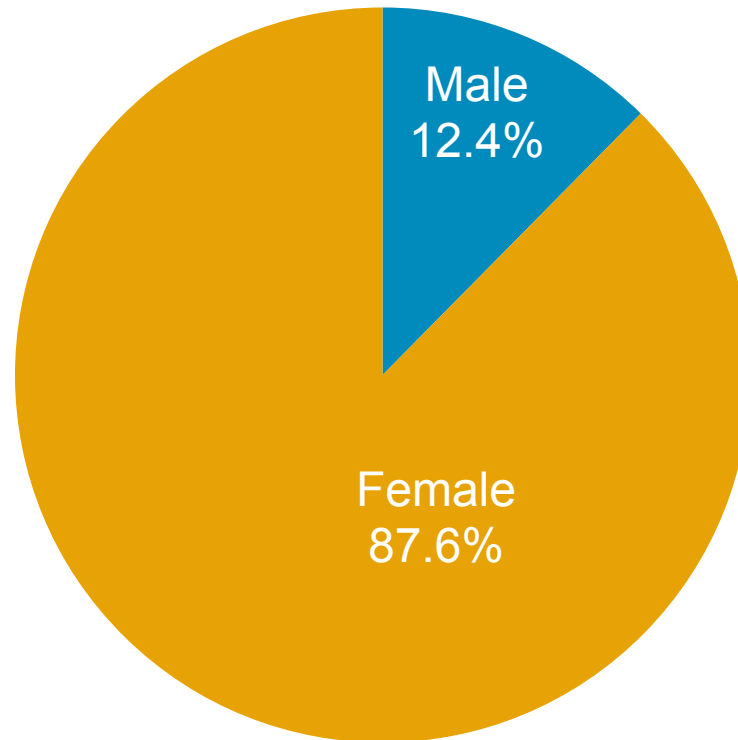
Chart 4.2: Number of Home Health Aides Employed in the Home Health Care Services Industry, 2010 and 2020 (projected)



Home Health Care Services Industry Workforce

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

Home Health Care Workers by Sex





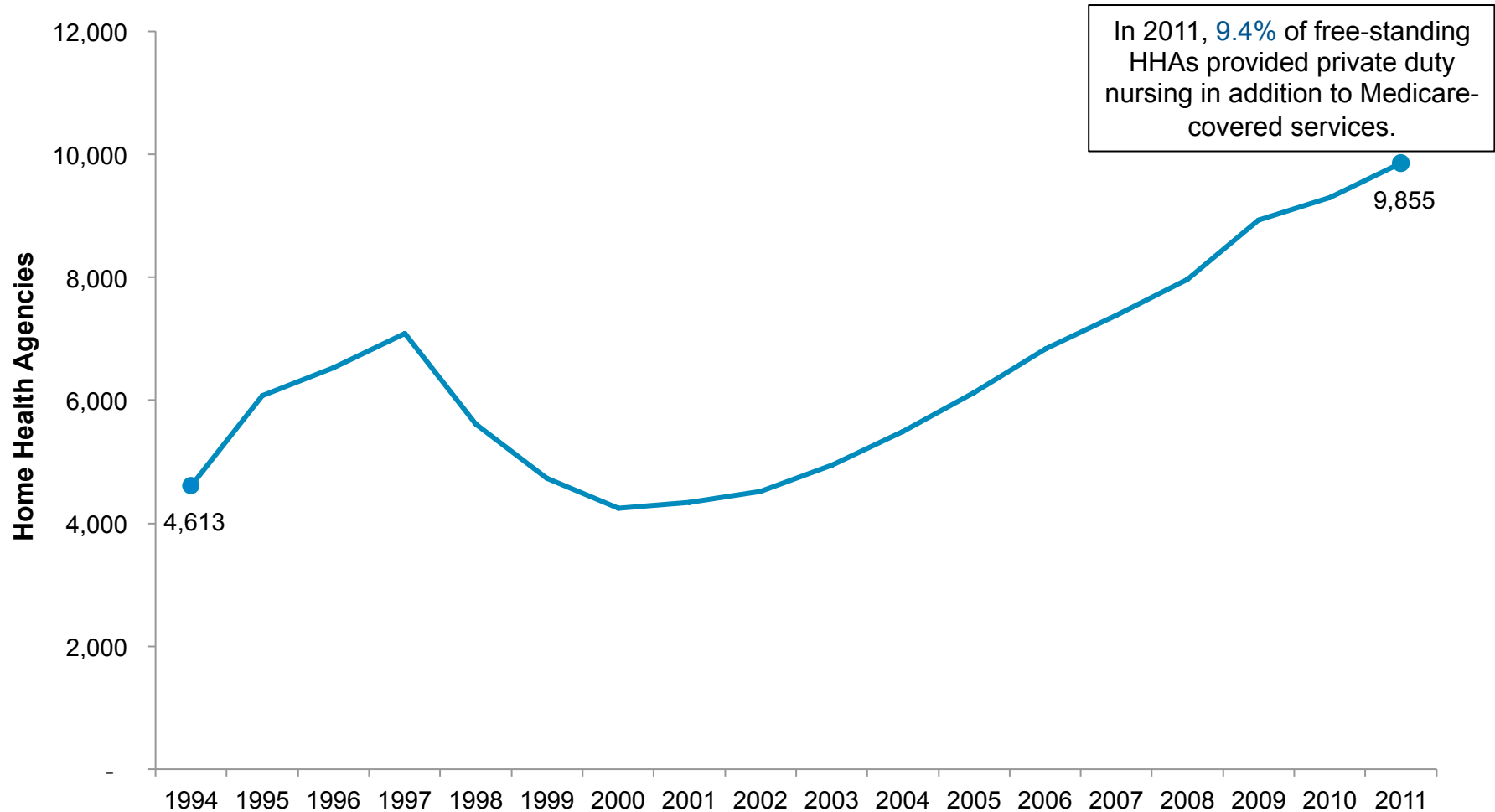
Section 5: Organizational Trends in Home Health



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Organizational Trends in Home Health

Chart 5.1: Number of Medicare-Certified Free-Standing Home Health Agencies (HHAs), 1994-2011



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

Organizational Trends in Home Health

Chart 5.2: Percentage of Home Health Care Services Firms by Number of Employees, 2010

Number of Employees	Number of Firms	Percentage of Firms
0-4	7,161	36.8%
5-9	1,929	9.9%
10-19	2,522	13.0%
20-99	5,355	27.5%
100-499	1,726	8.9%
500+	764	3.9%
Total	19,457	100.0%

Source: Census Bureau. 2010 County Business Patterns. Home Health Care Services firms are identified by NAICS code 621610.

Organizational Trends in Home Health

Chart 5.3: Percentage of Home Health Care Services Establishments by Receipts/Revenue, 2007

Receipts/Revenue	Number of Establishments	Percentage of Establishments
less than \$10,000	309	1.57%
\$10,000 to \$24,999	514	2.61%
\$25,000 to \$49,999	643	3.26%
\$50,000 to \$99,999	919	4.66%
\$100,000 to \$249,999	2,003	10.17%
\$250,000 to \$499,999	2,164	10.98%
\$500,000 to \$999,999	3,145	15.96%
\$1,000,000 to \$2,499,999	5,179	26.29%
\$2,500,000 to \$4,999,999	2,724	13.83%
\$5,000,000 to \$9,999,999	1,342	6.81%
\$10,000,000 or more	760	3.86%
Establishments operated for the entire year	19,702	100.00%

Source: Census Bureau. 2007 Economic Census.

http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2007_US_62SSSZ1&prodType=table

Home Health Care Services firms are identified by NAICS code 621610.

Organizational Trends in Home Health

Chart 5.4: Percentage of Agencies Operating in Total Health Professional Shortage Area (HPSA) Counties by Agency Size, 2011

HHA Size (Medicare Revenue in 2012)	Number of Agencies in Area Where Whole County is HPSA	Total Number of Agencies	Percent of Agencies Where Whole County is HPSA
<\$500,000	1,219	2,823	43%
\$500,000 - \$1,000,000	956	2,226	43%
\$1,000,001 - \$1,500,000	569	1,329	43%
\$1,500,001 - \$2,000,000	311	854	36%
\$2,000,001 - \$3,000,000	377	940	40%
\$3,000,001 - \$4,000,000	192	487	39%
Over \$4,000,000	267	1,005	27%
Total	3,891	9,664	40%

Source: Dobson | DaVanzo analysis of home health agency cost reports (freestanding and hospital-based). HPSA designation provided from the 2012-13 Area Health Resource File. Includes only agencies with completed cost reports for 2011, prior to trimming.

Organizational Trends in Home Health

Chart 5.5: Percentage of Agencies by Income and Majority-Minority Status, 2011

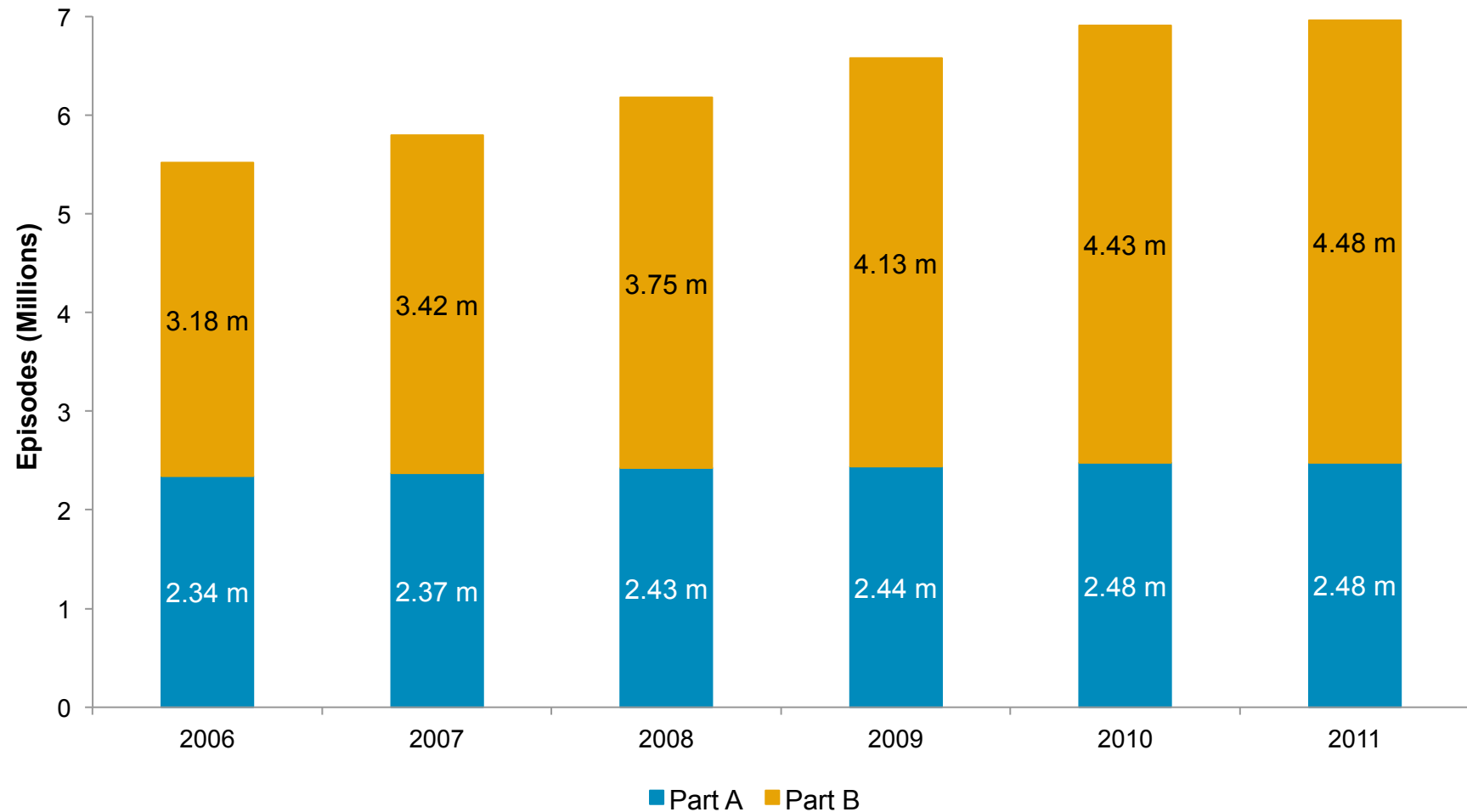
HHA Size (Medicare Revenue in 2012)	Number of Agencies	Percent of Agencies in “Majority-Minority” Counties	Average County Median Income (\$)
<\$500,000	2,779	44%	51,514
\$500,000 - \$1,000,000	2,209	47%	50,744
\$1,000,001 - \$1,500,000	1,325	47%	50,594
\$1,500,001 - \$2,000,000	851	42%	51,004
\$2,000,001 - \$3,000,000	938	36%	51,256
\$3,000,001 - \$4,000,000	487	36%	51,364
Over \$4,000,000	1,005	25%	53,264
Total/Average*	9,594	42%	51,315

Source: Avalere Health analysis of U.S. Census Bureau data. Includes agencies with completed 2011 cost reports, untrimmed. Majority-minority defined as areas where at least half the population reports their race and ethnicity as something other than non-Hispanic white.

*The average county median income for all agencies is \$51,315.

Organizational Trends in Home Health

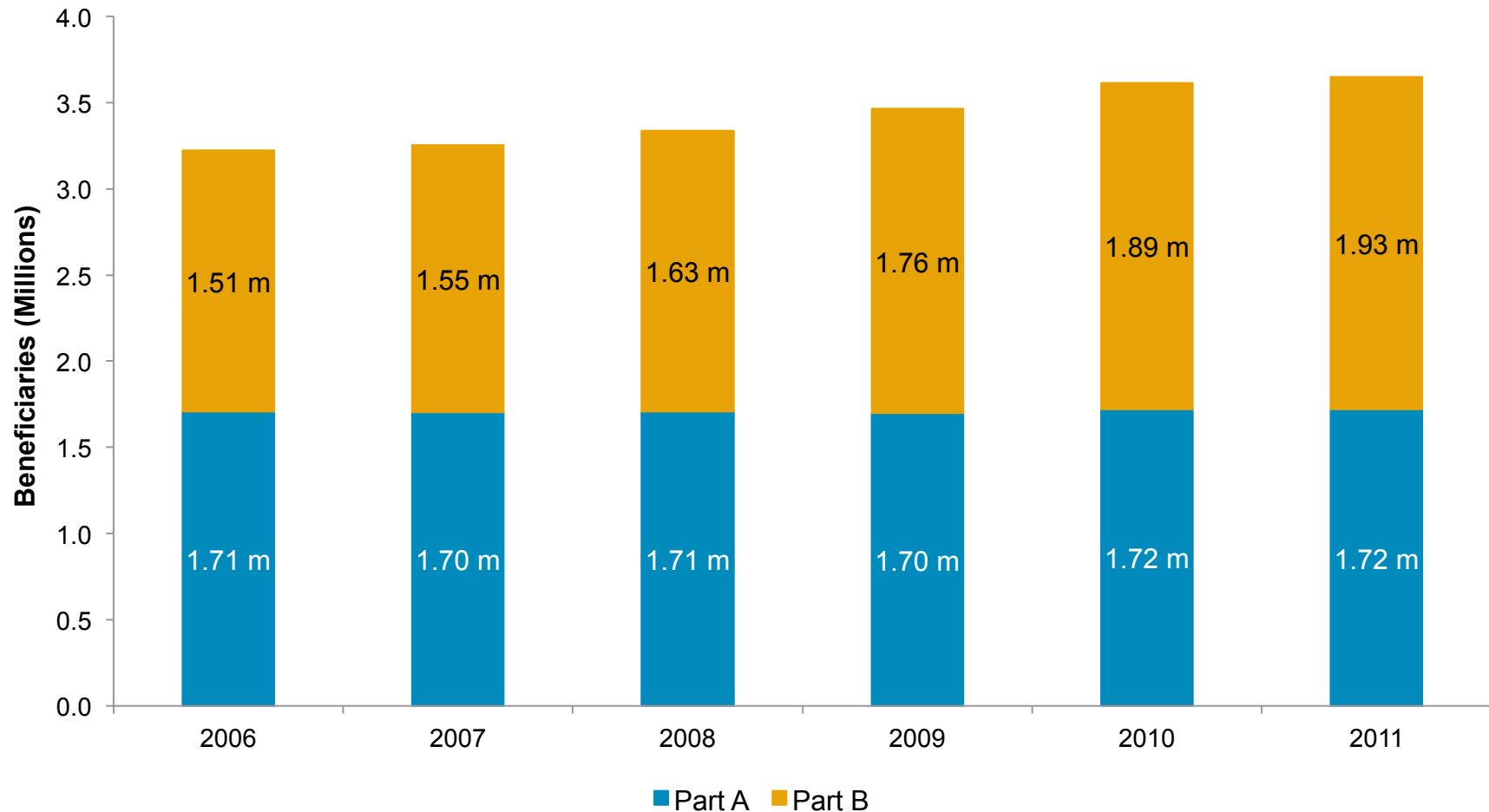
Chart 5.6: Number of Medicare Part A and Part B Home Health Episodes, in Millions, 2006-2011



Source: Avalere Health, LLC analysis of Medicare Standard Analytic Files, 2006 - 2011

Organizational Trends in Home Health

Chart 5.7: Number of Medicare Part A and Part B Beneficiaries with a Home Health Episode, in Millions, 2006-2011



Source: Avalere Health, LLC analysis of Medicare Standard Analytic Files, 2006 - 2011

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

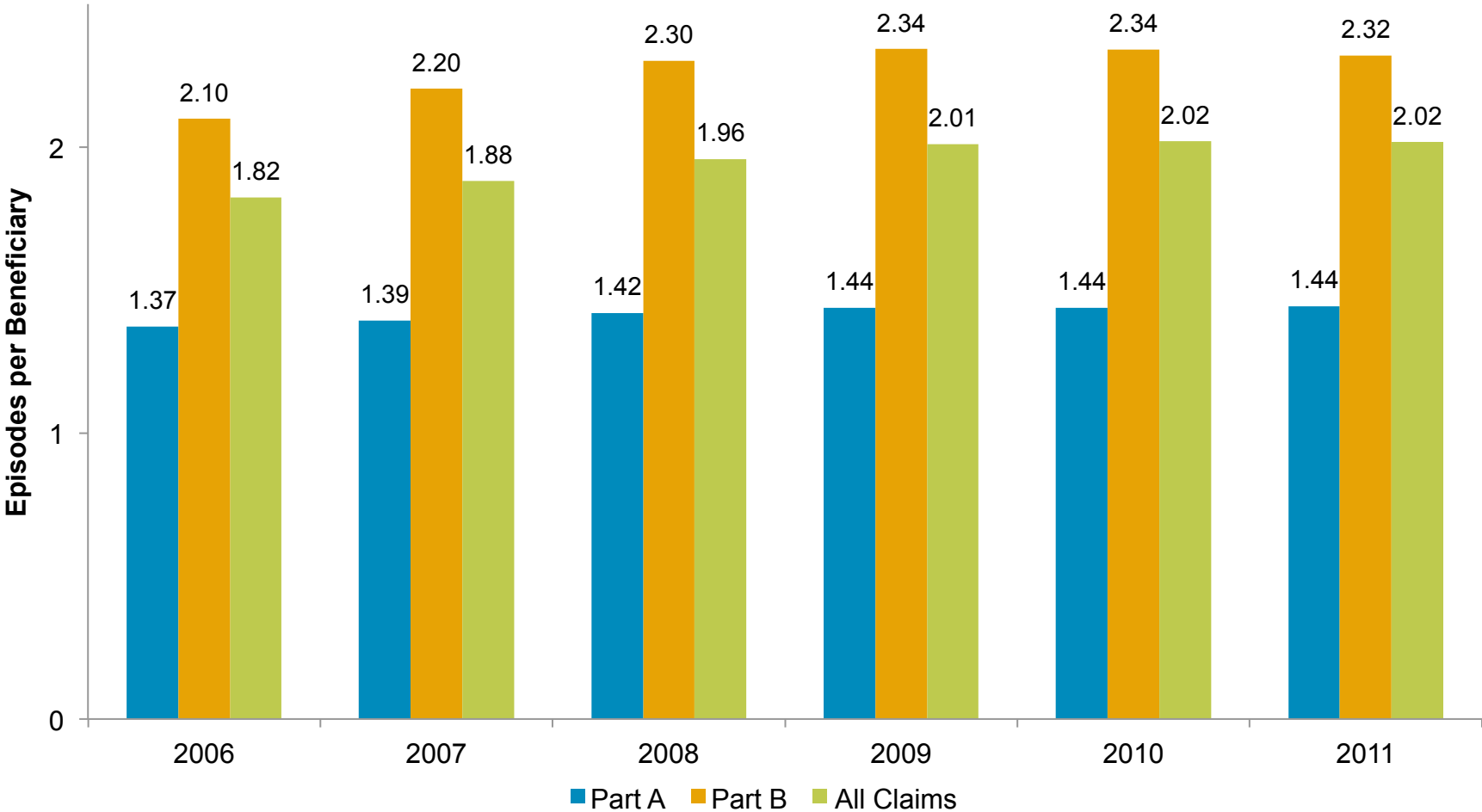
Chart 5.8: Number of Medicare Beneficiaries with a Home Health Episode, by State, 2011

State	Number of Beneficiaries	State	Number of Beneficiaries
Alabama	70,526	Montana	6,656
Alaska	2,536	Nebraska	14,755
Arizona	36,337	Nevada	24,041
Arkansas	35,621	New Hampshire	19,596
California	271,404	New Jersey	98,140
Colorado	33,605	New Mexico	16,603
Connecticut	51,995	New York	188,666
Delaware	11,499	North Carolina	106,084
D.C.	6,135	North Dakota	4,308
Florida	344,535	Ohio	118,409
Georgia	87,067	Oklahoma	66,943
Hawaii	3,005	Oregon	21,737
Idaho	11,519	Pennsylvania	143,374
Illinois	195,860	Rhode Island	12,814
Indiana	62,021	South Carolina	51,514
Iowa	24,395	South Dakota	4,594
Kansas	23,607	Tennessee	83,230
Kentucky	60,360	Texas	363,035
Louisiana	77,795	Utah	18,771
Maine	19,618	Vermont	9,602
Maryland	58,699	Virginia	87,676
Massachusetts	110,491	Washington	41,305
Michigan	155,746	West Virginia	21,722
Minnesota	32,076	Wisconsin	34,491
Mississippi	56,570	Wyoming	3,521
Missouri	67,102	Total U.S.	3,486,004

Source: Avalere Health, LLC analysis of Medicare Standard Analytic Files, 2011

Organizational Trends in Home Health

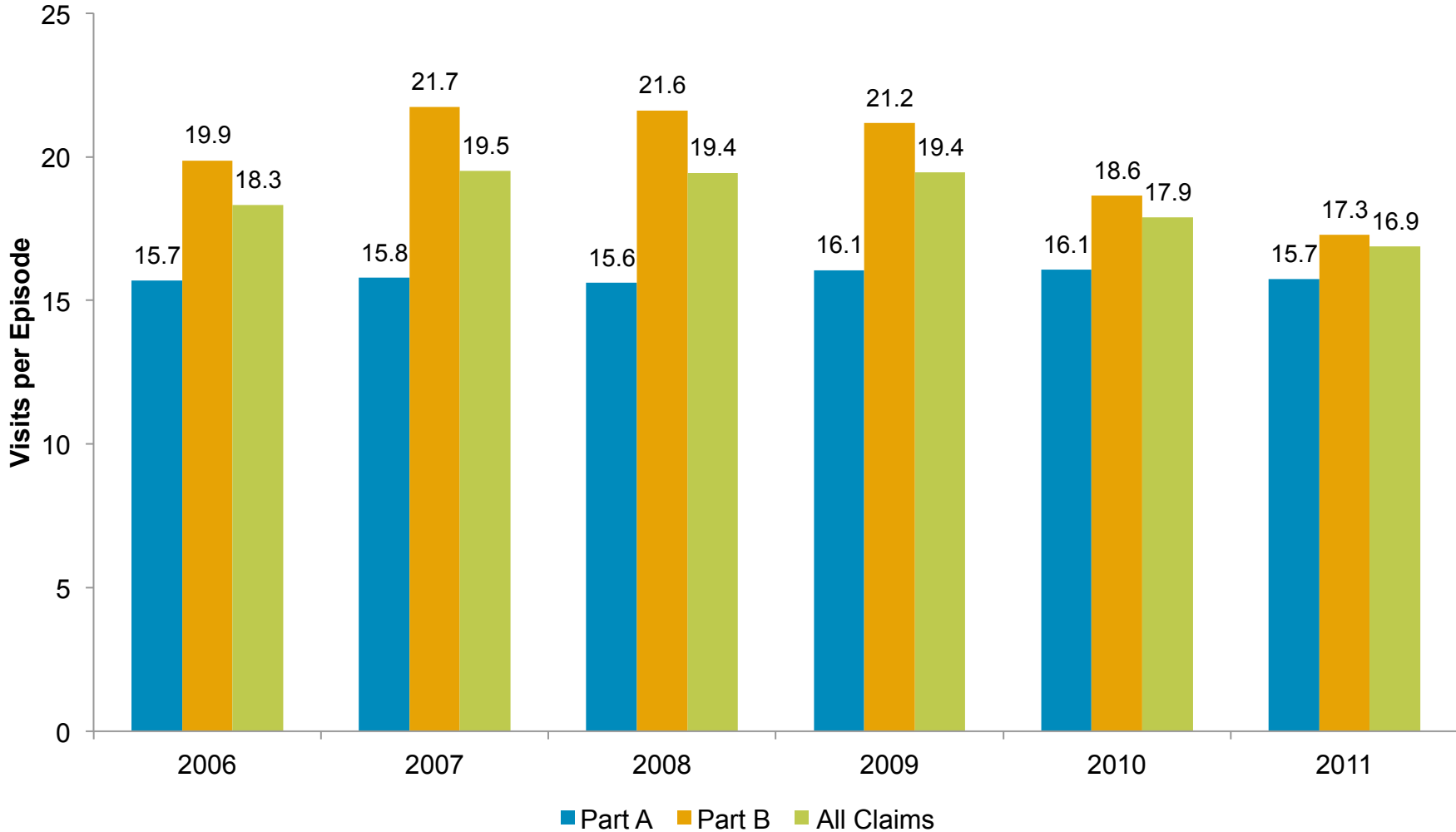
Chart 5.9: Number of Home Health Episodes per Medicare Home Health User by Part A, Part B, and All Claims, 2006-2011



Source: Avalere Health, LLC analysis of Medicare Standard Analytic Files, 2006 – 2011
 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 5.10: Number of Home Health Visits per Episode by Part A, Part B, and All Claims, 2006-2011



Source: Avalere Health, LLC analysis of Medicare Standard Analytic Files, 2006 – 2011



Section 6: Economic Contribution of Home Health Agencies



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Economic Contribution of Home Health Agencies

Chart 6.1: Impact of Home Health on Jobs, by State, 2011

State	Number of Home Health Jobs	Multiplier for Employment	Total Jobs Created by Home Health Industry	State	Number of Home Health Jobs	Multiplier for Employment	Total Jobs Created by Home Health Industry
Alabama	11,909	1.5758	18,766	Montana	2,369	1.3255	3,140
Alaska	1,895	1.2714	2,409	Nebraska	2,779	1.3295	3,695
Arizona	20,574	1.4602	30,042	Nevada	5,023	1.4888	7,478
Arkansas	4,207	1.3294	5,593	New Hampshire	3,998	1.4294	5,715
California	65,678	1.5408	101,197	New Jersey	36,674	1.4508	53,207
Colorado	14,351	1.4562	20,898	New Mexico	11,827	1.3438	15,893
Connecticut	13,467	1.456	19,608	New York	121,824	1.3322	162,294
Delaware	3,022	1.4387	4,348	North Carolina	40,368	1.3976	56,418
D.C	4,842	1.1203	5,424	North Dakota	536	1.2414	665
Florida	65,557	1.5751	103,259	Ohio	57,086	1.4507	82,815
Georgia	20,849	1.6012	33,383	Oklahoma	19,391	1.4179	27,494
Hawaii	2,686	1.352	3,631	Oregon	3,874	1.5062	5,835
Idaho	6,120	1.3063	7,995	Pennsylvania	38,072	1.585	60,344
Illinois	37,550	1.5291	57,418	Rhode Island	4,793	1.4056	6,737
Indiana	17,444	1.4961	26,098	South Carolina	9,807	1.4864	14,577
Iowa	6,618	1.3107	8,674	South Dakota	970	1.2678	1,230
Kansas	9,101	1.3046	11,873	Tennessee	17,341	1.6487	28,590
Kentucky	8,619	1.623	13,989	Texas	236,588	1.4329	339,007
Louisiana	23,068	1.5042	34,699	Utah	6,344	1.699	10,778
Maine	3,720	1.4697	5,467	Vermont	2,220	1.3777	3,058
Maryland	13,102	1.4979	19,625	Virginia	23,680	1.3806	32,693
Massachusetts	30,557	1.4697	44,910	Washington	9,361	1.4956	14,000
Michigan	35,818	1.4907	53,394	West Virginia	7,202	1.3576	9,777
Minnesota	18,936	1.3687	26,079	Wisconsin	12,300	1.4386	17,695
Mississippi	7,496	1.5404	11,547	Wyoming	545	1.248	680
Missouri	18,245	1.4655	26,068	Total U.S.	1,140,402	NA	1,660,211

Note: This economic impact analysis conducted by Avalere Health used U.S. Bureau of Economic Analysis multipliers in conjunction with employment and wage data from the U.S. Bureau of Labor Statistics and revenue data from CMS Medicare cost reports to determine the indirect effects of home health industry expenditures, including the number of jobs in other sectors supported by the home health industry.

Economic Contribution of Home Health Agencies

Chart 6.2: Impact of Home Health on Labor Income, by State, 2011

State	Home Health Total Wages	Multiplier for Earnings	Total Impact of Home Health Payroll on Labor Income	State	Home Health Total Wages	Multiplier for Earnings	Total Impact of Home Health Payroll on Labor Income
Alabama	\$423,947,688	1.4976	\$634,904,058	Montana	\$52,064,721	1.3767	\$71,677,501
Alaska	\$46,182,973	1.3612	\$62,864,263	Nebraska	\$85,710,882	1.3416	\$114,989,719
Arizona	\$546,660,293	1.5487	\$846,612,796	Nevada	\$198,818,704	1.4475	\$287,790,074
Arkansas	\$140,063,393	1.4152	\$198,217,714	New Hampshire	\$130,688,553	1.5193	\$198,555,119
California	\$2,149,566,113	1.6564	\$3,560,541,310	New Jersey	\$982,686,885	1.6183	\$1,590,282,186
Colorado	\$405,329,688	1.6464	\$667,334,798	New Mexico	\$235,008,997	1.4287	\$335,757,354
Connecticut	\$520,291,209	1.514	\$787,720,890	New York	\$3,437,075,821	1.472	\$5,059,375,609
Delaware	\$114,529,149	1.4384	\$164,738,728	North Carolina	\$910,858,077	1.5437	\$1,406,091,613
D.C.	\$120,378,802	1.1791	\$141,938,645	North Dakota	\$17,919,990	1.2979	\$23,258,355
Florida	\$2,315,588,680	1.5891	\$3,679,701,971	Ohio	\$1,350,733,972	1.6122	\$2,177,653,310
Georgia	\$679,983,159	1.6395	\$1,114,832,389	Oklahoma	\$473,274,308	1.5035	\$711,567,922
Hawaii	\$69,157,990	1.4941	\$103,328,953	Oregon	\$116,982,272	1.5214	\$177,976,829
Idaho	\$116,184,081	1.3768	\$159,962,243	Pennsylvania	\$1,366,562,076	1.6321	\$2,230,365,964
Illinois	\$1,160,228,194	1.6761	\$1,944,658,476	Rhode Island	\$136,337,782	1.4989	\$204,356,701
Indiana	\$463,757,800	1.5254	\$707,416,148	South Carolina	\$266,686,694	1.547	\$412,564,316
Iowa	\$197,795,515	1.3409	\$265,224,006	South Dakota	\$23,343,155	1.2896	\$30,103,333
Kansas	\$191,751,431	1.386	\$265,767,483	Tennessee	\$621,965,636	1.605	\$998,254,846
Kentucky	\$339,738,602	1.5047	\$511,204,674	Texas	\$4,514,253,211	1.6628	\$7,506,300,239
Louisiana	\$686,008,849	1.488	\$1,020,781,167	Utah	\$192,316,844	1.618	\$311,168,654
Maine	\$108,903,347	1.4983	\$163,169,885	Vermont	\$65,380,496	1.3971	\$91,343,091
Maryland	\$489,665,944	1.5333	\$750,804,792	Virginia	\$623,266,932	1.5392	\$959,332,462
Massachusetts	\$1,100,890,965	1.5785	\$1,737,756,388	Washington	\$303,439,362	1.552	\$470,937,890
Michigan	\$1,072,558,609	1.5865	\$1,701,614,233	West Virginia	\$171,213,656	1.3927	\$238,449,259
Minnesota	\$456,709,946	1.5479	\$706,941,325	Wisconsin	\$308,793,379	1.5256	\$471,095,179
Mississippi	\$285,486,384	1.4144	\$403,791,942	Wyoming	\$15,320,581	1.2794	\$19,601,151
Missouri	\$505,606,777	1.5621	\$789,808,346	Total U.S.	\$31,307,668,567	NA	\$49,190,486,299

Note: This economic impact analysis conducted by Avalere Health used U.S. Bureau of Economic Analysis multipliers in conjunction with employment and wage data from the U.S. Bureau of Labor Statistics and revenue data from CMS Medicare cost reports to determine the indirect effects of home health industry expenditures, including the number of jobs in other sectors supported by the home health industry.

Economic Contribution of Home Health Agencies

Chart 6.3: Impact of Home Health on Output, by State, 2011

State	Home Health Expenditures	Multiplier for Output	Total Impact of Home Health Spending on Output
Alabama	\$542,180,891	2.0235	\$1,097,103,033
Alaska	\$1,559,028,290	1.7605	\$2,744,669,305
Arizona	\$425,593,878	2.0914	\$890,087,036
Arkansas	\$296,677,903	1.8683	\$554,283,326
California	\$1,666,186,512	2.3434	\$3,904,541,472
Colorado	\$1,728,373,802	2.3077	\$3,988,568,223
Connecticut	\$574,291,168	2.071	\$1,189,357,009
Delaware	\$116,211,855	1.9025	\$221,093,054
D.C.	\$137,395,869	1.2846	\$176,498,733
Florida	\$3,009,849,980	2.1718	\$6,536,792,187
Georgia	\$356,345,019	2.2989	\$819,201,564
Hawaii	\$19,930,059	1.9948	\$39,756,482
Idaho	\$59,813,290	1.7576	\$105,127,839
Illinois	\$1,674,623,310	2.3806	\$3,986,608,252
Indiana	\$400,495,308	2.0914	\$837,595,887
Iowa	\$616,212,716	1.7258	\$1,063,459,905
Kansas	\$152,245,542	1.8239	\$277,680,644
Kentucky	\$149,175,381	2.0441	\$304,929,396
Louisiana	\$2,294,028,524	1.9632	\$4,503,636,798
Maine	\$179,096,423	2.0059	\$359,249,515
Maryland	\$507,924,540	2.061	\$1,046,832,477
Massachusetts	\$2,320,183,750	2.1685	\$5,031,318,462
Michigan	\$1,324,575,803	2.1816	\$2,889,694,572
Minnesota	\$389,476,962	2.1281	\$828,845,923
Mississippi	\$598,144,073	1.8568	\$1,110,633,915
Missouri	\$480,768,249	2.1577	\$1,037,353,651
Montana	\$88,770,465	1.7735	\$157,434,420
Nebraska	\$96,288,462	1.7135	\$164,990,280
Nevada	\$1,517,021,833	1.9147	\$2,904,641,704
New Hampshire	\$169,172,266	2.0366	\$344,536,237
New Jersey	\$410,425,486	2.2832	\$937,083,470
New Mexico	\$131,109,712	1.8549	\$243,195,405
New York	\$4,016,630,669	2.0241	\$8,130,062,137
North Carolina	\$656,523,476	2.1121	\$1,386,643,234
North Dakota	\$8,716,869	1.6213	\$14,132,660
Ohio	\$2,599,094,900	2.2534	\$5,856,800,448
Oklahoma	\$464,416,135	2.015	\$935,798,512
Oregon	\$93,968,045	2.0595	\$193,527,189
Pennsylvania	\$1,200,904,494	2.2965	\$2,757,877,170
Rhode Island	\$111,933,790	2.0129	\$225,311,526
South Carolina	\$144,374,414	2.1414	\$309,163,370
South Dakota	\$22,538,331	1.6239	\$36,599,996
Tennessee	\$577,243,066	2.2537	\$1,300,932,698
Texas	\$4,034,673,154	2.368	\$9,554,106,029
Utah	\$242,401,359	2.27	\$550,251,085
Vermont	\$90,182,608	1.8162	\$163,789,653
Virginia	\$530,886,108	2.1116	\$1,121,019,106
Washington	\$210,372,334	2.1384	\$449,860,199
West Virginia	\$57,918,932	1.8084	\$104,740,597
Wisconsin	\$326,532,989	2.0666	\$674,813,075
Wyoming	\$14,158,371	1.5947	\$22,578,354
Total U.S.	\$39,476,971,689	NA	\$84,084,807,209

Note: This economic impact analysis conducted by Avalere Health used U.S. Bureau of Economic Analysis multipliers in conjunction with employment and wage data from the U.S. Bureau of Labor Statistics and revenue data from CMS Medicare cost reports to determine the indirect effects of home health industry expenditures, including the number of jobs in other sectors supported by the home health industry.



Section 7: Outcomes



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Outcomes: Rehospitalization Among Post-Acute Care Users

Chart 7.1: 30-Day Rehospitalization Rates for Top 20 Most Common DRGs Discharged from Hospital to Selected Post Acute Care (PAC) Settings, by Setting, 2011

MS-DRG	Percent of Home Health Users Rehospitalized Within 30 Days	Percent of Skilled Nursing Facility Users Rehospitalized Within 30 Days
MAJOR JOINT REPLACEMENT OR REATTACHMENT OF LOWER EXTREMITY W/O MCC	4.29%	8.35%
SEPTICEMIA OR SEVERE SEPSIS W/O MV 96+ HOURS W MCC	24.47%	25.88%
KIDNEY & URINARY TRACT INFECTIONS W/O MCC	21.06%	16.85%
HEART FAILURE & SHOCK W CC	26.20%	25.57%
HEART FAILURE & SHOCK W MCC	28.48%	29.25%
HIP & FEMUR PROCEDURES EXCEPT MAJOR JOINT W CC	9.22%	13.01%
SIMPLE PNEUMONIA & PLEURISY W CC	19.34%	19.42%
INTRACRANIAL HEMORRHAGE OR CEREBRAL INFARCTION W CC	14.78%	17.58%
RENAL FAILURE W CC	25.11%	22.10%
NUTRITIONAL & MISC METABOLIC DISORDERS W/O MCC	23.08%	18.01%
CELLULITIS W/O MCC	15.21%	16.81%
SIMPLE PNEUMONIA & PLEURISY W MCC	22.36%	24.48%
CHRONIC OBSTRUCTIVE PULMONARY DISEASE W MCC	24.70%	26.42%
SEPTICEMIA OR SEVERE SEPSIS W/O MV 96+ HOURS W/O MCC	20.25%	19.91%
ESOPHAGITIS, GASTROENT & MISC DIGEST DISORDERS W/O MCC	21.88%	19.02%
CHRONIC OBSTRUCTIVE PULMONARY DISEASE W CC	25.12%	24.09%
RENAL FAILURE W MCC	28.43%	27.66%
SYNCOPE & COLLAPSE	15.85%	14.92%
KIDNEY & URINARY TRACT INFECTIONS W MCC	23.90%	20.52%
G.I. HEMORRHAGE W CC	20.15%	20.18%
Average Rate Across All MS-DRGs	19.17%	20.05%

Source: Avalere Health, LLC, analysis of Medicare Standard Analytic Files, 2011
 Note: CC is complication or comorbidity. MCC is major complication or comorbidity.

Outcomes: Quality of Home Health Care

Chart 7.2: National Averages for How Often Home Health Team Met Quality Measures Related to Patient Care, 2013

Measure	Percent
Checked patients for pain	99
Treated heart failure symptoms	98
Checked patients for the risk of developing pressure sores (bed sores)	98
Checked patients for depression	97
Treated patients' pain	98
Checked patients' risk of falling	94
Included treatments to prevent pressure sores (bed sores) in the plan of care	96
Took doctor-ordered action to prevent pressure sores (bed sores)	95
For diabetic patients, got doctor's orders, gave and educated about foot care	93
Began care in timely manner	92
Taught patients (or their family caregivers) about their drugs	92
Determined whether patients received a flu shot for the current flu season	69
Determined whether patients received a pneumococcal vaccine (pneumonia shot)	68

Source: Medicare Home Health Compare. April 18, 2013.

Outcomes: Quality of Home Health Care

Chart 7.3: National Averages for Patient Outcomes while in Home Health Care, 2013

Measure	Percent
Wounds improved or healed after operation	89
Had less pain when moving around	67
Got better at bathing	66
Breathing improved	64
Got better at walking or moving around	59
Got better at getting in and out of bed	55
Got better at taking drugs correctly by mouth	49
Had to be admitted to hospital	17

Source: Medicare Home Health Compare. April 18, 2013.



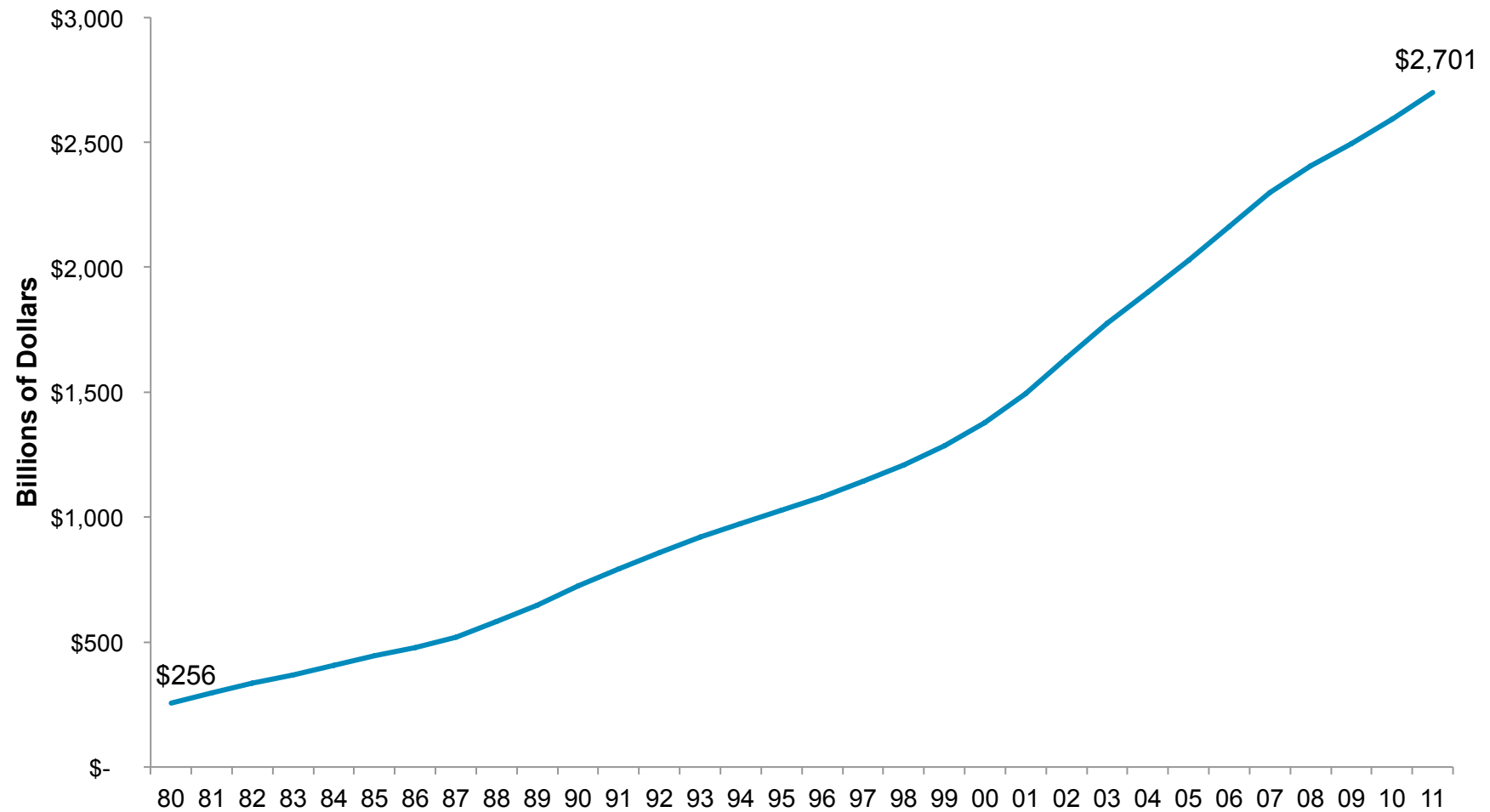
Section 8: National Trends



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National Trends

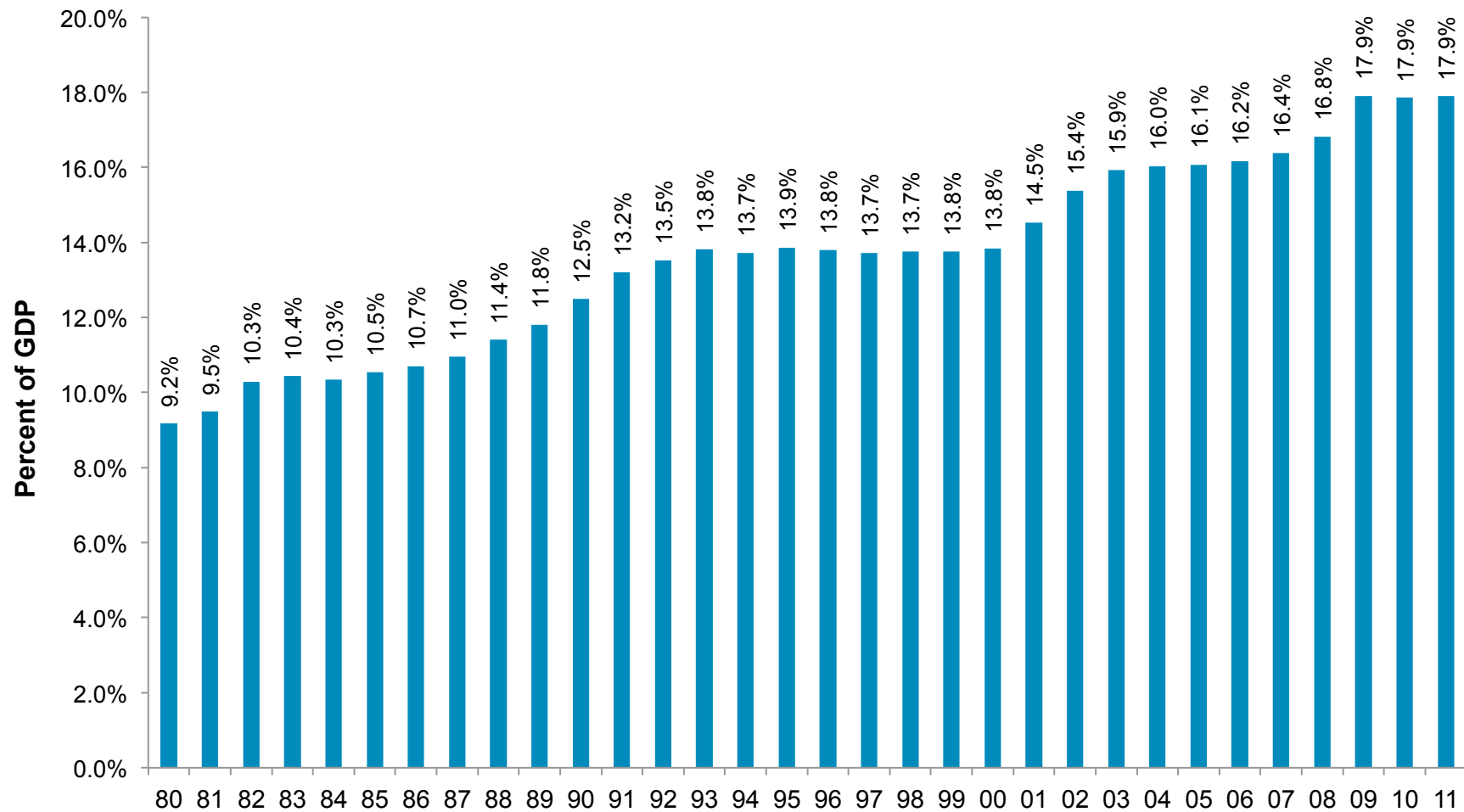
Chart 8.1: National Healthcare Expenditures, Billions of Dollars, 1980-2011



Source: Centers for Medicare and Medicaid Services, National Healthcare Expenditures Accounts, 2013

National Trends

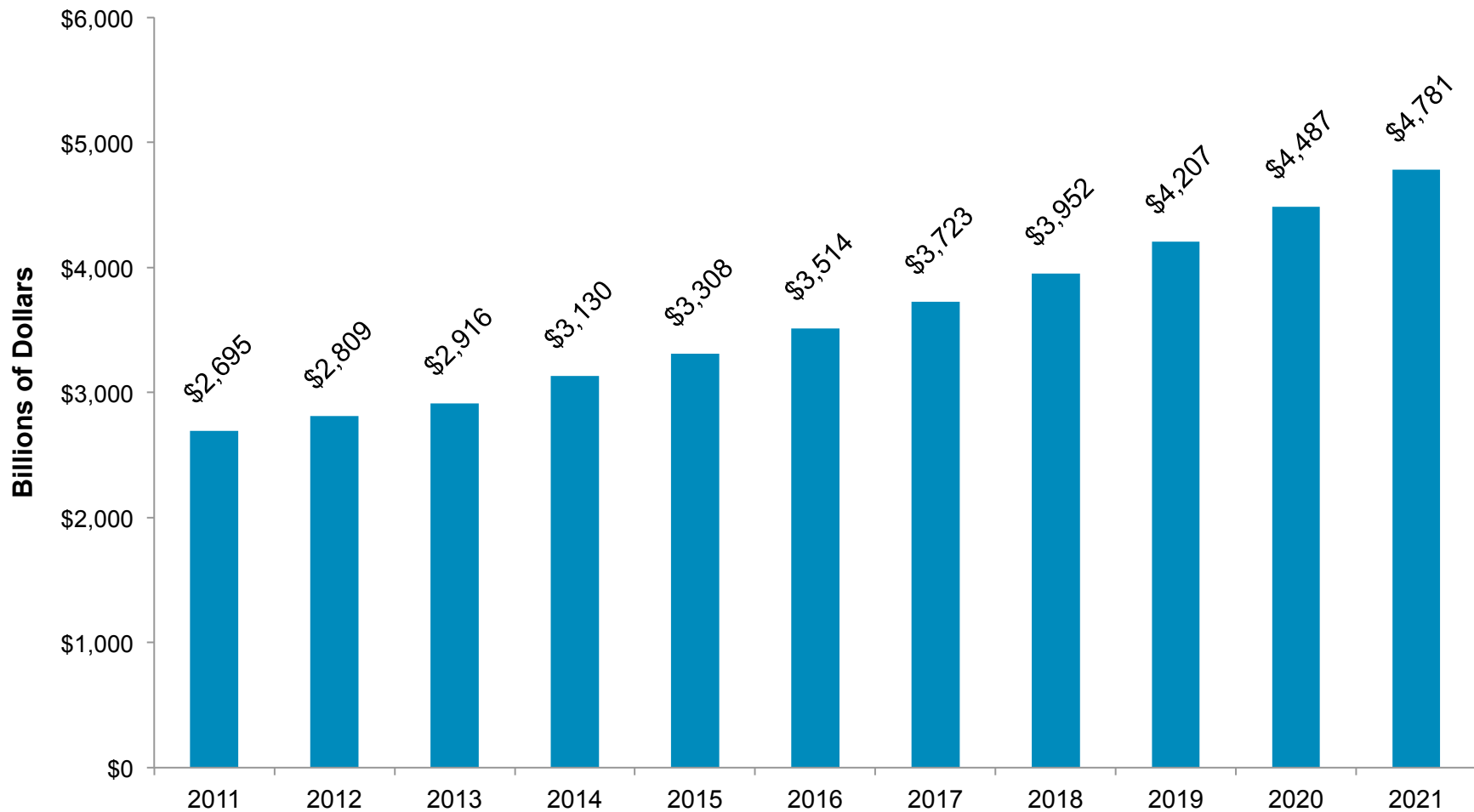
Chart 8.2: National Healthcare Expenditures, as a Percentage of Gross Domestic Product, 1980-2011



Source: Centers for Medicare and Medicaid Services, National Healthcare Expenditures Accounts, 2013

National Trends

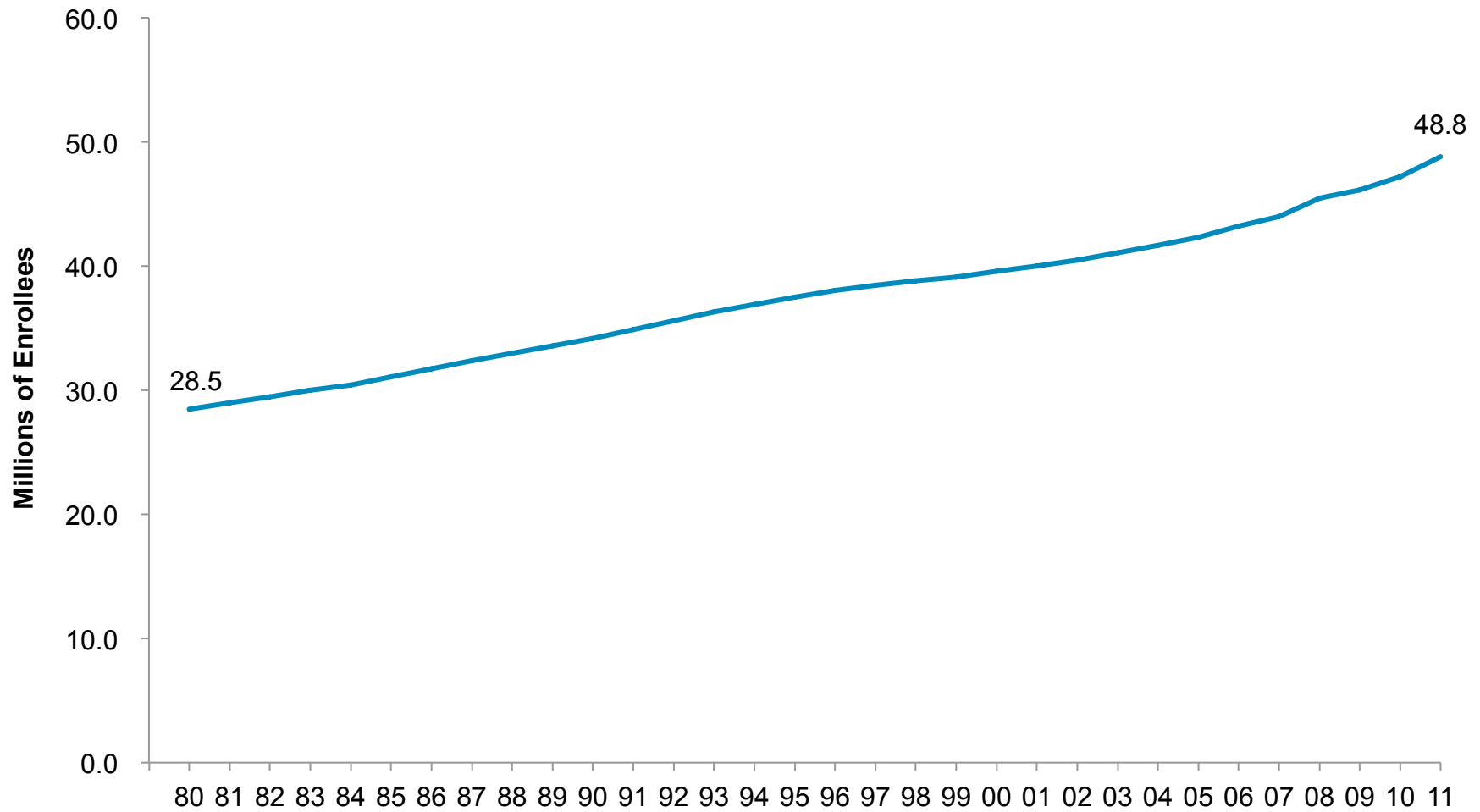
Chart 8.3: Projected National Healthcare Expenditures, Billions of Dollars, 2011-2021



Source: Centers for Medicare and Medicaid Services, National Healthcare Expenditures Projections, 2012

National Trends

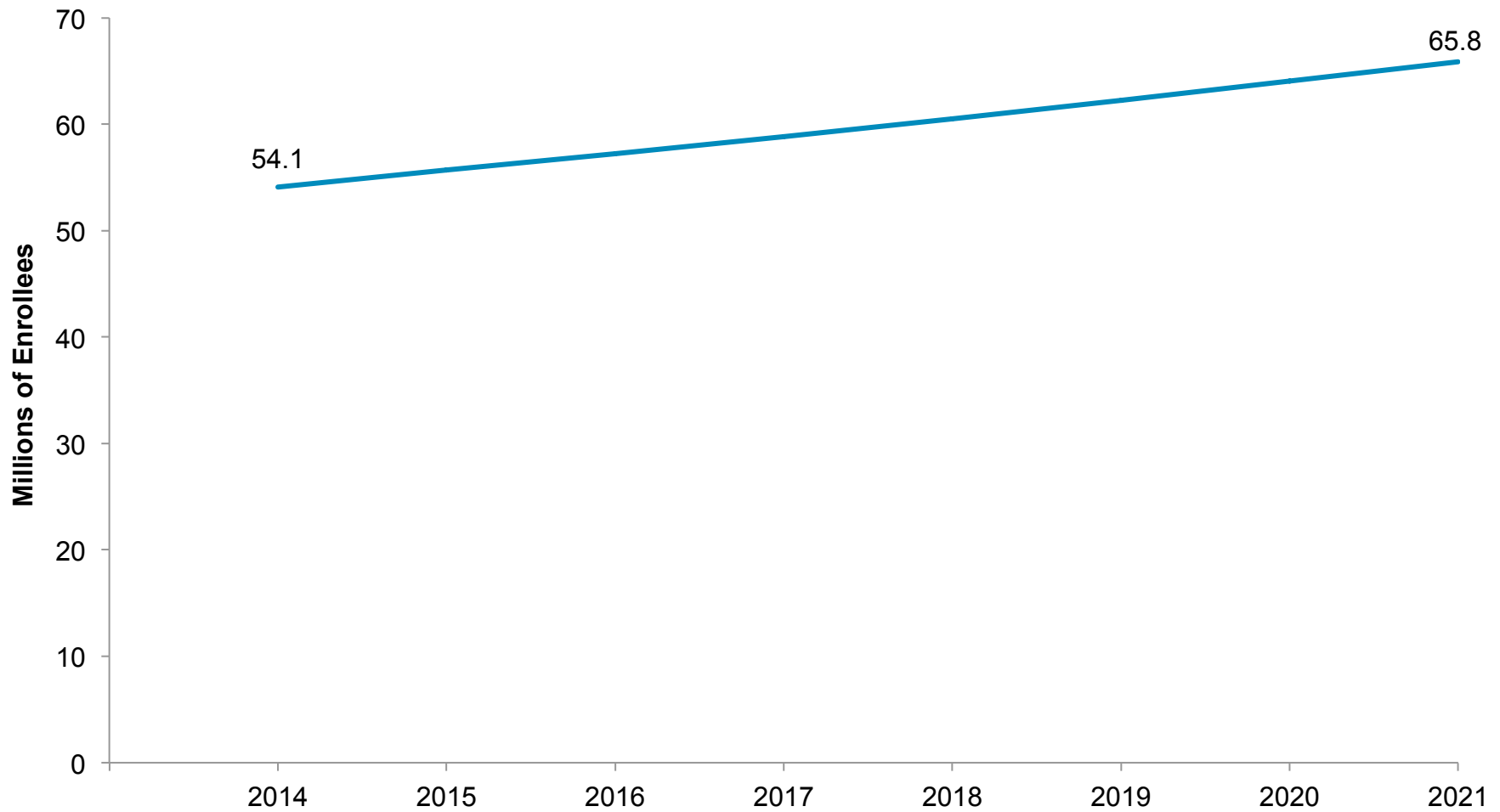
Chart 8.4: Total Medicare Enrollees, in Millions, 1980-2011



Source: Centers for Medicare & Medicaid Services. Medicare Enrollment: National Trends, 1966 – 2011

National Trends

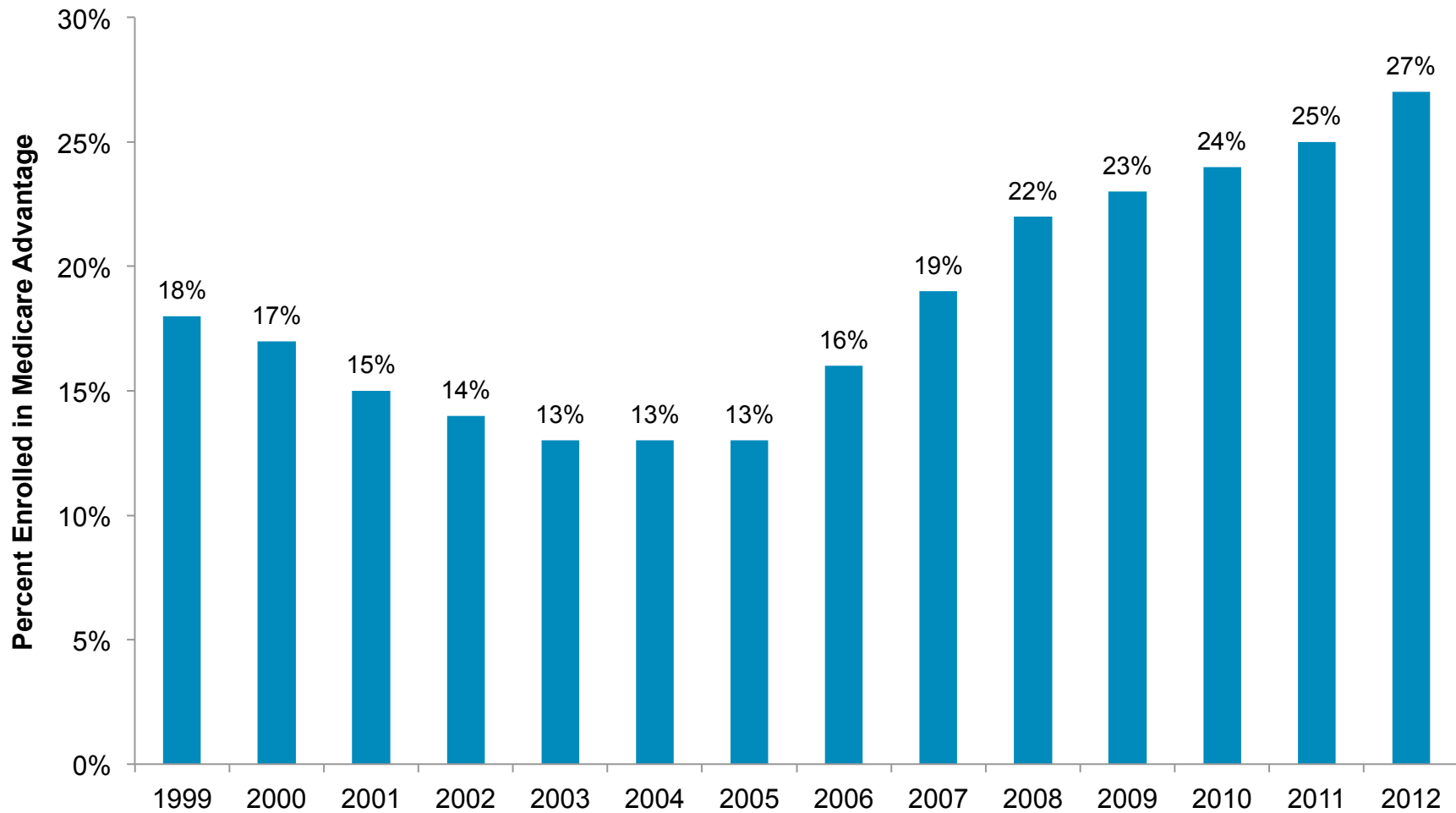
Chart 8.5: Projected Medicare Enrollees, in Millions, 2014-2021



Source: Centers for Medicare & Medicaid Services, Office of the Actuary. Medicare Enrollment, 1970 – 2085. Data released April 23, 2012.

National Trends

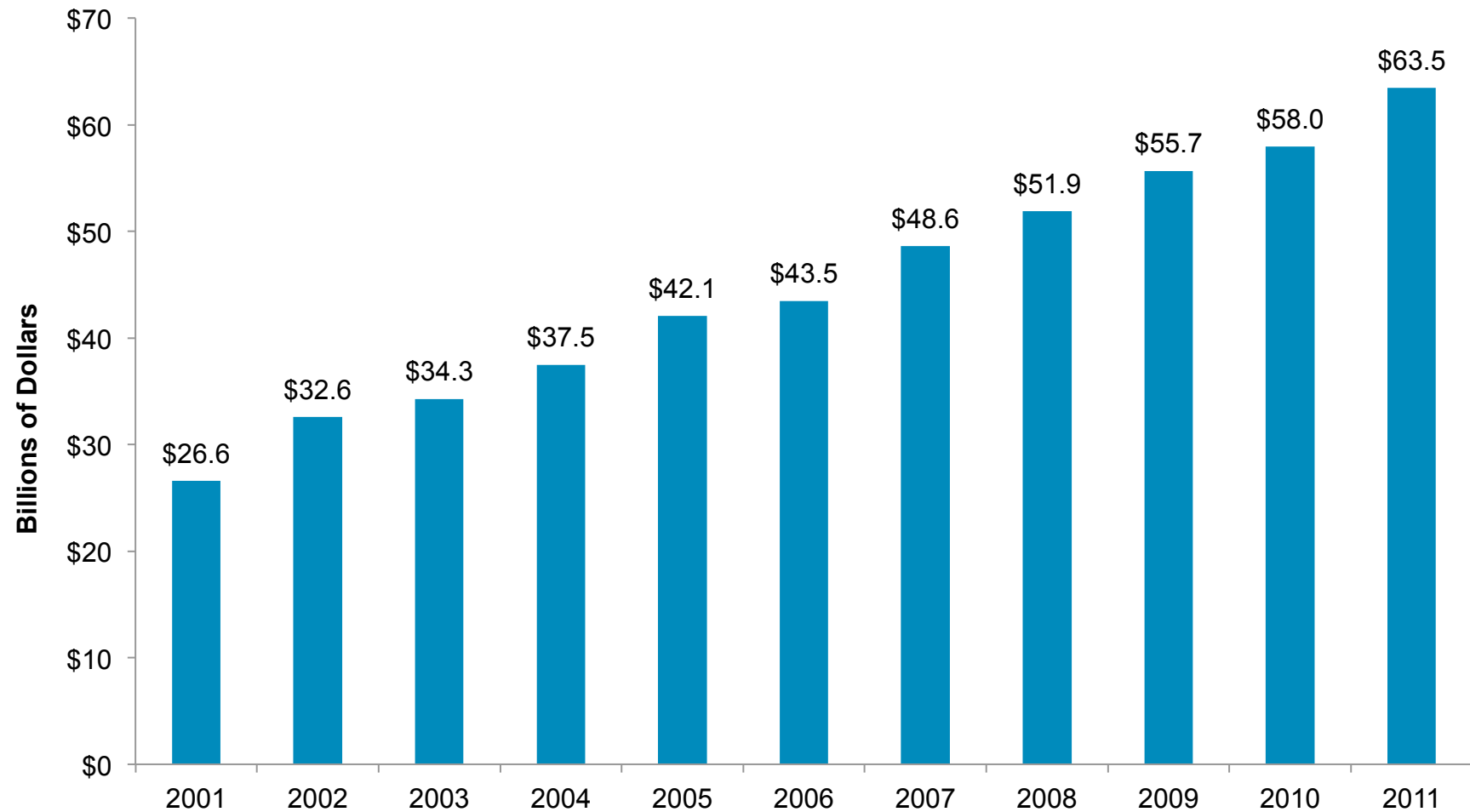
Chart 8.6: Percentage of Medicare Beneficiaries Enrolled in Medicare Advantage, 1999-2012



Source: Kaiser Family Foundation. Medicare Advantage 2012 Data Spotlight: Enrollment Market Update. 2013.

National Trends

Chart 8.7: Total Medicare Post-acute Care Expenditures, Billions of Dollars, 2001-2011



Source: Medicare Payment Advisory Commission. A Data Book: Health Care Spending and the Medicare Program. June 2012.

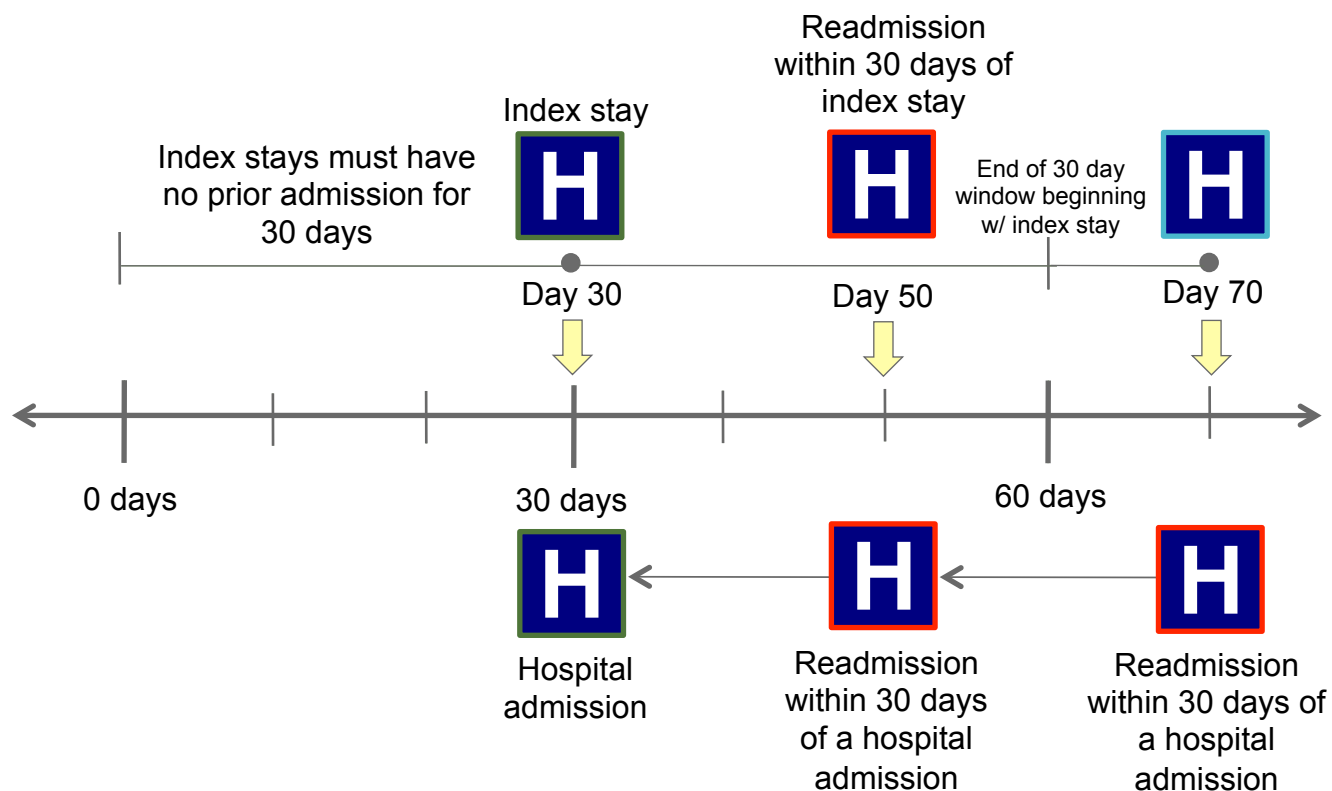


Appendix A: Readmission Rate Methodology



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Methodology: Calculating Readmission Rates



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

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.



Appendix B: Dobson/DaVanzo Clinically Appropriate and Cost- Effective Placement (CACEP) Study



The intersection of business
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MS-DRGs Ranked by Medicare Episode Payment Show Considerable Overlap by First Setting

Overall Top 9 MS-DRGs Ranked by Medicare Episode Payment for Post-Acute Care Episodes by Select First Setting (2007-2009)

MS-DRG	Med/Surg	Overall	HHA	SNF	IRF	LTCH
470: Major joint replacement or reattachment of lower extremity w/o MCC	Surgical	1	1	1	1	34
871: Septicemia or severe sepsis w/o MV 96+ hours w MCC	Medical	2	6	3	20	3
291: Heart failure & shock w MCC	Medical	3	2	7	29	9
003: ECMO or trach w MV 96+ hrs or PDX exc face, mouth & neck w maj O.R.	Surgical	4	91	31	10	1
194: Simple pneumonia & pleurisy w CC	Medical	5	9	5	65	22
481: Hip & femur procedures except major joint w CC	Surgical	6	73	2	3	53
292: Heart failure & shock w CC	Medical	7	3	14	63	37
065: Intracranial hemorrhage or cerebral infarction w CC	Medical	8	29	6	2	30
392: Esophagitis, gastroent & misc digest disorders w/o MCC	Medical	9	20	35	125	80

Source: Dobson | DaVanzo analysis of research-identifiable 5% SAF for all sites of service, 2007-2009, wage index adjusted by setting and geographic region, and standardized to 2009 dollars. Medicare Episode Payment includes care from all facility-based and ambulatory care settings and excludes beneficiary co-payments, DME, and Part D payments.

First Setting Selection has a Material Impact on Medicare Program Expenditures

Example: MS-DRG 470

Medicare Episode Payment for MS-DRG 470 (major joint replacement w/o MCC) for Post-Acute Care Episodes by Select First Setting (2007-2009)

First Setting	Number of Episodes	Average Medicare Episode Payment	Difference from Overall Payment
HHA	366,140	\$18,068	\$5,411
SNF	430,240	\$26,861	(\$3,382)
IRF	128,680	\$33,538	(\$10,059)
LTCH	1,080	\$57,896	(\$34,417)
STACH	2,580	\$30,302	(\$6,823)
Community	134,240	\$17,340	\$6,140
Overall	1,062,960	\$23,479	\$0

Source: Dobson | DaVanzo analysis of research-identifiable 5% SAF for all sites of service, 2007-2009, wage index adjusted by setting and geographic region, and standardized to 2009 dollars. All episodes have been extrapolated to reflect the universe of Medicare beneficiaries. Medicare Episode Payment includes care from all facility-based and ambulatory care settings and excludes beneficiary co-payments, DME, and Part D payments.

Note: ER, OP, OP Therapy, Hospice and Other IP first setting episodes are not included in the overall.