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Healthcare Expenditures for Heart Disease among Adults Aged 18 and Older in the U.S. Civilian Noninstitutionalized Population, 2020

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Highlights

- In 2020, about 1 of every 12 adults aged 18 and older received any heart disease treatment. The percentage of adults who received any heart disease treatment was highest among those aged 65 and older, higher among non-Hispanic Whites than among other racial/ethnic groups, and also higher among those in poor/low-income families than those in middle- or high-income families.
- Annual healthcare expenditures for the treatment of heart disease for adults in the civilian noninstitutionalized population totaled \$114.9 billion in 2020 (a mean of \$5,540 per adult treated for heart disease).
- Inpatient hospital care accounted for the largest proportion of annual medical spending for heart disease.
- Medicare and private health insurance combined paid about four-fifths of the medical spending for heart disease.

Introduction

In 2020, heart disease accounted for 20.6 percent of deaths in the United States,¹ and about 6.1 percent of annual healthcare expenditures for adults

¹ Ahmad FB, Anderson RN. The Leading Causes of Death in the US for 2020. JAMA. 2021 May 11;325(18):1829-1830. doi: 10.1001/jama.2021.5469. PubMed PMID: 33787821; PubMed Central PMCID: PMC8145781.

in the civilian noninstitutionalized population were for the treatment of heart disease. This Statistical Brief examines the receipt of any treatment for heart disease by select characteristics of the population, presents healthcare expenditures on heart disease by type of medical service, and examines the share of expenses by service categories and sources of payment among adults in the U.S. civilian noninstitutionalized population based on the 2020 Medical Expenditure Panel Survey Household Component (MEPS-HC). All estimates are weighted to account for nonresponse and the complex survey design of MEPS-HC. Only differences between statistically significant estimates at the 0.05 level are discussed in the text.

Findings

Adults who received any heart disease treatment by demographic and socioeconomic characteristics (figures 1 and 2)

In 2020, an estimated 8.1 percent of adults aged 18 years and older in the U.S. civilian noninstitutionalized population (about 20.7 million adults) received any heart disease treatment.² This percentage was highest for those aged 65 and older (23.9 percent, or an estimated 13.9 million individuals), followed by adults aged 45–64 (6.3 percent, or an estimated 5.2 million individuals) and those aged 18–44 (1.4 percent or an estimated 1.6 million individuals).

About 1 of every 10 non-Hispanic White adults (9.8 percent) received any heart disease treatment. This percentage was lower for non-Hispanic Blacks (6.9 percent), followed by non-Hispanic Asians (4.5 percent) and Hispanics (4.2 percent). Men were more likely than women to receive any heart disease treatment (9.1 versus 7.2 percent).

A higher percentage of adults in poor- and low-income families had any heart disease treatment (10.3 and 9.7 percent, respectively) compared with those in families with middle or high incomes (8.2 and 7.1 percent, respectively). About 8–9 percent of adults received any heart disease treatment in each geographic region, except the West, where only 6.6 percent received medical care for this condition.

² Percentage equals direct medical spending (excluding expenses for dental/vision and other medical equipment or services) for treatment of heart disease (\$114.9 billion) multiplied by 100 over total healthcare expenditures (\$1,889 billion) for adults aged 18 and older in the U.S. civilian noninstitutionalized population (Medical Expenditure Panel Survey-Household Component, 2020). See Definitions at the end of the brief for the Clinical Classification Software Refined categories identifying heart disease.

Type of medical service for heart disease treatment (figure 3)

Among adults treated for heart disease, 70.9 percent had prescribed drug expenses, and over three-fifths (61.4 percent) had one or more visits to an office-based medical provider. Relatively smaller proportions had one or more hospital outpatient visits (17.8 percent), emergency room visits (13.1 percent), inpatient hospital stays (10.5 percent), and home health services (5.5 percent).

Heart disease treatment expenditures overall and by type of medical service (figure 4)

Among adults treated for heart disease, annual heart disease treatment expenditures³ had a median of \$590 and a mean of \$5,540 per adult treated for heart disease. Among the various medical service categories considered, median heart disease treatment expenses were the highest for inpatient hospital stays (\$14,850 across all adults with inpatient treatment for heart disease), followed by home health services (\$3,810 across all adults with home health services for heart disease). The median yearly expense estimates were similar for emergency room visits and hospital outpatient visits (\$560 and \$580 with emergency room visits and hospital outpatient visits, respectively) and lower for office-based visits (\$340 with office-based visits), but lowest for prescribed medicines (\$130 with prescribed medicine purchases for heart disease). In each medical service category, mean expenses were much higher than median expenses because a relatively small proportion of adults had very high expenses.

Percent distribution of heart disease treatment expenses by type of service (figure 5)

In 2020, an estimated \$114.9 billion was spent on treatment related to heart disease among adults in the U.S. civilian noninstitutionalized population. The largest portion (48.7 percent) of these expenses was for hospital inpatient care. Shares were 16.1 percent of the total for prescribed drugs, 14.6 percent for office-based visits, 9.0 percent for home health services, 8.3 percent for hospital outpatient visits, and 3.3 percent for emergency department visits.

³ These expenditures are the sum of the treatment costs across medical service categories for heart disease, excluding dental visits and other medical equipment and services (e.g., eyeglasses, contact lenses, ambulance services, orthopedic items, hearing devices).

Percent distribution of heart disease treatment expenses by source of payment (figure 6)

In 2020, Medicare and private health insurance combined paid 79.1 percent of heart disease treatment expenses (Medicare paid 48.0 percent, and private health insurance paid 31.2 percent). Medicaid paid about 1.9 percent, followed by out-of-pocket payments (5.3 percent) and payments by other sources (4.6 percent).

Data Source

This Statistical Brief uses the following 2020 Medical Expenditure Panel Survey (MEPS) public use files: (a) Medical Conditions File (HC-222), (b) Condition-Event Link File (HC-213IF1), (c) Office-Based Medical Provider Visits File (HC-220G), (d) Outpatient Visits File (HC-220F), (e) Emergency Room Visits File (HC-220E), (f) Prescribed Medicines File (HC-220A), (g) Hospital Inpatient Stays File (HC-220D), (h) Home Health File (HC-220H), and (i) Full-Year Consolidated Data File (HC-224). These data files are publicly available at https://meps.ahrq.gov/data_stats/download_data_files.jsp.

Definitions

Heart disease

MEPS-HC conditions reported by households were coded into *International Classification of Diseases, 10th Revision, Clinical Modification* (ICD-10-CM) codes, which were then collapsed into Clinical Classifications Software Refined (CCSR) categories. The following specific CCSR categories were combined to create the broader condition category of heart disease.

<u>CCSR Category</u>	<u>Description</u>
CIR001	Chronic rheumatic heart disease
CIR002	Acute rheumatic heart disease
CIR003	Nonrheumatic and unspecified valve disorders
CIR004	Endocarditis and endocardial disease
CIR005	Myocarditis and cardiomyopathy
CIR006	Pericarditis and pericardial disease
CIR009	Acute myocardial infarction
CIR010	Complications of acute myocardial infarction
CIR011	Coronary atherosclerosis and other heart diseases
CIR012	Nonspecific chest pain
CIR013	Acute pulmonary embolism
CIR014	Pulmonary heart disease
CIR015	Other and ill-defined heart disease

CIR016	Conduction disorders
CIR017	Cardiac dysrhythmias
CIR018	Cardiac arrest and ventricular fibrillation
CIR019	Heart failure

Persons were classified as receiving any heart disease treatment if they received one or more medical services (i.e., office-based, hospital outpatient or emergency room visits, hospital inpatient stays, prescribed medicine purchases, or home health services) for heart disease identified by the CCSR categories above as being the primary reason for care or having been discovered while receiving care.

Types of medical services

- *Office-based visits*: Includes expenses for visits to medical providers (i.e., physicians and nonphysicians) seen in office-based settings and clinics during the year. For 2020, this service category also includes telehealth visits (i.e., visits made to medical providers practicing in an office-based setting or clinic over the phone, through real-time video, or some other way).
- *Hospital outpatient visits*: Includes expenses for services provided by the facility and physicians who bill separately from the facility for visits to hospital outpatient departments during the year. For 2020, this service category also includes telehealth visits (i.e., visits made to medical providers practicing in a hospital outpatient department over the phone, through real-time video, or some other way).
- *Emergency room visits*: Includes payments for services covered under the basic facility charge and those for separately billed physician services during the year. However, these payments exclude expenses for emergency room services included in an inpatient hospital bill.
- *Hospital inpatient stays*: Includes room and board and all hospital diagnostic and laboratory expenses associated with the basic facility charge, payments for separately billed physician inpatient services, and some emergency room expenses incurred prior to inpatient stays.
- *Prescribed medicines*: Includes expenses for all prescribed medications initially purchased or refilled during the year.
- *Home health services*: Includes expenses for home health services provided by agencies and independent providers during the year.

A sample person is defined as having received a given medical service only if some expenses were reported for the care.

Sources of payment are classified into five categories:

- *Out of pocket*: Expenses paid by the user or other family member.

- Private insurance: Payments made by insurance plans covering hospital and medical care (excluding payments from Medicare, Medicaid, and other public sources). Payments from Medigap plans or TRICARE (Armed Forces-related coverage) are included.
- Medicare: Payments by this federally financed health insurance program for persons aged 65 and older, persons receiving Social Security disability payments, and persons with end-stage renal disease.
- Medicaid/Children's Health Insurance Program (CHIP): Payments by Medicaid and CHIP, which are means-tested government programs jointly financed by federal and state funds that provide healthcare to eligible people. Medicaid is designed to provide health coverage to families and individuals who cannot afford necessary medical care, while CHIP provides coverage to additional low-income children not eligible for Medicaid. Eligibility criteria for both programs vary significantly by state.
- Other sources: Includes payments from the U.S. Department of Veterans Affairs; other federal sources (Indian Health Service and other care provided by the federal government, except TRICARE); various state and local sources (community and neighborhood clinics, state and local health departments, and state programs other than Medicaid/CHIP); workers' compensation; and various unclassified sources (e.g., automobile, homeowner's, or other liability insurance, and other miscellaneous or unknown sources).

Expenditures for heart disease treatment

Expenses reported in this Brief were defined as associated with heart disease if a medical visit, stay, service, or purchase of a prescribed medicine was for treatment of heart disease. For each event, all expenditures were counted as expenditures for heart disease if the event was reported as associated with heart disease, even if other conditions were also reported. The report aggregates heart disease treatment costs across service categories to create a person-level total for each payment source. It also aggregates heart disease treatment costs at the individual level for each of the six medical services and for all services combined.

Age

Individuals were classified into three age groups (i.e., 18–44, 45–64, and 65 and older). Data on age are based on the sample person's age at the end of the year. However, if the MEPS-HC did not collect the age data during a data collection round due to the sample person being out of scope (e.g., deceased or institutionalized), it then used the age data collected at the time of the previous round to determine the person's age.

Race/ethnicity

MEPS respondents were asked if each family member was Hispanic or Latino and about each member's race. Based on this information, categories of race and Hispanic origin were constructed as follows:

- Hispanic
- White, non-Hispanic with no other race reported
- Black, non-Hispanic with no other race reported
- Asian, non-Hispanic, with no other race reported

The "other/multiple races, non-Hispanic" category is not shown separately in this Brief due to small sample sizes or failure to meet minimum precision requirements. However, those individuals are included in the overall total.

Income

Income was classified into the following four categories based on the ratio of total family income to the federal poverty line (FPL), adjusted for family size and composition:

- Poor (less than 125 percent of FPL)
- Low income (125 percent to less than 200 percent of FPL)
- Middle income (200 percent to less than 400 percent of FPL)
- High income (greater than or equal to 400 percent of FPL)

Census region

Census region (categories shown below) was based on the location of the household at the end of the year. If missing at the end of the year, the location from a previous MEPS data collection round was used.

- Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont
- Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin
- South: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia
- West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming

About MEPS

The Medical Expenditure Panel Survey Household Component (MEPS-HC) collects nationally representative data on healthcare use, expenditures, sources of payment, and insurance coverage for the U.S. civilian noninstitutionalized population. The MEPS-HC is cosponsored by the Agency for Healthcare Research and Quality (AHRQ) and the National Center for Health Statistics (NCHS). More information about the MEPS-HC can be found on the MEPS website at <https://www.meps.ahrq.gov>.

References

For a detailed description of the MEPS-HC survey design, sample design, and methods used to minimize sources of nonsampling error, see the following publication:

Cohen, J. *Design and Methods of the Medical Expenditure Panel Survey Household Component*. MEPS Methodology Report #1. AHCPR Pub. No. 97-0026. July 1997. Agency for Health Care Policy and Research (AHCPR), Rockville, MD. https://meps.ahrq.gov/data_files/publications/mr1/mr1.shtml

Suggested Citation

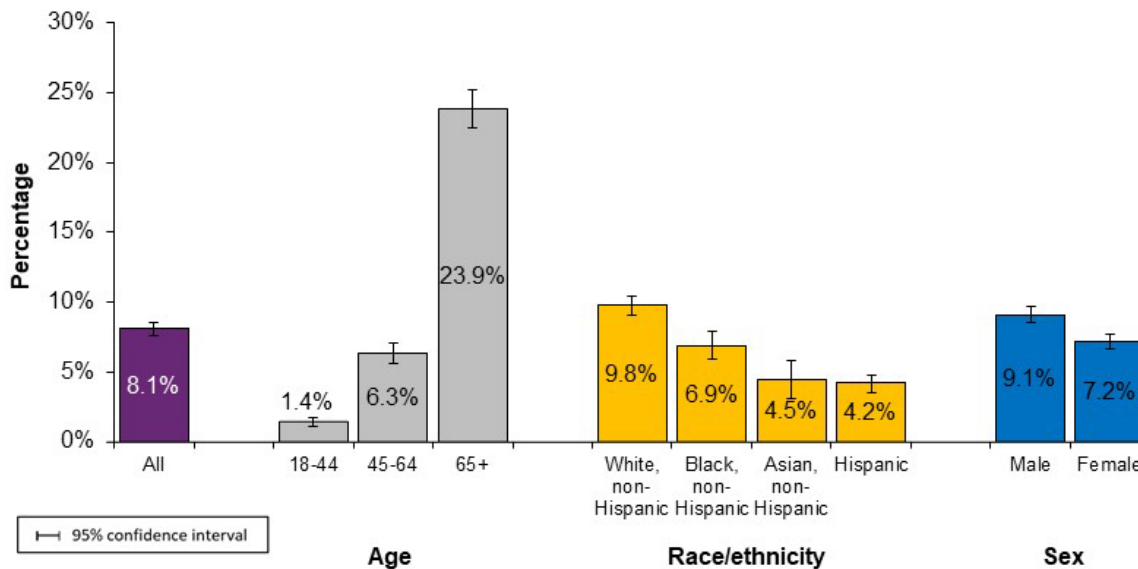
Muhuri, P. K. *Healthcare Expenditures for Heart Disease among Adults Aged 18 and Older in the U.S. Civilian Noninstitutionalized Population, 2020*. Statistical Brief #550. September 2023. Agency for Healthcare Research and Quality, Rockville, MD. https://meps.ahrq.gov/data_files/publications/st550/stat550.pdf

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AHRQ welcomes questions and comments from readers of this publication who are interested in obtaining more information about access, cost, use, financing, and quality of healthcare in the United States. We also invite you to tell us how you are using this Statistical Brief and other MEPS data and tools and to share suggestions on how MEPS products might be enhanced to further meet your needs. Please email us at MEPSProjectDirector@ahrq.hhs.gov or send a letter to the address below:

Joel W. Cohen, PhD, Director
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Rockville, MD 20857

Figure 1. Percentage of adults aged 18 and older who received any heart disease treatment by demographic characteristics, 2020



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey-Household Component, 2020.

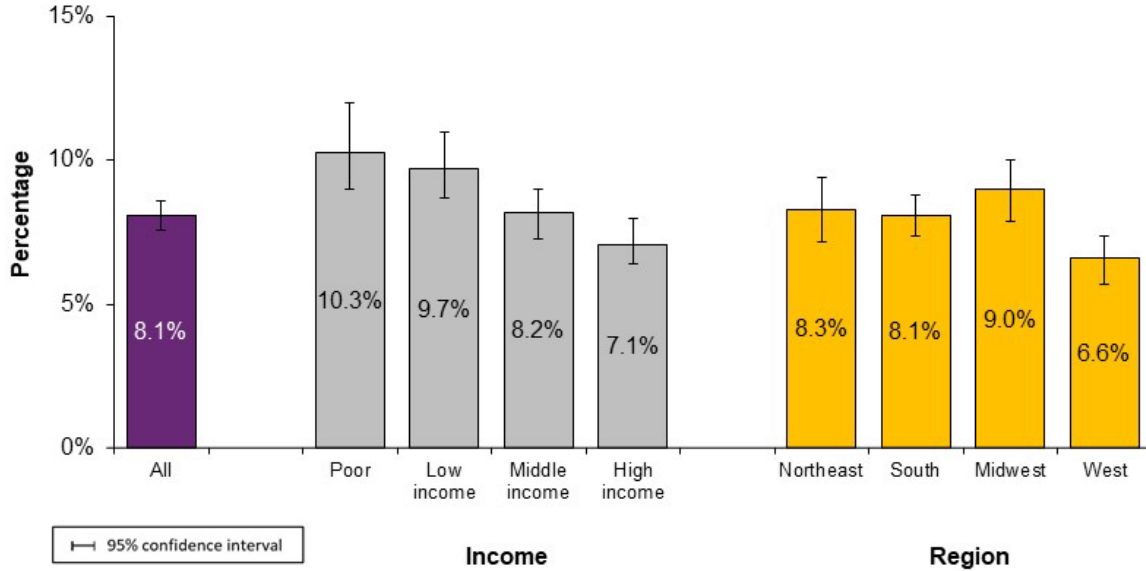
Figure 1. Percentage of adults aged 18 and older who received any heart disease treatment by demographic characteristics, 2020

Demographic characteristics	Percentage of adults (95% CI ¹)
All	8.1% (7.6%, 8.6%)
18–44 years	1.4% (1.1%, 1.7%)
45–64 years	6.3% (5.6%, 7.1%)
65+ years	23.9% (22.5%, 25.2%)
White, non-Hispanic	9.8% (9.1%, 10.4%)
Black, non-Hispanic	6.9% (5.9%, 7.9%)
Asian, non-Hispanic	4.5% (3.1%, 5.8%)
Hispanic	4.2% (3.5%, 4.8%)
Male	9.1% (8.5%, 9.7%)
Female	7.2% (6.6%, 7.7%)

¹95% CI stands for the 95% confidence interval.

Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey-Household Component, 2020.

Figure 2. Percentage of adults aged 18 and older who received any heart disease treatment by income and region, 2020



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey-Household Component, 2020.

Figure 2. Percentage of adults aged 18 and older who received any heart disease treatment by income and region, 2020

Demographic characteristics	Percentage of adults (95% CI)
All	8.1% (7.6%, 8.6%)
Poor	10.3% (9.0%, 11.5%)
Low income	9.7% (8.7%, 10.7%)
Middle income	8.2% (7.3%, 9.0%)
High income	7.1% (6.4%, 7.7%)
Northeast	8.3% (7.2%, 9.4%)
South	8.1% (7.4%, 8.8%)
Midwest	9.0% (7.9%, 10.1%)
West	6.6% (5.7%, 7.4%)

Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey-Household Component, 2020.

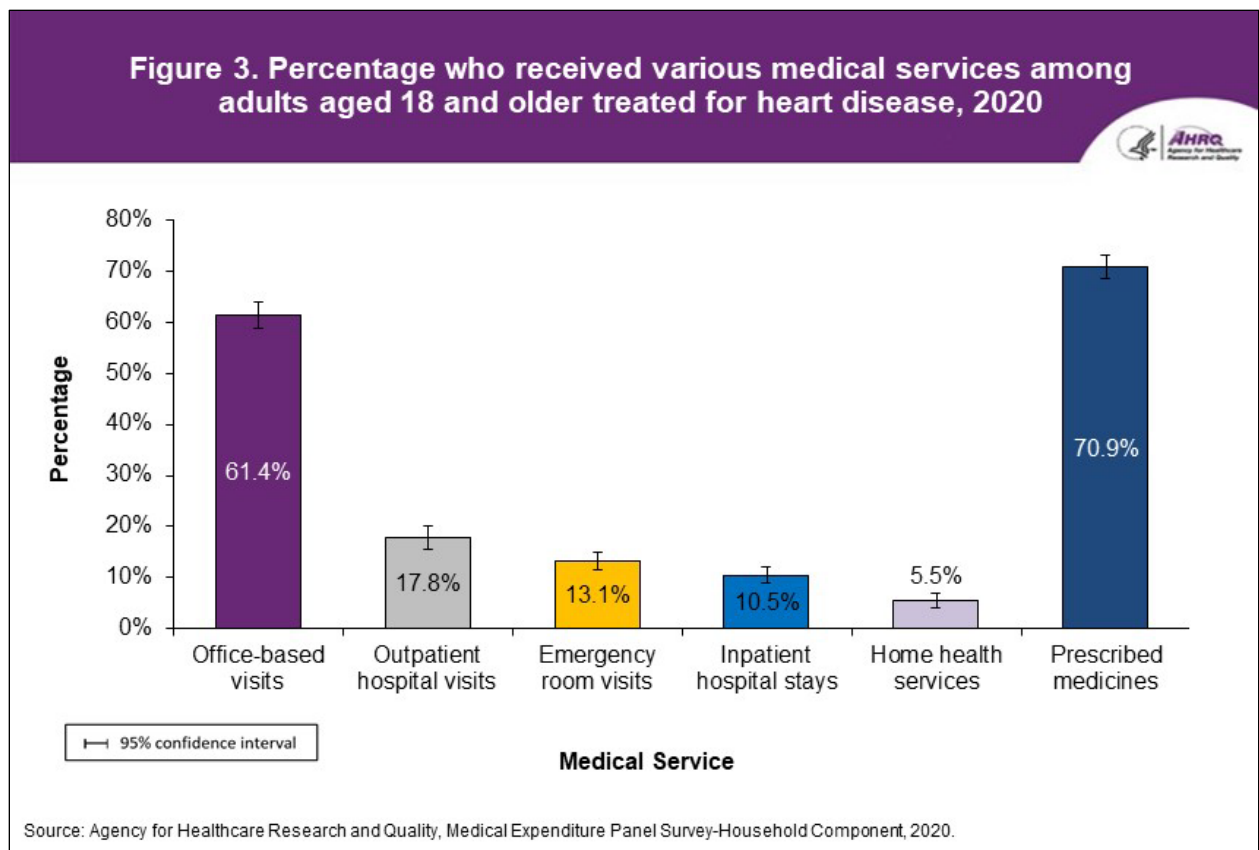


Figure 3. Percentage who received various medical services among adults aged 18 and older treated for heart disease, 2020

Medical service	Percentage of adults (95% CI)
Office-based visits	61.4% (58.8%, 64.0%)
Outpatient hospital visits	17.8% (15.4%, 20.2%)
Emergency room visits	13.1% (11.3%, 14.8%)
Inpatient hospital stays	10.5% (9.0%, 12.1%)
Home health services	5.5% (4.1%, 6.8%)
Prescribed medicines	70.9% (68.6%, 73.2%)

Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey-Household Component, 2020.

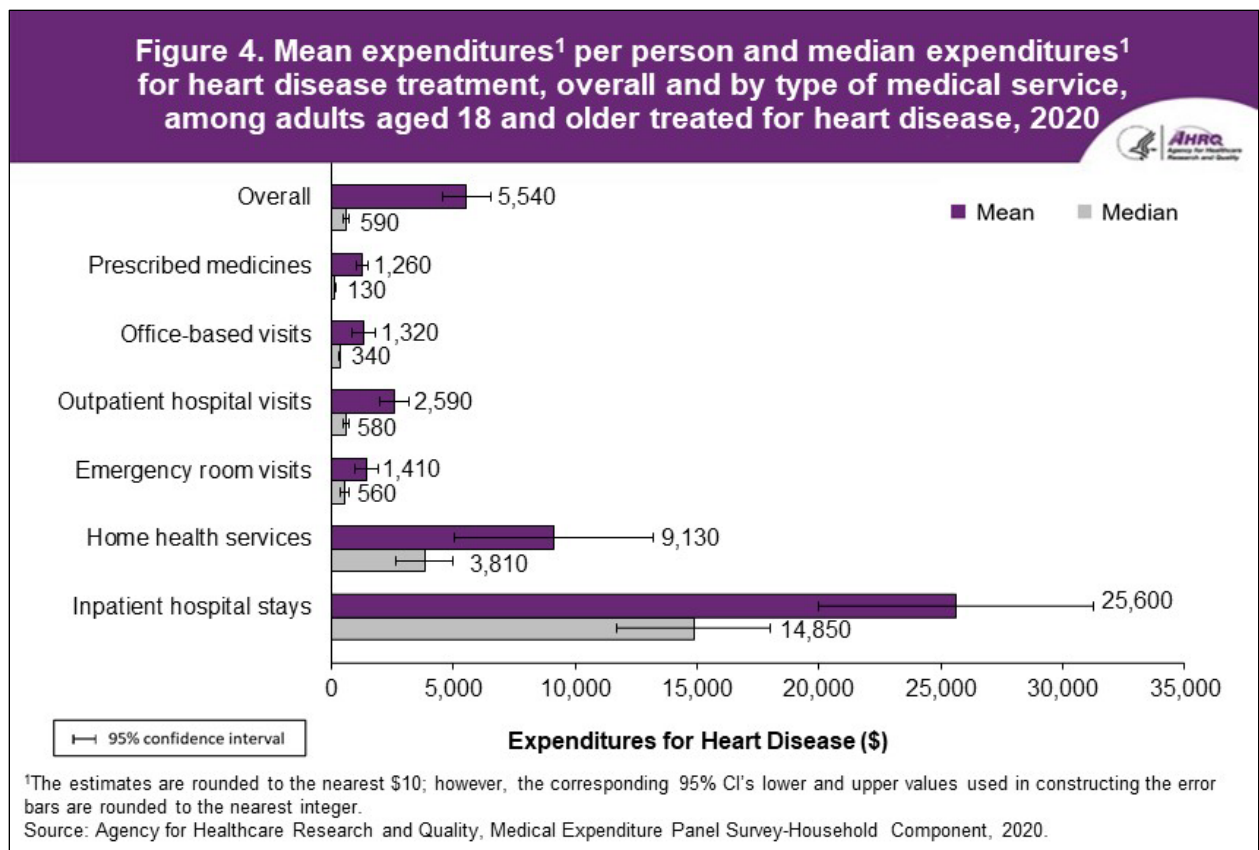


Figure 4. Mean expenditures¹ per person and median expenditures¹ for heart disease treatment, overall and by type of medical service, among adults aged 18 and older treated for heart disease, 2020

Condition	Mean expenses (\$) (95% CI)	Median expenses (\$) (95% CI)
Overall	\$5,540 (\$4,543, \$6,542)	\$590 (\$492, \$692)
Prescribed medicines	\$1,260 (\$994, \$1,521)	\$130 (\$106, \$146)
Office-based visits	\$1,320 (\$827, \$1,807)	\$340 (\$312, \$373)
Outpatient hospital visits	\$2,590 (\$1,987, \$3,183)	\$580 (\$456, \$713)
Emergency room visits	\$1,410 (\$936, \$1,892)	\$560 (\$387, \$743)
Home health services	\$9,130 (\$5,054, \$13,209)	\$3,810 (\$2,621, \$4,997)
Inpatient hospital stays	\$25,600 (\$19,965, \$31,225)	\$14,850 (\$11,686, \$18,020)

¹The estimates are rounded to the nearest \$10; however, the corresponding 95% CI's lower and upper values in parentheses are rounded to the nearest integer.
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey-Household Component, 2020.

Figure 5. Percent distribution of heart disease treatment expenses by type of medical service among adults aged 18 and older treated for heart disease, 2020

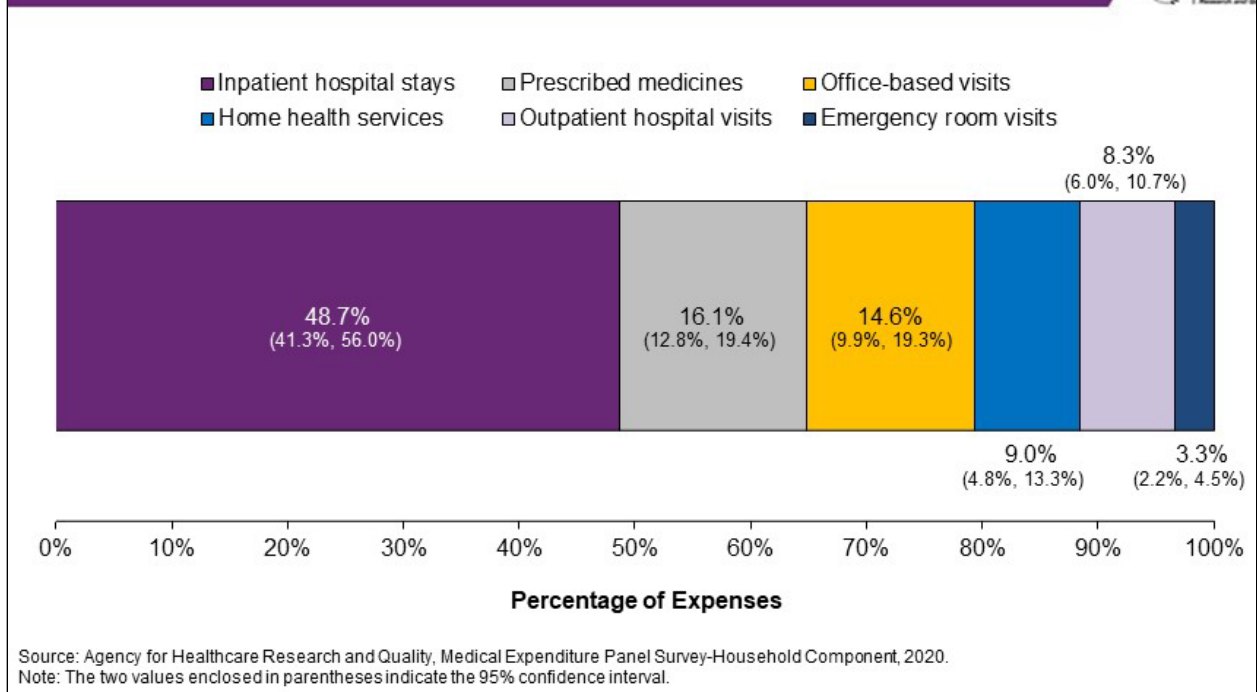


Figure 5. Percent distribution of heart disease treatment expenses by type of medical service among adults aged 18 and older treated for heart disease, 2020

Medical service	Percentage of expenses (95% CI)
Inpatient hospital stays	48.7% (41.3%, 56.0%)
Prescribed medicines	16.1% (12.8%, 19.4%)
Office-based visits	14.6% (9.9%, 19.3%)
Home health services	9.0% (4.8%, 13.3%)
Outpatient hospital visits	8.3% (6.0%, 10.7%)
Emergency room visits	3.3% (2.2%, 4.5%)

Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey-Household Component, 2020.

Figure 6. Percent distribution of heart disease treatment expenses by source of payment among adults aged 18 and older treated for heart disease, 2020

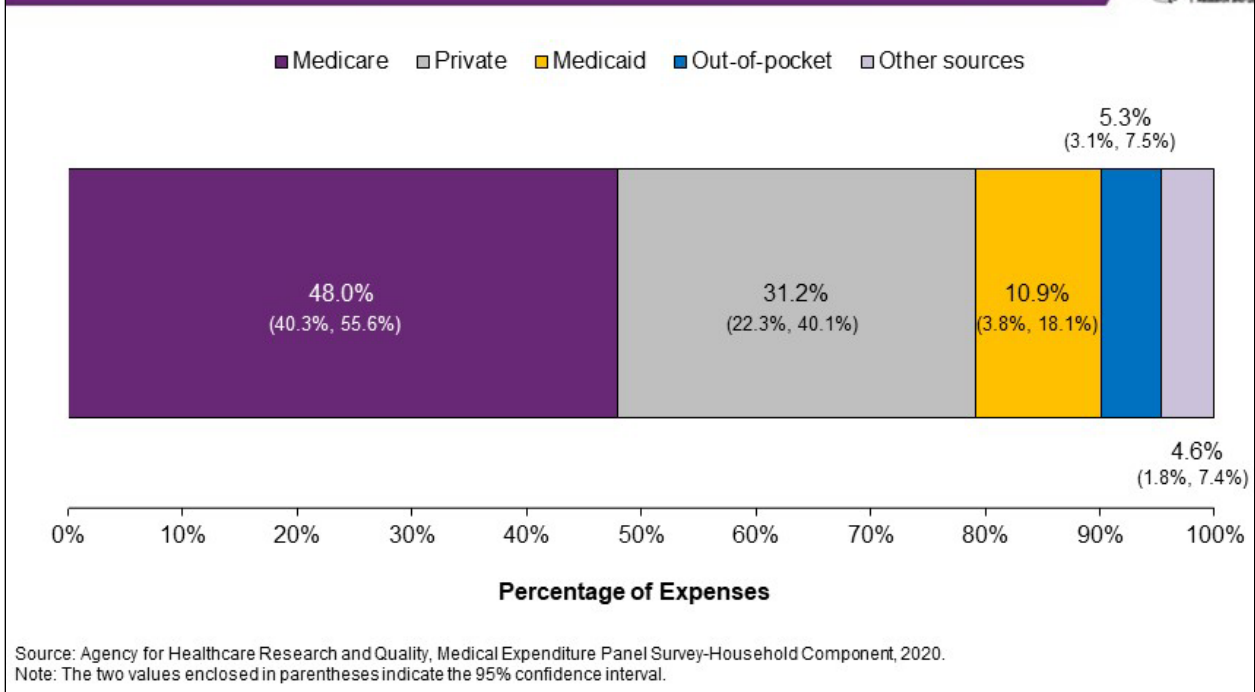


Figure 6. Percent distribution of heart disease treatment expenses by source of payment among adults aged 18 and older treated for heart disease, 2020

Source of payment	Percentage of expenses (95% CI)
Medicare	48.0% (40.3%, 55.6%)
Private	31.2% (22.3%, 40.1%)
Medicaid	10.9% (3.8%, 18.1%)
Out-of-pocket	5.3% (3.1%, 7.5%)
Other sources	4.6% (1.8%, 7.4%)

Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey-Household Component, 2020.