# National Health Expenditure Accounts (NHEA): Methodology Paper, 2024

## Definitions, Sources, and Methods

*Last Updated: January 2026*
National Health Expenditures for 1960-2024

National Health Statistics Group
Office of the Actuary
Centers for Medicare & Medicaid Services

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## Introduction: About the U.S. National Health Expenditure Accounts

Since 1964, the U.S. Department of Health and Human Services[1] and its predecessor agencies have published an annual series of data presenting total national health expenditures (NHE). These estimates, termed the National Health Expenditure Accounts (NHEA), are compiled with the goal of measuring the total annual dollar amount of health care consumption in the U.S., as well as the dollar amount invested in medical sector structures and equipment and non-commercial research to procure health services in the future.

The NHEA are generally compatible with a production-based accounting structure such as the Bureau of Economic Analysis' National Income and Product Accounts (NIPA),[2] but include a more complete picture of the health care sector.[3] Using an expenditures approach to national economic accounting, the NHEA identifies all final consumption of health care goods and services as well as investment in a given year that is purchased or provided by direct or third-party payments and programs.

Three primary characteristics of the NHEA flow from this framework. First, the NHEA are comprehensive because they contain all of the main components of the health care system within a unified mutually exclusive and exhaustive structure. Second, the NHEA are multidimensional, encompassing not only expenditures for medical goods and services, but also the payers and programs that finance these expenditures. Third, the NHEA are consistent because they apply a common set of definitions that allow comparisons among categories and over time.

To keep the NHEA accurate and relevant, the scope, methods, and data sources used are periodically reexamined. Every five years, the NHEA undergoes a comprehensive revision that includes the incorporation of newly available source data, methodological and definitional changes, and the benchmarking of estimates from the U.S. Census Bureau's quinquennial Economic Census (available for years ending in "2" and "7"). During these comprehensive revisions, the entire NHEA time series (1960-forward) is evaluated and may be revised. The most recent comprehensive revision is reflected in the 2024 vintage of the NHEA. Please visit the following website for more information regarding these changes:

https://www.cms.gov/files/document/summary-benchmark-changes-2024.pdf

The NHEA are not limited to national level, historical estimates of health spending and health insurance enrollment. Selected additional NHEA products include:

- Health care expenditure projections:[4] Historical NHEA estimates provide a basis for projections of future health care expenditures. Each year following the release of the historical NHEA data, the Office of the Actuary releases updated 10-year projections of health care expenditures that incorporate updated assumptions about demographic and economic factors, as well as inflation rates and other economic information. By projecting the likely future trends in health care spending under current law, these models provide key information to legislators, research analysts, academic professionals, and the public so that they can make informed decisions.

- Health care expenditures by age and sex:[5] Historical health spending is also estimated by age and sex for selected years from 2002 through 2020. These estimates reflect personal health care spending by type of good or services and by source of funding (private health insurance, Medicare, Medicaid, our-of-pocket, and all other payers and programs) for five age groups: 0-18, 19-4, 45-64, 65-84, and 85 and over for males and females.

- Health care expenditures by state of provider[6] and state of residence:[7] State level health accounts by state of provider (1980 through 2020) reflect state level expenditures by the type of establishment delivering care (hospitals, physicians and clinics, nursing homes, etc.) and for medical products (prescription drugs, over-the-counter medicines and sundries, and durable medical equipment). These estimates are useful in measuring the role of health spending in state economies and allow for state and regional comparisons over time. Health care expenditures by state of residence (available for 1991 through 2020) represent adjusted state of provider expenditures that reflect health spending

for the state in which the patient resides (they capture the migration patterns associated with those who cross state borders to receive care). Because health spending by state of residence is consistent with state population and/or health insurance enrollment counts, it is the only set of state-level estimates in which it is appropriate to calculate health spending per person by state.

NHEA data can be and has been used to study numerous topics related to the health care sector. Examples include:

- Health care expenditures as a proportion of GDP. Within the NHEA, the amount of health care goods and services produced relative to the amount of all goods and services produced represents the share of the nation's total production that is attributed to health care. The amount of economic resources devoted to the production of health care also represents the opportunity cost of health care to society, in that such resources cannot be applied to the production of any other types of goods and services.

- Health care expenditures by payers and programs. The NHEA allows for the analysis of the share and magnitude of various types of health care payers and programs including health insurance (such as private health insurance, Medicare, and Medicaid) consumer out-of-pocket payments, and other third-party payers and programs.

- Health care expenditures for various types of goods and services. The NHEA present the amount of annual consumption of health care goods and services produced by various health care establishments in the U.S and are useful in analyzing the changing mix of medical services and products consumed.

- Health care expenditures by type of sponsor. The NHEA is aligned to produce estimates of spending by type of sponsor, or the businesses, households, governments, and other private revenues that are ultimately responsible for financing health care expenditures and are the sponsors of private health insurance premiums, out-of-pocket spending, and government program expenditures. These estimates, combined with measures of available resources used to pay for health care, can help to identify health care financing pressures and the impact of changes in health care costs.

- Health care policy changes. The comprehensive and integrated structure of the NHEA creates an ideal tool for evaluating changes to the health care system such as the mix of the insured and uninsured, the distribution of all direct and third-party payers and programs, the consumption of health care goods and services, and impacts of legislation.

## How is Health Care Spending Defined and Organized in the NHEA?

The NHEA tabulate aggregate health care spending in the United States on three major dimensions: spending by medical service and/or good; by payer and/or program; and by sponsor (or source of financing).

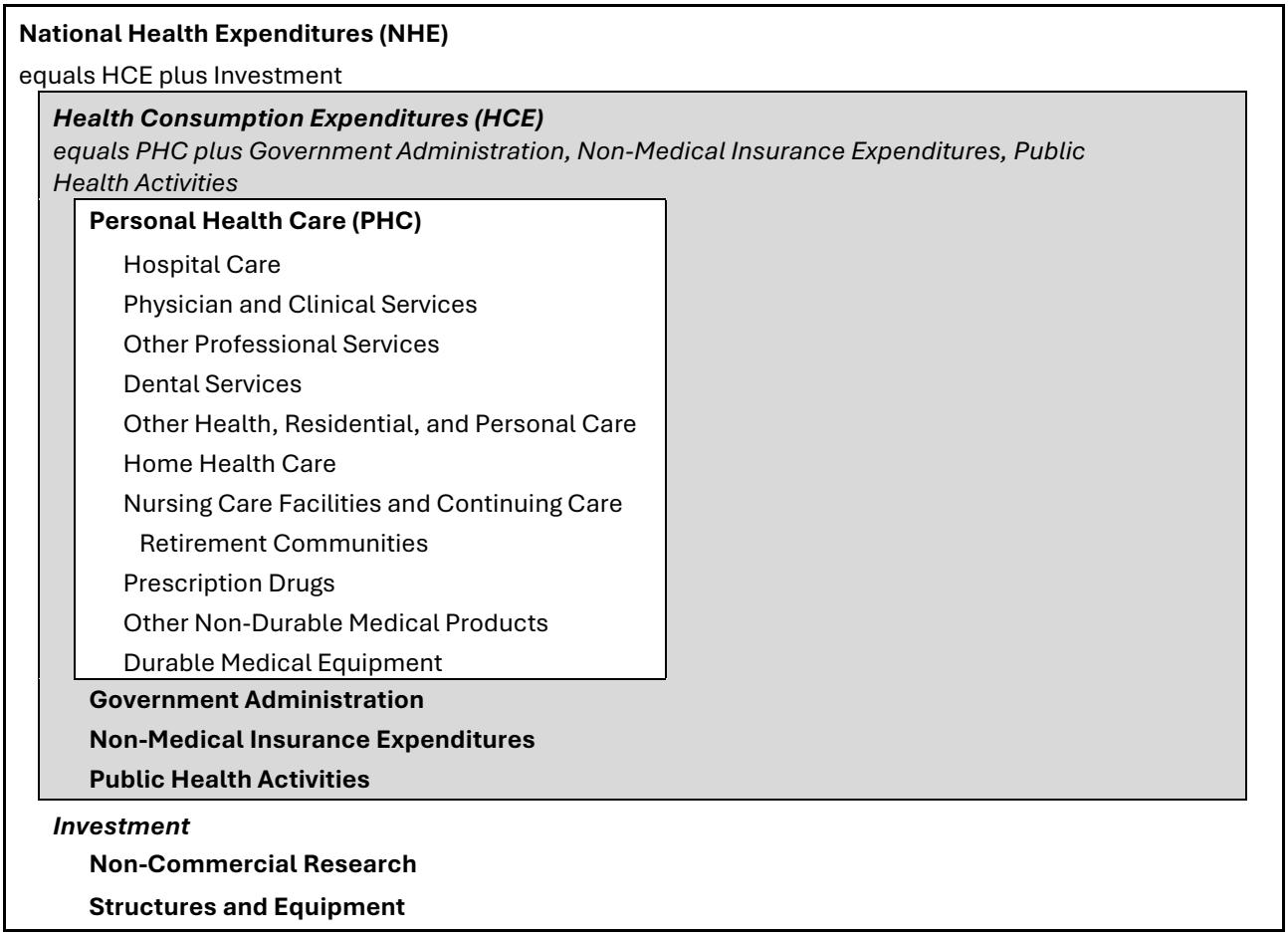
Exhibit 1 provides a visualization of the structure and organization of the NHEA.

**Personal health care** (PHC) expenditures, the internal box in Exhibit 1, represent all revenues received by health care providers and retail establishments for the provision of medical goods and services as well as all non-patient and non-operating revenue, grants, subsidies, and philanthropy received by health care providers.

**Health consumption expenditures** (HCE) equal PHC spending plus spending for government public health activity, government administration, and non-medical insurance expenditures.

**National health expenditures** (NHE) equal HCE plus investment, which is the sum of medical sector purchases of structures and equipment and expenditures for non-commercial medical research.

**Exhibit 1: Structure of the NHEA by Goods and Services**




Source: Centers for Medicare & Medicaid Services, Office of the Actuary, National Health Statistics Group.

## Industry Classification and Data Sources for Medical Services and Goods

In the NHEA, health care spending is classified by type of establishment. Services are classified by the 2022 North American Industry Classification System (NAICS).[8] Goods are classified according to the product codes used by the U.S. Census Bureau. Exhibit 2 shows the mapping of NAICS codes to NHEA categories.

**Exhibit 2: NAICS Structure for the Health Care Services Crosswalk to NHEA**

| | NAICS Structure | NHEA Categories |
|---|---|---|
| 62 | Health Care and Social Assistance | |
| 621 | Ambulatory Health Care Services | |
| 6211 | Offices of Physicians | Physician and clinical services |
| 6212 | Offices of Dentists | Dental Services |
| 6213 | Offices of Other Health Practitioners | Other professional services/durable medical equipment |
| 62131 | Offices of Chiropractors | Other professional services |
| 62132 | Offices of Optometrists | Other professional services/durable medical equipment |
| 62133 | Offices of Mental Health Practitioners (except Physicians) | Other professional services |
| 62134 | Offices of Physical, Occupational and Speech Therapists, and Audiologists | Other professional services |
| 62139 | Offices of All Other Health Practitioners | Other professional services |
| 621391 | Offices of Podiatrists | Other professional services |
| 621399 | Offices of All Other Miscellaneous Health Practitioners | Other professional services |
| 6214 | Outpatient Care Centers | Physician and clinical services |
| 62141 | Family Planning Centers | Physician and clinical services |
| 62142 | Outpatient Mental Health and Substance Abuse Centers | Physician and clinical services |
| 62149 | Other Outpatient Care Centers | Physician and clinical services |
| 621491 | HMO Medical Centers | Physician and clinical services |
| 621492 | Kidney Dialysis Centers | Physician and clinical services |
| 621493 | Freestanding Ambulatory Surgical and Emergency Centers | Physician and clinical services |
| 621498 | All Other Outpatient Care Centers | Physician and clinical services |
| 6215 | Medical and Diagnostic Laboratories | Physician and clinical services |
| 621511 | Medical Laboratories | Physician and clinical services |
| 621512 | Diagnostic Imaging Centers | Physician and clinical services |
| 6216 | Home Health Care Services | Home health care |
| 6219 | Other Ambulatory Health Care Services | Other health, residential, and personal care (partial) |
| 62191 | Ambulance Services | Other health, residential, and personal care |
| 622 | Hospitals | Hospital care |
| 6221 | General Medical and Surgical Hospitals | Hospital care |
| 6222 | Psychiatric and Substance Abuse Hospitals | Hospital care |
| 6223 | Specialty (except Psychiatric and Substance Abuse) Hospitals | Hospital care |
| 623 | Nursing and Residential Care Facilities | Nursing home and residential care facilities/other health, residential, and personal care |
| 6231 | Nursing Care Facilities (Skilled Nursing Facilities) | Nursing care facilities and continuing care retirement communities |
| 6232 | Residential Intellectual and Developmental Disability, Mental Health and Substance Abuse Facilities | Other health, residential, and personal care |
| 62321 | Residential Intellectual and Developmental Disability Facilities | Other health, residential, and personal care |
| 62322 | Residential Mental Health and Substance Abuse Facilities | Other health, residential, and personal care |
| 6233 | Continuing Care Retirement Communities and Assisted Living Facilities for the Elderly | Nursing care facilities and continuing care retirement communities (only 623311) |
| 62331 | Continuing Care Retirement Communities and Assisted Living Facilities for the Elderly | Nursing care facilities and continuing care retirement communities (only 623311) |
| 623311 | Continuing Care Retirement Communities | Nursing care facilities and continuing care retirement communities |

NOTE: The following codes within NAICS 62 are out-of-scope for the NHEA: 62199, 621991, 621999, 623312, 6239.

Exhibit 3 below identifies the primary data sources and methodologies used to estimate spending for the NHE services and goods categories. U.S. Census Bureau data sources, such as the Economic Census (EC) and the Service Annual Survey (SAS) (which are also classified by NAICS code), are a primary input to NHE service spending totals. For sources of funding estimates related to each service or good, similar data sources and methods are used. For Medicare, Medicaid, and other third-party payers and programs, data is used that originate directly from public programs or from the Budget of the U.S. Government. For private health insurance, out-of-pocket, and other private revenues, expenditures by type of service or good are distributed using survey data, such as the SAS and Quarterly Services Survey (QSS)after known program spending (Medicare, Medicaid, and other third-party payers and programs) is removed.

**Exhibit 3: An Overview of Data Sources and Methodology Used in the NHEA**

<table>
<tr><th>Service/Good:</th><th>Total Spending</th><th>PHI</th><th>OOP</th><th>Other Private</th><th>Medicare</th><th>Medicaid</th><th>Other Third-Party Payers and Programs</th></tr>
<tr><td>Hospital Care</td><td>QSS, SAS, EC, and AHA</td><td colspan="3">Residual, distributed using the SAS, QSS</td><td rowspan="11">Trustees Report, Summary Claims, and Medicare Advantage Bid Pricing Tool data</td><td rowspan="10">CMS-64s</td><td rowspan="11">Program or Budget Data</td></tr>
<tr><td>Physician and Clinical Services</td><td>QSS, SAS and EC</td><td colspan="3">Residual, distributed using the SAS, QSS</td></tr>
<tr><td>Other Professional Services</td><td>QSS, SAS and EC</td><td colspan="3">Residual, distributed using the SAS, QSS</td></tr>
<tr><td>Dental Services</td><td>QSS, SAS and EC</td><td colspan="3">Residual, distributed using the SAS, QSS</td></tr>
<tr><td>Other Health, Residential, and Personal Care</td><td>QSS, SAS, EC, Program or Budget data, and other data</td><td colspan="3">SAS and other data</td></tr>
<tr><td>Home Health Care</td><td>QSS, SAS and EC</td><td colspan="3">Residual, distributed using the SAS, QSS</td></tr>
<tr><td>Nursing Care Facilities and Continuing Care Retirement Communities</td><td>QSS, SAS and EC</td><td colspan="3">Residual, distributed using the SAS, QSS</td></tr>
<tr><td>Prescription Drugs</td><td>CRT and IQVIA Health</td><td colspan="2">Residual, distributed using data from CMS and IQVIA Health</td><td>N/A</td></tr>
<tr><td>Durable Medical Equipment</td><td>I-O and EC</td><td colspan="3">PCE, CE, and MEPS</td><td>MAX/MSIS</td></tr>
<tr><td>Other Non-durable Medical Products</td><td>PCE</td><td>N/A</td><td></td><td>N/A</td><td>N/A</td></tr>
</table>

Key of terms:
EC = The U.S. Census Bureau's Economic Census, available for years ending in 2 and 7
Other data = Includes data from the Journal of Emergency Medical Services, Bureau of Labor Statistics, Mercer Survey for onsite health care, and Kaiser Health Research and Educational Trust (HRET) survey of Employer-Sponsored Health Benefits
SAS = The U.S. Census Bureau's Service Annual Survey. This survey was discontinued with the 2022 data and will be replaced with the Annual Integrated Economic Survey (AIES) with 2023 data.
QSS = The U.S. Census Bureau's Quarterly Services Survey.
IQVIA = IQVIA's National Prescription Audit and Method of Payment Report
CMS = Centers for Medicare & Medicaid Services
CRT = The U.S. Census Bureau's Census of Retail Trade, available for years ending in 2 and 7
I-O = The Bureau of Economic Analysis' Input-Output Accounts, available for years ending in 2 and 7
CE = The Bureau of Labor Statistics' Consumer Expenditure Survey
MEPS = The Agency for Healthcare Quality and Research's Medical Expenditure Panel Survey
PCE = Personal Consumption Expenditures
MAX/MSIS = Medicaid Analytic eXtract system and Medicaid Statistical Information Statistics
Source: The National Health Statistics Group, Office of the Actuary, Centers for Medicare & Medicaid Services

# Definitions, Sources, and Methods by NHEA Category

## *Medical Services*

### Hospital Care

**Definition:** Expenditures for hospital care include revenue received by all U.S. hospitals for all services rendered (NAICS 622). This includes net patient revenues (gross charges less contractual adjustments, bad debts, and charity care). It also includes government tax appropriations, non-patient operating revenue such as receipts from cafeterias, gift shops and parking lots, and non-operating revenue, such as interest income, contributions, and grants.

Other hospital-based services, such as inpatient pharmacy, hospital-based nursing home care, hospital-based home health care and fees for any other services billed by the hospital such as hospice are also included in the hospital care category.

**Data Sources:** Current hospital care revenue data sources include the Economic Census (EC), Services Annual Survey (SAS), and the Quarterly Servies Survey (QSS), all compiled by the Bureau of the Census. For federal hospital spending, data sources include the President's Budget (Office of Management and Budget) as well as budget information from the Department of Veterans Affairs and Indian Health Services. Hospital care spending estimates for 1960-2007 were estimated based on American Hospital Association (AHA) annual survey data.

**Methods:** Hospital Care spending levels are benchmarked to the 2012 and 2017 Economic Census[9] and interpolated and extrapolated using growth derived from the revenue trends in the Service Annual Survey,[10] the American Hospital Association's (AHA) Annual Survey of Hospitals[11] (through 2021) and the Quarterly Services Survey.[12] Estimates of hospital spending from 1960-2007 are benchmarked to the AHA's Annual Survey.

Total federal hospital spending is calculated as the sum of expenditures for services provided at Department of Veterans Affairs hospitals, Department of Defense hospitals, Indian Health Service hospitals, and other federal hospitals.

### Physician and Clinical Services

**Definition:** In the NHEA the physicians and clinical services category includes Offices of Physicians [including Doctors of Medicine (M.D.) and Doctors of Osteopathy (D.O.) (NAICS 6211)] and outpatient care centers (NAICS 6214), plus the portion of medical and diagnostic laboratories services that are billed independently by the laboratories (a portion of NAICS 6215).

**Data Sources:** Statistics compiled and published by the Internal Revenue Service (IRS) (1960-1987), data from the Services Annual Survey (SAS), compiled by the Bureau of the Census, trends from the Quarterly Servies Survey (QSS).

**Methods:** For employer-based establishments, physician, clinical, and independently billing medical laboratory services are benchmarked to business receipts of private taxable and tax-exempt firms collected in the U.S. Census Bureau's quinquennial Economic Census (EC).[9] Information from the U.S. Census Bureau's Service Annual Survey[10] is used to interpolate between the EC benchmark years and to extrapolate to later periods. Receipts of non-employer taxable firms are then added to the revenue for employer-based taxable and tax-exempt firms to estimate calendar year expenditures.

A subtraction is made to physician and clinical service expenditures to remove revenue received from other providers including professional fees paid to physicians by hospitals, since these fees are included in hospital expenditures.

The services of physicians working under salary for a hospital, nursing home, or other type of health care establishment are reported with expenditures for that service. For example, care rendered by hospital residents and interns at a hospital is included in the hospital services estimate and excluded from the physician and clinical services estimates. Likewise, physicians' professional fees received from arrangements with hospitals, including minimum guaranteed income, percentage of departmental billing, and bonuses would be excluded from the physician and clinical services estimates.

Estimates of spending for government-run Department of Veterans Affairs, Department of Defense, and Indian Health Service clinics and the Coast Guard Academy Clinic are added to physician and clinical services expenditures. The SAS does not collect data for government facilities in this industry.

For estimates prior to 1987 expenditures for physician and clinical services were estimated primarily using business receipts for sole proprietorships, partnerships, and incorporated practices compiled and published by the Internal Revenue Service (IRS) in its Statistics of Income publication.[13]

### Dental Services

**Definition:** Dental services expenditures cover services provided by licensed dental practitioners, including Doctor of Dental Medicine (D.M.D.), Doctors of Dental Surgery (D.D.S.), or Doctors of Dental Science (D.D.Sc.) that are classified under NAICS 6212: Offices of Dentists. These include preventive, cosmetic, emergency, and specialized treatments delivered in private practices, group practices, hospitals, or HMO medical centers.

**Data Sources:** The primary data sources for estimates of dental spending are the U.S. Census Bureau's Service Annual Survey (SAS), the Quarterly Services Survey (QSS), and the Economic Census (EC). For 1960-1987, dental services spending estimates were based on IRS data.

**Methods:** Total dental services expenditures are calculated by summing dental services revenue for employer and non-employer firms from the Service Annual Survey. Estimates of dental services provided in Department of Defense (DOD) facilities are then added to arrive at the final total.

For 2023 and 2024, total levels for employer firms are derived using annual trend rates from the Quarterly Services Survey (QSS). Spending from non-employers are from the US Census Bureau's Nonemployer Statistics program.

### Other Professional Services

**Definition:** The other professional services category includes spending provided in establishments operated by health practitioners other than physicians (MDs) and dentists (DDS, DMD, and DDSc). This includes services provided in offices of chiropractors (NAICS 621310), offices of optometrists (NAICS 621320), offices of mental health practitioners (except physicians) (NAICS 621330), offices of physical, occupational and speech therapists, and audiologists (NAICS 621340), offices of podiatrists (NAICS 621391), and offices of all other miscellaneous health practitioners (NAICS 621399).

**Data Sources:** Spending for employer establishments is developed from revenue estimates from the U.S. Census Bureau's Service Annual Survey, Quarterly Services Survey, and the Economic Census. Spending from non-employers are from the US Census Bureau's Nonemployer Statistics program. In the years before Census data became available, estimates were derived using information from the IRS and the Bureau of Labor Statistics (BLS).

**Methods:** Total spending estimates are derived by summing the revenue of employer and non-employer firms, with an adjustment to remove a portion of optometrist revenue for eyeglasses, contact lenses, and other optical goods, as that spending is included in durable medical equipment. The percentage of optical goods from optometric offices is estimated from North American Product Classification System (NAPCS) data from the Economic Census.

### Other health, residential, and personal care

**Definition:** The other health, residential, and personal care category includes spending for services provided in non-traditional settings including residential mental health and substance abuse facilities, residential intellectual and developmental disability facilities, Medicaid home and community-based waivers, school health, worksite health care, and some ambulance services.

**Data Sources:** The data sources used are specific to each of the underlying services/settings:

- Residential facilities – NAICS 6232 employer and non-employer data from U.S. Census Bureau Service Annual Survey (SAS), Medicaid program data for Intermediate Care Facilities for individuals with Intellectual Disabilities (ICFs/IID), and program data from DOD, VA, and SAMSHA.
- Ambulance Services – NAICS 62191 employer and non-employer data from the U.S. Census Bureau Service Annual Survey and data from the Journal of Emergency Medical Services.
- Worksite Health Care – Survey of employer sponsors health plans, Consumer Price index for medical services and physicians (BLS), a Mercer Survey of onsite health care, and the Kaiser Family Foundation/Health Research and Educational Trust Survey of Employer Sponsored Health Benefits.
- Other care provided in non-traditional settings
    - Medicaid home and Community Based Waivers - Medicaid Program Data
    - School health - National Public Education Financial Survey, Public and Private school enrollment (National Center for Education Statistics).

**Methods:** Expenditures for private establishments that provide residential mental health and substance abuse and residential intellectual and developmental disability services are estimated using business receipts of private taxable and tax-exempt firms collected in the Economic Census. Information from the SAS is used to interpolate between the EC benchmark years and to extrapolate to later periods. Public facility expenditures are estimates using program data from Medicaid and the Veterans Administration as well as estimates of state and local facility revenues based on wage data (BLS) and are added to total expenditures of private establishments.

Expenditures for ambulance services provided by private establishments are estimated using business receipts of private taxable and tax-exempt firms collected in the Economic Census. Information from the SAS is used to interpolate between the EC benchmark years and to extrapolate to later periods. Public payments (Medicare, Medicaid, and General Assistance) to government operated establishments are estimated from program data as well information from the Journal of Emergency Medical Services.[14] While the total ambulance expenditures reflect public payments to government operated establishments and revenue received by private establishments, it does exclude private payment to government operated establishments due to a lack of source data.

The worksite healthcare estimate is derived from various data sources. A 1984 survey of employer-sponsored health plans[15] produced an estimated cost per employee with access to covered services in 1984, which was extrapolated back to 1960 and forward to current periods using national employment data and the Consumer Price Index[16] for medical services and physicians from the Bureau of Labor Statistics. Additional information from the Mercer Survey[17] for onsite health care and the Kaiser Family Foundation/Health Research and Educational Trust Survey of Employer-Sponsored Health Benefits[18] provides data on the number of employees that are provided with worksite health care services.

Expenditures for medical care provided in non-traditional settings includes care provided in community centers, senior citizens centers, schools, and military field stations. One of the largest categories of government spending for this category is home and community-based waiver programs under Medicaid. In these programs, states may apply for waivers in order to provide care to beneficiaries who would otherwise require long-term inpatient care in a hospital or nursing home. Examples of types of services provided under these waivers include rehabilitation, respite care, and environmental modifications. This care is frequently delivered in community centers and senior citizens centers and through home visits by various kinds of medical and non-medical personnel. School health expenditures are estimated using data from the National

Public Education Financial Survey[19] supplemented with enrollment estimates for both public and private schools from the National Center for Education Statistics.[20]

### Home Health Care

**Definition:** The home health care component of the NHEA measures annual expenditures for skilled nursing, hospice, and other ancillary services delivered in the home by freestanding home health agencies (HHAs) as classified in NAICS category 6216.

Spending associated with hospital-based HHAs are classified with hospitals (NAICS 622) and are therefore included with hospital care expenditures.

**Data Sources:** Estimates of home health expenditure are developed from revenue data from the U.S. Census Bureau's Economic Census, Service Annual Survey, and Quarterly Services Survey. These data are supplemented with Medicare Provider Analysis and Review data[21] (for 1988 through 2014) and Chronic Conditions Data Warehouse data[22] (for 2015 forward) to estimate revenue for government-owned HHAs. Before the Census data became available, estimates were based on Medicare cost report data and survey data from the National League for Nursing.

**Methods:** For employer-based establishments, estimates of freestanding home health spending starting in 1987 and for years ending in 2 and 7 are based on business receipts of private taxable and tax-exempt firms collected in the U.S. Census Bureau's quinquennial Economic Census (EC).[9] Information from the U.S. Census Bureau's Service Annual Survey[10] is used to interpolate between the EC benchmark years until 2022, and trends from the U.S. Census Bureau's Quarterly Services Survey[12] are used to extrapolate to later periods. Receipts of non-employer taxable firms are then added to the revenue for employer-based taxable and tax-exempt firms to estimate calendar year expenditures for home health care services.

Revenue for government-owned HHAs are estimated by calculating an annual adjustment factor using a ratio of Medicare reimbursements for government-owned freestanding HHAs to Medicare reimbursements for all privately owned freestanding HHAs, which are obtained using tabulations from the Medicare Provider Analysis and Review database. This ratio, multiplied by Census receipts, produces an estimate of revenue for freestanding government facilities, which is then added to the receipts for private establishments.

Freestanding home health expenditures for 1967 through 1987 were primarily based on data available from the Medicare and Medicaid programs. In the mid-1970s, analysis of Medicare cost report data from home health agencies that were not part of a hospital or nursing home indicated that agency costs for services, medical equipment, and supplies provided to Medicare patients represented approximately 50 percent of total agency costs.[23] Examination of annual data for 1981-84 verified Medicare's 50-percent share. Estimates of spending for home health care from 1960 through 1966 were obtained from information reported by a sample of voluntary public health nursing agencies in surveys conducted by the National League for Nursing in 1958, 1963, and 1967. These survey data on total agency income and income from patient fees were weighted to estimate income of all voluntary public health nursing agencies and then estimated for each non-survey year between 1958 and 1968.[24]

### Nursing Care Facilities and Continuing Care Retirement Communities

**Definition:** The nursing care facilities and continuing care retirement communities category of the NHEA includes freestanding facilities that are primarily engaged in providing inpatient nursing, rehabilitative, and continuous personal care services to persons requiring nursing care (NAICS 6231) and continuing care retirement communities with on-site nursing care facilities (NAICS 623311).

In the NHEA, hospital-based nursing home care is included with hospital care expenditures (NAICS 622).

**Data Sources:** Estimates of expenditures for nursing care facilities and continuing care retirement communities are developed from revenue data from the U.S. Census Bureau's Economic Census, Service Annual Survey, and Quarterly Services Survey. Data from the Bureau of Labor Statistics' (BLS) Quarterly

Census of Employment and Wages (QCEW).[25] is used in the estimation of expenditures for state and local government nursing facilities, while spending for nursing facilities operated by the Veterans Administration (VA) are based on VA program data.

**Methods:** Estimates of expenditures for care received in private freestanding nursing homes for the years ending in 2 and 7 starting in 1977 are based on business receipts of service establishments from the U.S. Census Bureau's quinquennial Economic Census (EC).[9] Information from the U.S. Census Bureau's Service Annual Survey[10] is used to interpolate between the EC benchmark years and extrapolate to later periods. For state and local nursing facilities, BLS wages and salaries are converted to estimated revenues using a ratio of government wages to revenues, which is based on private wage and revenue data from the EC as a proxy. Government outlays for care provided in nursing facilities operated by the Department of Veterans Affairs are added to the private establishment estimates detailed above.

Estimates of freestanding nursing home spending prior to 1977 are based on total nursing home expenditures from the National Center for Health Statistics' estimates of average revenue per day for all facilities providing some nursing care.[26] The estimates were interpolated and extrapolated using employee work hours for nursing and personal care facilities[27] multiplied by the growth in skilled nursing facility input prices.[28]

## *Medical Goods*

### Prescription Drugs

**Definition:** The retail prescription drugs category includes retail sales of human-use, dosage-form drugs, biological drugs, and diagnostic products that are available only by a prescription. These include retail prescription drug purchases that occur in pharmacies and drug stores (including both chain and independent), supermarkets and other grocery store pharmacies, mail-order and other direct-selling establishments, department stores, warehouse clubs and supercenters, and all other general mass-merchandising establishments.

**Data Sources:** Prescription drug purchases from these retail establishments are based on data from the quinquennial Census of Retail Trade (CRT).[29] and from annual data purchased from IQVIA.[30]

**Methods:** In benchmark years (years ending in 2 or 7), retail prescription drug expenditures are based on the Census of Retail Trade, Merchandise Line Sales for pharmacies and drug retailers, warehouse clubs and supercenters, and supermarkets and other grocery retailers. Added to the Census of Retail Trade data are estimates of non-employer receipts for sales of prescription drugs in pharmacies and drug stores. In addition, estimates for government-run mail order facilities as well as estimates for state-specific sales taxes on prescription drugs are added to total spending estimates in benchmark years. To interpolate between benchmark years and extrapolate to later periods, information from the IQVIA National Prescription Audit and the Method of Payment Report[30] are used.

Next, the prescription drug estimates are adjusted to account for manufacturers' rebates that reduce insurers' net payments for drugs. Providers and insurers who are responsible for the purchase of large volumes of drugs have been able to negotiate rebates with manufacturers for the use of specific drugs. Rebates received by providers such as hospitals do not require an adjustment because rebate savings are received directly by hospitals whose revenues are used to measure hospital spending. In retail purchases of prescription drugs, however, the retail outlet is not a party to the rebate transaction that takes place between the insurer who pays the retail outlet and the manufacturer that produces the drug. Because the NHEA estimates of prescription drugs are based on retail sales data at the pharmacy level, a reduction to account for manufacturers' rebates must be made to total drug spending and to third-party payments to retail pharmacies to avoid over-estimation of prescription drug spending. Administrative data is used to estimate rebates for programs run by the federal and state and local governments. For private health insurance (PHI), we estimate rebates using data from the Medical Loss Ratio (MLR) Data and System Resources public use

file.[31] Additionally, retail prescription drug spending in the NHEA is net of any rebates or discounts given by pharmacies.

### Other Non-Durable Medical Products

**Definition:** Other non-durable medical products include retail sales of non-prescription drugs (such as analgesics, cough and allergy medications), as well as medical sundries (including surgical and medical instruments, surgical dressings, and diagnostic products such as needles and thermometers). This category includes sales of these products to individuals, but excludes purchases made by health care providers or facilities.

**Data Sources:** Estimates of consumer retail purchases of these products are derived from Personal Consumption Expenditures (PCE) data from the U.S. Bureau of Economic Analysis (BEA).[2]

**Methods:** The estimate for other non-durable medical products reflects the two relevant PCE categories since they align with the NHE definition of other non-durable medical products. It captures total expenditures on non-prescription drugs and other medical products for the period 1960–2024.

### Durable Medical Equipment

**Definition:** Durable Medical Equipment expenditures include medical products intended for repeated or long-term use, generally with a useful life of three years or more. This category covers items such as contact lenses, eyeglasses and other ophthalmic goods, surgical instruments and supplies, prosthetic and artificial devices, orthopedic equipment, and hearing aids. In addition to purchases, rental payments for DME are also included in this estimate.

**Data Sources:** Durable Medical Equipment estimates are based on several federal data sources, including the Medical Expenditure Panel Survey (MEPS), Personal Consumption Expenditures (PCE), the Economic Census (EC), the Input-Output (I-O) Accounts, and a supplementary table known as the PCE Bridge Table, which links PCE categories to the I-O framework.[2]

**Methods:** Durable Medical Equipment (DME) estimates are benchmarked to the Input-Output (I/O) accounts (when available) and Economic Census (EC) data and then adjusted to align with the NHE definition. For non-benchmark years, total DME expenditures are extrapolated and interpolated using the annual PCE Bridge Tables. In years when that information is unavailable, DME expenditures are estimated using trends in the PCE for therapeutic appliances and equipment.

## *Payers and Programs for Medical Services and Goods*

The payers and programs for personal health care (PHC) shown in Exhibit 4 are directly responsible for purchasing or providing medical goods and services. These payers include out-of-pocket, health insurance, and other third-party payers and programs.

**Exhibit 4: Structure of the NHEA by Source of Funds**

**National Health Expenditures (NHE)**

equals HCE plus Investment

***Health Consumption Expenditures (HCE)***

*equals PHC plus Government Administration, Non-Medical Insurance Expenditures, Public Health Activities*

**Personal Health Care (PHC)**

- Out-of-Pocket
- Health Insurance
  - Private Health Insurance
  - Medicare
  - Medicaid (Title XIX)
  - Children's Health Insurance Program (Title XIX and Title XXI)
  - Department of Defense
  - Department of Veterans Affairs
- Other Third-Party Payers and Programs
  - Worksite Health Care
  - Other Private Revenues
  - Indian Health Services
  - Workers' Compensation
  - General Assistance
  - Maternal/Child Health
  - Vocational Rehabilitation
  - Other Federal Programs
  - SAMHSA
  - Other State and Local Programs
  - School Health

**Government Administration**

**Non-Medical Insurance Expenditures**

**Public Health Activities**

***Investment***

**Non-Commercial Research**

**Structures and Equipment**

Source: Centers for Medicare & Medicaid Services, Office of the Actuary, National Health Statistics Group.

### Out-of-Pocket

**Definition:** Out-of-pocket (OOP) spending for health care consists of direct spending by consumers for health care goods and services including the amount paid out-of-pocket for services not covered by insurance. It also includes copayments, coinsurance, or deductibles required by private health insurance (PHI) and public programs such as Medicare and Medicaid (not paid by some other third party), as well as payments covered by health savings accounts (HSAs).

Premium payments for private insurance plans (including Medicare Advantage private plans) are not included in out-of-pocket spending since the payment by the enrollee is paid to a third-party insurer (PHI or Medicare) that is classified in the NHEA as a separate source of funds. Similarly, coinsurance and deductible amounts paid by supplementary Medicare policies on behalf of enrolled Medicare beneficiaries are also excluded from the out-of-pocket source of funds category and are counted as private health insurance.

**Data Sources:** For hospitals, physicians and clinics, dental, other professionals, home health, and nursing home services, the Service Annual Survey[10] provides data on out-of-pocket payments along with all other sources of funds. Other sources of data that are used to estimate out-of-pocket spending include Medicare and Medicaid program data, the Health Care Cost and Utilization Report,[32] IQVIA,[30] the Medical Expenditure Panel Survey,[41] the Medicare Current Beneficiary Survey,[33] the Consumer Expenditure Survey[34] as well as trade association publications such as from the Visiting Nurses Association,[35] the American Hospital Association,[11] the American Medical Association,[36] and the American Dental Association.[37]

In previous years, data from surveys of the non-institutional population's health care use and financing patterns provided information used to determine the amount of out-of-pocket spending. For 1963 and 1970, the Center for Health Administration Studies and the National Opinion Research Center, both at the University of Chicago, surveyed individuals for the purpose of providing "reliable and valid statistics of medical care use and expenditures".[38] These studies were followed by the National Medical Care Expenditure Survey (for 1977 and 1987),[39] the National Medical Care Utilization and Expenditure Survey (for 1980),[40] and the Medical Expenditure Panel Survey-Household Component (MEPS-HC) (for 1996-2008).[41]

**Method:** Out-of-pocket expenditures are estimated using a residual methodology. First, for each NHE type of service, overall expenditures are estimated (see methodology for each individual service piece). Second, payments for public payers (which are estimated using payer-specific program data) are subtracted from total expenditures, with the residual remaining for private payers. The private residual is allocated using information from survey data such as the Service Annual Survey, as well as other sources that may be available specific to each service industry. Using percent distributions that are developed to allocate the private residual, the appropriate amount of expenditures are allocated to private health insurance, out-of-pocket spending, and other private revenues.

### Health Insurance

This aggregate category includes private health insurance, Medicare, Medicaid, the Children's Health Insurance Program, the Department of Defense and the Department of Veterans Affairs. These plans provide enrollees and beneficiaries insurance against medical losses and, in some instances, directly provide medical care.

### Private Health Insurance

**Definition:** Private health insurance expenditures in the NHEA include total outlays for private health insurance coverage. This estimate includes Health Maintenance Organizations, Preferred Provider Organizations, Point of Service Plans, Consumer Directed Plans, and indemnity plans, among others.

**Data Sources:** Private health insurance benefits by type of service are estimated using provider survey data from the U.S. Census Bureau in conjunction with source of funding spending from several sources. These sources include the American Medical Association,[36] the American Hospital Association,[11] A.M. Best,[42] the Centers for Medicare & Medicaid Services,[43] as well as household data from surveys such as the National

Medical Care Expenditure Survey[39] and the Medical Expenditure Panel Survey-Household Component (MEPS-HC).[41]

**Method:** Private health insurance expenditures are estimated using a residual methodology. First, for each NHE type of service, overall expenditures are estimated (see methodology for each individual service piece). Second, payments for public payers (which are estimated using payer-specific program data) are subtracted from total expenditures, with the residual remaining for private payers. The private residual is allocated using information from survey data such as the Service Annual Survey, as well as other sources that may be available specific to each service industry. Using percent distributions that are developed to allocate the private residual, the appropriate amount of expenditures are allocated to private health insurance, out-of-pocket spending, and other private revenues.

**Medicare**

**Definition:** Medicare is a health insurance program for people aged 65 or older, people under the age of 65 with certain disabilities, and people of all ages with end-stage renal disease (ESRD). Medicare consists of four main parts: Hospital Insurance (HI), or Part A; Supplementary Medical Insurance (SMI), or Part B; Medicare Advantage private plan coverage, or Part C; and Prescription Drug Coverage, or Part D.

Medicare is offered in one of two options, the first being original fee-for-service, which is a traditional health care model where providers are reimbursed for each service they provide and beneficiaries pay a portion of the costs. Fee-for-service covers Part A services, which includes inpatient hospital, skilled nursing facilities, home health care, and hospice care; Part B services, which includes outpatient hospital, physician services, home health care, durable medical equipment, laboratory tests performed in physician offices and independent laboratories, and services provided by other medical professionals; and Part D which includes retail prescription drugs.

Medicare is also offered through Medicare private plans (commonly referred to as “Medicare Advantage”) where private insurance companies contract with the federal government to provide a standard package of Medicare benefits (Parts A, B, and D), and sometimes extra benefits such as vision, hearing, and dental coverage, to their enrollees. Medicare pays a pre-determined per enrollee monthly amount to the Medicare Advantage private health plan to cover the costs of providing services to their members. Collectively, Medicare Advantage private plan spending is referred to as Part C.

**Data Sources:** Estimates of Medicare spending for personal health care are based on information prepared by the Centers for Medicare & Medicaid Services’ (CMS) Office of the Actuary for the Medicare Trustees Report,[44] bid pricing tool data submitted by Medicare contractors, and Medicare administrative and statistical records.

**Method:** Medicare expenditures by type of service are separately estimated for traditional fee-for-service and for Medicare Advantage private health plans. Fee-for service and private plan expenditures are then summed for each type of service, and subsequently the services are summed to represent total incurred Medicare benefit spending.

To estimate fee-for-service expenditures, incurred benefit spending data from the annual Medicare Trustees Report is used. Because the NHEA reflect spending based in the U.S. only (50 states plus the District of Columbia), an adjustment is first made to exclude spending for U.S. territories and outlying areas. Next, Medicare statistical and program data are used to convert, or crosswalk, the published categories from the Medicare Trustees Report to NHE service categories. For example, Part A Trustees Report data (which includes inpatient hospital care, skilled nursing facilities, Part A home health care, and hospice services) are crosswalked into the NHE categories for hospitals, nursing care facilities, and home health care. In the NHEA, hospital-based skilled nursing care, hospital-based home health care, and hospital-based hospice services are all included in the NHE hospital category. Additionally, Trustees Report data for Part B carrier services (which includes Part B fee schedule services, physician-administered drugs, laboratory services, and durable medical equipment) are crosswalked into the NHE categories for physician services, dental

services, other professional services, home health care, nursing home care, retail prescription drugs, durable medical equipment, and other non-durable medical products. Trustees report data for Part B intermediary services (which includes outpatient hospital, Part B home health care, and other intermediary services) are mapped into hospital care, home health care, and clinical services.

To estimate Medicare Advantage private plan expenditures by type of service, total Part C Trustees Report incurred spending is allocated using information submitted to CMS on plans' bid pricing tools. Bid pricing tools are used to inform CMS about the types of services that the plan intends to provide to their enrollees for the upcoming contract year, and they also contain information about base period experience for the most recent full year.

**Medicaid**

**Definition:** Medicaid provides health coverage to Americans, including eligible low-income adults, children, pregnant women, elderly adults and people with disabilities. Medicaid is administered by states, according to federal requirements. The program is funded jointly by states and the federal government.

**Data Sources:** Medicaid estimates are based primarily on financial information filed by state Medicaid agencies on Form CMS-64.[45] These state level reports provide total program net expenditures by Medicaid program category including program administration and premiums. Prior to the availability of the Quarterly Expense Report (Form CMS-64) in 1979, state statistical reports (Form CMS-2082) were used to develop service distributions.

**Method:** Medicaid expenditures, as reported by state by program categories on Form CMS-64, are mapped to NHEA service categories for each state. For example, total Medicaid hospital spending is the sum of eleven types of program payments, including: inpatient hospital–regular, inpatient hospital–disproportionate share hospital (DSH), inpatient hospital–supplemental, inpatient hospital–graduate medical education, mental health facility services–regular, mental health facility–DSH, outpatient hospital services–regular, outpatient hospital services–supplemental, emergency hospital services, health information technology incentive payments, and critical access hospitals. All program categories are assigned to NHEA service categories in this fashion. CMS-64 categories that pertain to home and community-based waivers are included in the NHEA category for Other Health Residential and Personal Care Services.

A series of adjustments are then made to the CMS-64 data, including a) allocating expenditures to the appropriate year to account for payments that occurred in prior periods, b) moving hospital-based nursing home and home health expenditures to the hospital category, and c) deducting expenditures for Medicaid buy-ins to Medicare to avoid double counting in the NHEA. For durable medical equipment (DME) Medicaid spending, the estimate is developed from the Medicaid Analytic eXtract (MAX)[46] through 2014 and the TAF Research Identifiable Files version of the Transformed Medicaid Statistical Information System[47] for more recent periods.

For capitated and other insurance premium payments included with CMS-64 data, the method is to first remove administrative costs and an estimated portion of state-directed payments from Medicaid premium payments. State-directed payments are then allocated to services using Office of the Actuary analysis of state-directed payment preprints.[48] The remainder of premiums are then allocated to NHEA service categories using TAF and 2017 Economic Census Health Care and Social Assistance: Revenue by Type of Payer for the US and States: 2017.[49] In certain states, additional adjustments are made to account for specific services or products that are carved out of the premium. These carve-outs typically occur for prescription drugs and dental services.

**Children's Health Insurance Program (Title XIX and Title XXI)**

**Definition:** The Children's Health Insurance Program (CHIP) is a joint federal/state program that provides health insurance for children in families that do not have health insurance coverage and are not eligible for Medicaid. CHIP was created in 1997 with the enactment of the Balanced Budget Act of 1997 (BBA97). The

BBA97 gave states the option to set up new independent health insurance programs for children (Title 21), to expand existing state Medicaid programs to insure children who were eligible for health insurance coverage under CHIP eligibility standards (Title 19), or to use a combination of CHIP programs and Medicaid expansions. The Children's Health Insurance Program Reauthorization Act of 2009 (CHIPRA or Public Law 111-3) reauthorized CHIP through FY 2013. The Affordable Care Act of 2010 (ACA) extended CHIP funding through FY 2015, and the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA) further extended CHIP funding through FY 2017. The Healthy Kids Act funded CHIP for six years (FY2018 to FY2023) and the Bipartisan Budget Act of 2018 funded CHIP for four more years (FY2024 to FY2027).

**Data Sources:** State Children's Health Insurance Program (SCHIP) spending data is gathered from Form CMS-21. Medicaid expansion-based CHIP programs (MCHIP) spending data is gathered from Form CMS-64.[45]

**Method:** Quarterly SCHIP and MCHIP data by state are extracted from the relevant forms and aggregated into calendar years. The state data are aggregated to obtain a U.S. total. Service distributions are derived from program payment data and aligned with NHEA service categories using the same methodology as used for the Medicaid estimates.

**Department of Defense**

**Definition:** The Department of Defense (DOD) provides health care through the Military Health System (MHS) and its TRICARE program to members of the uniformed services, their families and their survivors, as well as retired members and their families. The MHS consists of direct care system, where beneficiaries obtain care at military treatment facilities (MTF), and a purchased care system, where beneficiaries obtain care from private sector providers administered by TRICARE network contracts.

**Data Sources:** Health care expenditures data come directly from DOD. These are sourced from the DOD FY Presidents Budget submissions,[50] unpublished data for active-duty spending by service,[51] and data for non-active-duty spending by service.[52] Additionally, receipts to the Defense Health Program from the DOD Medicare Eligible Retiree Health Care fund are included, covering health care costs of Medicare-eligible retirees, their families, and survivors.

**Method:** DOD budget and Medicare-Eligible Retiree Health Care Fund (MERHCF) data are combined to calculate sums for direct care (provided in MTF) and purchased care. These expenditures are then allocated to NHEA services based on the distribution of DOD spending by service. Administration spending is based on actual program data. All DOD spending data is converted from a federal fiscal year to a calendar year and adjusted to exclude spending outside the scope of the NHEA, such as expenditures for non-DOD beneficiaries (e.g., Coast Guard, Public Health Service, and National Oceanic and Atmospheric Administration).

**Department of Veterans Affairs**

**Definition:** The Department of Veterans Affairs provides health care and other services to Veterans and other eligible beneficiaries through the Veterans Health Administration, which provides a broad range of primary care, specialized care and related medical and social support services that are uniquely related to Veterans' health or special needs.

**Data Sources:** The Department of Veterans Affairs (VA) estimates of health expenditures are prepared using unpublished detailed quarterly expenditure data supplied by the VA[53] supplemented with data from the Appendix to the Budget of the U.S. Government,[54] Monthly Treasury Statements of Receipts and Outlays of the U.S. Government,[55] and VA Annual Reports and Congressional Submissions.[56]

**Method:** Using fiscal quarterly data obtained directly from the VA, expenditures for each detailed VA category are crosswalked to NHE service categories and then are converted to calendar year totals. Annual fiscal and calendar year growth rates from Monthly Treasury Statements, the Budget Appendix, and other annual VA reports are used to compare and validate the trends of the expenditure data obtained from the VA.

### Other Third-Party Payers and Programs

#### Worksite Health Care

**Definition:** Worksite health care includes health care goods and services that are directly provided by employers to their employees. This includes services such as those provided at an on-site health unit, such as the administration of flu shots and blood tests and onsite physician services.

**Data Sources:** The worksite health care estimate is based primarily on a 1967 estimate of the cost per employee for those with access to worksite health care services, obtained from historical surveys of employer-sponsored health plans. Other data sources used to estimate worksite health care expenditures include the number of employed civilians and the Consumer Price Index (CPI)[16] for physicians, both from the Bureau of Labor Statistics, as well as data from Mercer's National Survey of Employer-Sponsored Health Plans[17] and from the Kaiser Family Foundation/Health Research and Educational Trust Survey of Employer-Sponsored Health Benefits.[18]

**Method:** In 1967, cost data from surveys of employer-sponsored health plans was used to produce an original estimate of costs per employee for those with access to worksite health care services. Costs per employee in 1967 were extrapolated to earlier and later years using the CPI for physician services. To estimate the number of employees with access to worksite health care, the number of employed civilians is multiplied by an assumption for the percentage of employees with access to worksite health care. Costs per employee are then multiplied by the estimate of the number of employees with access to worksite health care to produce total worksite health care costs. The estimate is then adjusted to account for growth in the use and intensity of services.

#### Other Private Revenues

**Definition:** Other private revenues include the medical portion of property and casualty insurance, philanthropic support, and non-patient revenue. Philanthropic support may be direct from individuals or may be obtained through philanthropic fund-raising organizations such as the United Way, or other foundations or corporations. Philanthropic revenues may be spent directly for patient care or may be held in an endowment fund to produce income to cover current expenses. For institutions such as hospitals, nursing homes and home health agencies, other private funds also include non-patient income from the operation of gift shops, cafeterias, parking lots, educational programs, and investment income.

**Data Sources:** Estimates of other private revenues, including philanthropy, are based on information from the U.S. Census Bureau' Services Annual Survey,[10] trade associations, the American Hospital Association Annual Survey,[11] and person surveys such as the National Medical Care Expenditure Survey[39] and the National Medical Care Utilization and Expenditure Survey.[40] The medical portion of property and casualty insurance is also included in this estimate. First, estimates of property and casualty insurance benefits are developed for automobile, homeowners, and multi-peril insurance using annual data for premiums earned and direct losses incurred that are published by A.M. Best.[42] The medical portion of these data are further estimated using data from the Insurance Information Institute[57] and from the National Highway Traffic Safety Administration.[58]

**Method:** Other Private Revenues are estimated using a residual methodology. First, for each NHE type of service, overall expenditures are estimated (see methodology for each individual service piece). Second, payments for public payers (which are estimated using payer-specific program data) are subtracted from total expenditures, with the residual remaining for private payers. The private residual is allocated using information from survey data such as the Service Annual Survey, as well as other sources that may be available specific to each service industry. Using percent distributions that are developed to allocate the private residual, the appropriate amount of expenditures are allocated to private health insurance, out-of-pocket spending, and other private revenues. An estimate of the medical component of property and casualty insurance by service is also estimated and is included with other private revenues.

### Indian Health Services

**Definition:** The Indian Health Service (IHS), an agency within the Department of Health and Human Services, is responsible for providing federal health services to American Indians and Alaska Natives. The provision of health services to members of federally recognized tribes grew out of the special government-to-government relationship between the federal government and Indian tribes. The IHS is the principal federal health care provider and health advocate for Native American people.

**Data Sources:** The NHEA estimate of IHS spending is based on data from the Appendix to the Budget of the U.S. Government.[54] The IHS Budget justification document is also used to estimate the goods and services distributions of IHS spending.

**Method:** The IHS funding obligations from the President's Budget are cross walked to NHEA categories and adjusted to estimate funding outlays. Data from IHS congressional justification documents and historical data are used to distribute the outlays into NHEA service categories, while administration spending is based on historical data.

### Workers' Compensation

**Definition:** Workers' compensation includes medical benefit expenditures that are paid by workers' compensation insurance programs. These programs are prescribed by state or federal laws for which costs are paid directly by employers or workers. This includes: all state workers' compensation programs; the Federal Employees' Compensation Act (FECA), which provides benefits to federal workers; the portion of the Longshore and Harbor Workers Act (LHWCA) paid by employers, which provides protection to longshore, harbor, and other maritime workers; the portion of the Black Lung Benefits Act financed by employers, which provides compensation to coal miners with black lung disease; and the Energy Employees Occupational Illness Compensation Program.

The U.S. Department of Labor, Office of Workers' Compensation Programs, administers compensation programs that provide benefits to federal workers or their dependents that are injured at work or acquire an occupational disease. These benefits include wage replacement, medical treatment, and vocational rehabilitation, with death benefits also available to survivors.

Non-federal workers' compensation programs are financed almost exclusively by employers. Premiums are based on industry classification and the occupational classification of their workers. Most large employers are also experience-rated. All non-federal workers' compensation programs are designed and administered by the state. Generally, state laws require that all non-federal employers purchase insurance, either from commercial (private) insurers or from publicly operated state funds or prove that they have the financial ability to carry their own risk (self).

**Data Sources:** Estimates for federal workers' compensation programs are based on the Appendix to the Budget of the U.S. Government[54] and medical benefits and administrative costs from the U.S. Department of Labor.

For non-federal workers' compensation, expenditures are estimated using data from the Census Bureau's Service Annual Survey (SAS)[10] and the National Association of Insurance Commissioners (NAIC) Market Share Reports for Property/Casualty Groups and Companies.[59] For 1994-2022, national data on workers' compensation benefits and costs were based on data from the National Academy of Social Insurance (NASI).[60] For 1993 and years prior, data was obtained from the Social Security Administration (SSA).

**Method:** For historical estimates through 2022, workers' compensation estimates are based on employer costs and benefits paid using data from NASI publications. To extrapolate medical benefits to the current year, a historical workers' compensation medical benefits trend was developed from SAS data and applied to the 2022 NASI-based medical benefit estimate. To estimate workers' compensation non-medical expenditures through 2022, the difference between employer costs and benefits paid based on NASI data

was calculated. For 2023 forward, the NASI-based non-medical expenditure level is extrapolated using data from NAIC on direct premiums and losses.

**General Assistance**

**Definition:** General assistance expenditures in the NHEA include two types of programs: General assistance programs that are often modeled after Medicaid, and State Pharmaceutical Assistance Programs (SPAP) that provide low-income and medically needy senior citizens and individuals with disabilities financial assistance for prescription drugs.

General assistance refers to direct payments for health care goods or services to or on behalf of needy people who do not qualify for federally financed assistance programs. These payments are provided by state and local governments and are not financed in whole or part by federal funds. General assistance may be administered by the state welfare agency, a local agency, or a local agency under state supervision. Eligibility requirements and payment levels of general assistance programs vary greatly from state to state and often within a state. SPAP data are collected separately from other general assistance data.

**Data Sources:** Estimates of general assistance and SPAP expenditures are based on data from the annual State Expenditures Report by the National Association of State Budget Officers (NASBO),[61] along with data collected directly from the pertinent state or county agencies, as no national clearinghouse for these data exists.

**Method:** Historical estimates, based on state-level data of general assistance programs, are extrapolated using the growth in NASBO Other Cash Assistance for most states, while state budget data for general assistance programs are used to estimate the remainder. Estimates of SPAPs are based on data collected directly from each participating state.

**Maternal and Child Health**

**Definition:** The Maternal and Child Health program is a joint federal and state program that promotes and improves the health and well-being of mothers, children, and families. The program is administered by the Department of Health and Human Services under the Health Resources and Services Administration through the Maternal and Child Health Bureau. The program seeks to improve access to quality care (especially for individuals with low income), reduce infant mortality, provide comprehensive prenatal and postnatal care for women, increase health assessments and diagnostic and treatment services, provide access to preventive and rehabilitative services for children in need of specialized medical services, and create family-centered, community-based systems of coordinated care for children with special health care needs.

Maternal and child health funds are distributed to grantees from 59 states and other jurisdictions (59 total grantees). States and other jurisdictions must match every four dollars of federal money that they receive with at least three dollars of state and/or local money (i.e., non-federal dollars).

**Data Sources:** Data for federal and state Maternal and Child Health spending is obtained directly from the Maternal and Child Health Bureau. The federal portion is based mainly on the State Maternal and Child Health block grant program, Special Projects of Regional and National Significance, and Community Integrated Service Systems. The historical state and local spending estimate is based on Public Health Foundation data[62] and data from 1998 forward is available on the Maternal and Child Health Bureau website.[63]

**Method:** Aggregate personal health care and administrative spending for Maternal and Child Health (MCH) is first estimated and then converted from fiscal years to calendar years, covering both federal and state & local MCH expenditures. These totals are subsequently distributed into various service categories using the NHEA service distributions.

### Vocational Rehabilitation

**Definition:** The vocational rehabilitation program is financed through federal, state, and local government funds to support the rehabilitation of individuals with physical and mental impairments. Within the NHEA, only personal health care goods and services funded by this program are included.

**Data Sources:** Data for the vocational rehabilitation program are obtained from the Appendix to the Budget of the U.S. Government[54] and from the U.S. Department of Education's vocational rehabilitation state grant program,[64] which provides information on federal, state, and local spending. Historical service-level expenditures were obtained from cost report data from the Rehabilitation Services Administration, a sub-agency within the Department of Education.[65]

**Method:** Total expenditures for vocational rehabilitation are estimated based on state grant data, which include current and projected federal, state, and local spending. Historically, total spending was then allocated to the NHEA categories for Hospitals, Physicians and Clinical Services, and Durable Medical Equipment using cost report data from the Rehabilitation Services Administration. For 2021 and forward, total vocational rehabilitation expenditures are allocated using service distributions derived from total national health expenditures.

### Other Federal Programs

**Definition and Data Sources:** This category includes federal health care funds and grants budgeted to various federal agencies that are not reflected in other categories in the NHEA, Office of Economic Opportunity expenditures, Non-XIX federal expenditures, Pre-Existing Conditions Insurance Plan expenditures, and expenditures for the Provider Relief Fund and Paycheck Protection Program Loans.

Data on health care funds and grants are obtained from the Budget Appendix of the U.S. Government for the Health Resources and Services Administration (HRSA) and the Department of Health and Human Services (DHHS). Estimates of other federal program expenditures are based, in part, on data reported by the budget offices of federal agencies, such as for the Assistant Secretary for Health, Howard University Hospital, Department of Education, Department of Justice, AmeriCorps, and the Department of Defense (civilian programs). Several differences exist between spending definitions in the federal budget and those used in the conceptual framework of the NHEA. Expenditures for the education and training of health professionals (including direct support of health professional schools and student assistance through loans and scholarships) are not included in the NHEA. Furthermore, payments made by government agencies for employee health insurance are included with private health insurance expenditures rather than government expenditures.

Expenditures for two programs that no longer exist are included in earlier years. Expenditures for the Office of Economic Opportunity were included in the NHEA category for Other Federal Programs during 1965 to 1973, and non-XIX federal expenditures were included during 1960 to 1971.

Pre-Existing Conditions Insurance Plans (2010–2014) were created under the Affordable Care Act of 2010 (ACA) to provide a health coverage option for U.S. citizens and legal residents that have been without health coverage for at least six months, have a pre-existing condition, or have been denied health coverage because of their health condition.

The Provider Relief Fund (PRF) and Paycheck Protection Program (PPP) Loan programs were created in 2020 as a response to the coronavirus disease 2019 (COVID-19) pandemic. The Provider Relief Fund was designed to offset health care providers' loss in revenue from the pandemic, as well as to give them resources to improve their ability to fight the COVID-19 pandemic. The PPP Loan program was designed to help small businesses maintain employees and cover other eligible expenses by providing forgivable loans. While not directly targeted at healthcare providers, healthcare providers that met eligibility requirements took part in the program. Expenditures for the Provider Relief Fund were estimated using data from the Health Resources and Services Administration, and expenditures for the PPP Loan program were estimated using data from the Small Business Administration.

**Method:** Funding amounts from federal budget data are either directly assigned or estimated for the following service categories: Hospitals, Clinics, and Other Health Residential and Personal Care. Estimates for the Provider Relief Fund and PPP Loans are allocated to the appropriate NHEA service categories and are then summed to incorporate into the overall estimate for Other Federal Programs.[66]

#### Substance Abuse and Mental Health Services Administration

**Definition:** The Substance Abuse and Mental Health Services Administration (SAMHSA) provides grants or outlays for program areas such as: Substance Abuse Treatment Capacity, Mental Health System Transformation, Strategic Prevention Framework, Co-Occurring Disorders, Seclusion & Restraint (elimination of), Older Adults, and HIV/AIDS & Hepatitis. These funds are used in part to purchase or provide personal health care services.

**Data Sources:** The data sources for this estimate include the SAMHSA budget, monthly treasury statements from the Department of the Treasury,[55] and the Appendix to the Budget of the U.S. Government.[54]

**Method:** SAMHSA expenditures are estimated in two pieces: program administration and services provided. Both components are estimated based on data from the SAMHSA budget. Expenditures for program administration are scaled to remove research expenditures using a ratio of substance abuse plus mental health outlays divided by total outlays (substance abuse, mental health, and all other outlays) minus program management outlays from the budget. Spending is then allocated to the service categories using budget block grant and SAMHSA provider data.

#### Other State and Local Programs

**Definition:** Other state and local programs include temporary disability insurance, state and local subsidies to providers, and non-XIX state and local health care expenditures.

In general, all spending by state and local governments that are not reimbursed by the federal government (through benefit payments or grants-in-aid) nor by patients or their agents are treated as state and local expenditures. As with federal expenditures, payments for employee health insurance by state and local governments are included in private health insurance.

Temporary disability insurance includes medical care benefits provided to workers as a result of temporary non-occupational disability or short-term sickness. This benefit is currently offered solely in the state of New York.

State and local subsidies are payments by the state and local government to hospitals, home health agencies, and other facilities owned by the state.

**Data Sources:** Data covering state and local programs come from a variety of sources. State agencies self-report information on state-specific programs. The U.S. Census Bureau collects data on state and local health and hospital expenditures through its quinquennial census and intercensal sample surveys.

Estimates for temporary disability insurance use data from the New York State Workers Comp Board and the Social Security Bulletin Annual Statistical Supplement.

**Method:** For temporary disability insurance, levels are from the New York State Workers Comp Board and the Social Security Bulletin Annual Statistical Supplement. For 2008 forward, estimates are imputed using data from the New York state labor force. Estimates are allocated to services using the latest NHE service distributions.

#### School Health

**Definition:** School health includes all personal health care expenditures for students in primary and secondary public and private schools. This may include school nursing services, hearing and vision tests, as well as more comprehensive clinical services.

**Data Sources:** The data sources used for this estimate include information from the Department of Education[67] and the National Public Education Financial Survey conducted by the U.S. Census Bureau.

**Method:** School health expenditure estimates for public schools are updated from data on public school expenditures for "other student and school activities". Spending occurring by private schools are built into the total by using a per student level from the public school estimate and multiplying this by total enrollment in both private and public schools.

## *Categories Added at the Health Consumption Expenditures Aggregation Level*

### Government Administration and Non-Medical Insurance Expenditures

This category includes the administrative costs of health care programs such as Medicare and Medicaid, as well as the non-medical insurance expenditures associated with various types of insurers and insurance plans. Non-medical insurance expenditures are defined as the difference between private health insurance expenditures and benefits incurred, and include administrative costs, additions to reserves, rate credits and dividends, premium taxes and fees, and net underwriting gains or losses.[68]

*Private Health Insurance*

The estimate of non-medical insurance expenditures by private health insurance plans is developed using data from A.M. Best[42] to estimate total premiums and benefits paid for insurance plans, including for indemnity, managed care, and property and casualty insurers. Additionally, estimates of self-insured plans and prepaid plans are developed using from data from the Medical Expenditure Panel Survey-Insurance Component (MEPS-IC)[69] and a variety of sources including the Survey of Health Insurance Plans conducted by the Health Care Financing Administration for earlier years.[15] Taken together, these data provide an estimate of the relationship between PHI expenditures and benefits, called the "insurer non-medical ratio" in the NHEA.

For years prior to 1996, the insurer non-medical ratio was developed using a number of health insurance industry sources. This method measured PHI expenditures and incurred benefits directly from the principal payment source. Data for the Blue Cross and Blue Shield plans were used to estimate the non-medical insurance expenditures of plans marketed by its members.[70] Annual data on PHI spending and benefits published by the National Underwriter Company[71] were used to develop estimates for commercial carriers through 1995. Estimates for prepaid plans in later years were developed using data from the Group Health Association of America which later became American Association of Health Plans.[72]

To produce a non-medical insurance expenditure level and total PHI expenditure level, the insurer non-medical ratio is applied to an estimate of PHI benefits by type of service for all years back to 1960. The PHI benefit level is estimated using provider survey data in conjunction with source of funding spending from several sources. These sources include the U.S. Census Bureau, the American Medical Association,[36] and the American Hospital Association[11] as well as household data from surveys such as the National Medical Care Expenditure Survey,[39] and later the Medical Expenditure Panel Survey-Household Component (MEPS-HC).[41]

*Medicare*

Medicare program spending includes administrative costs borne by the federal government to pay for salaries and expenses related to the federal management of Medicare Hospital Insurance (or Part A) and Supplementary Medical Insurance (or Parts B and D). Also included in total Medicare expenditures are non-medical insurance expenditures for private plans administering the Part C (Medicare Advantage) and Part D (prescription drugs) programs.

Medicare government administrative expenses are obtained from Department of the Treasury reports submitted to the Office of the Actuary, as reported annually in the Medicare Trustees Report.[44] For the non-medical insurance expenditures component of Medicare Advantage private plans, data is obtained from bid

pricing tool information that plans submit to the Centers for Medicare & Medicaid Services. Estimates of Part D administration are obtained from Medicare Trustees Report data and represent general Part D federal government administration and non-medical insurance expenditures for private plans.

When estimating the non-medical insurance expenditures for Part D, separate calculations are done for stand-alone prescription drug plans and for Medicare Advantage prescription drug plans.

Estimates of the non-medical insurance expenditures for Part C and Part D private plans are added to the estimates of general administrative costs of the federal government to equal total administrative and non-medical expenditures for Medicare.

*Medicaid*

For Medicaid, government administrative costs include federal and state and local salaries and expenses of the program, as well as non-medical insurance expenditures that are incurred by the private plans that insure Medicaid enrollees. Medicaid administrative costs are estimated using Centers for Medicare & Medicaid Services' (CMS) program data. Non-medical insurance expenditures are prepared using total premiums paid (from the CMS-64 forms)[45] and unique insurer non-medical ratios developed from AM Best's NAIC financial statements.[42] These estimates of private insurers' non-medical insurance expenditures are deducted from Medicaid premium payments and added to the Medicaid administrative cost estimates to derive Medicaid expenditures at the health consumption expenditure level. Medicaid premium payments that are reduced by non-medical insurance expenditures are allocated to the National Health Expenditure Accounts' service categories using TAF and 2017 Economic Census Health Care and Social Assistance: Revenue by Type of Payer for the US and States: 2017.[49]

*Children's Health Insurance Program*

Administration and non-medical insurance expenditures of private insurance for the Children's Health Insurance Program (CHIP) covers all of the federal and state and local salaries and expenses of the program as well as non-medical insurance expenditures by the private plans that insure CHIP enrollees.[42] These expenditures, when added to the personal health care expenditures for CHIP, equal the health consumption expenditures level for this program.

*Department of Defense and the Department of Veterans Affairs*

Administration estimates of the Department of Defense and the Department of Veterans Affairs cover federal salaries and expenses related to these health programs, including the administrative costs of providing care directly to beneficiaries in Department of Defense and/or Department of Veterans Affairs facilities. These expenditures, when added to personal health care expenditures, equal the health consumption expenditures level for these programs and are estimated using program data as well as information from the Appendix to the Budget of the U.S. Government.[54]

*Other Third-Party Payers and Programs*

Other third-party payers and programs that have administrative costs and/or the non-medical insurance expenditures of private health insurance include Indian Health Service, workers' compensation, Maternal and Child Health, vocational rehabilitation, other federal programs, and the Substance Abuse and Mental Health Services Administration. The estimates of non-medical insurance expenditures or direct administrative costs are estimated using a variety of sources including administrative or budget data as well as trade groups and other miscellaneous sources.

### Government Public Health Activities

#### Federal Public Health Activity

**Definition:** Government public health activity is defined as organizing and delivering population-wide health services such as epidemiological surveillance, inoculations, immunization/vaccination services, disease prevention programs, the operation of public health laboratories, and other such functions. These services may be funded by the federal government and/or state and local governments.

At the federal level, the Food and Drug Administration and the Centers for Disease Control and Prevention (CDC) account for the great majority of federal public health spending. Specific public health-related emergencies, such as the 9/11/2001 attack and the COVID-19 pandemic have led to additional funding through other federal funding sources as applicable, such as the Public Health and Social Services Emergency Fund, a portion of the HHS Departmental Management Budget, and certain functions within the Department of Homeland Security.

Government public health activities do not include government spending for public works, environmental functions (air and water pollution abatement, sanitation and sewage treatment, water supplies, etc.), or emergency planning.

**Data Sources**: Federal government: spending outlays are taken from annual budget documents prepared by the various agencies and summarized in the budget of the U.S.[54] Congressional budget justifications and treasury reports were also used to help estimate the amount and timing of public health spending for the COVID-19 pandemic.

**Methods:** Budget data are first accumulated from the Programs and Financing sections of the Budget Appendix as obligations for financing identified public health program conducted by the federal government. Wherever the entire budget is devoted to public health, the actual and projected outlays for these programs are added. Otherwise, other means for converting obligations to outlays are utilized. In many cases, these conversions were developed in earlier periods when the budget more explicitly labeled both obligations and outlays by program. Those ratios are still carried forward under the current system where only obligations are identified by program. In some cases, a number of public health programs are folded into an overall departmental budget.

#### State and Local Public Health Activity

**Definition:** State and local government public health activity expenditures are primarily for the operation of state and local health departments. Federal payments to state and local governments through other programs, such as Maternal and Child Health, are deducted to avoid double counting.

**Data Sources:** State and local governments' spending is estimated using data from the quinquennial (5-year) Census of Governments and from the Census Bureau's annual survey of state and local government finances; the latter surveys all state governments and a sample of local government units drawn from the 5-year Census. Estimates for the most recent year are extrapolated using the average growth rate of the prior 3 years. These state fiscal year estimates are then converted to calendar year estimates.

**Methods:** State and local public health activity is estimated using Census data on healthcare outlays by state and local governments less the associated outlays for capital expenditures, federal funding of state and local public health programs, maternal and child health grants, and the portion of state and local government research that is funded by the federal government and non-commercial organizations, all of which are not included in this estimate. For years beyond the latest available annual survey of state and local governments, the estimate is extrapolated using the prior year's growth.

## *Categories Added at the National Health Expenditures Aggregation Level*

### Investment

### Non-Commercial Research

**Definition:** Non-commercial research encompasses healthcare research conducted by non-profit entities. This includes research funded by federal and state governments, academic institutions, and nonprofit organizations such as foundations, professional societies, and individuals. It excludes research funded by for-profit firms.

**Data Sources:** There are three primary sources used to derive the non-commercial research estimate. Federal government funding is based on National Institutes of Health (NIH) budget outlays[54, 73] and National Science Foundation (NSF) research obligations.[74] State government funding is derived from the Higher Education Research and Development (HERD) Survey conducted by the NSF.[75] Private funding is based on the tax audit data from ProPublica's Nonprofit Explorer database.[76]

**Methods:** Noncommercial Research Funding includes federal, state and local, and private sources. Federal funding is derived primarily from the National Institutes of Health (NIH) budget, which reports annual outlays with a two-year projection. After subtracting capital-related expenditures, the remaining budget is assigned to research. Research obligations from other federal agencies to NIH, as published by the National Science Foundation (NSF), are then carried forward to all subsequent NIH budget years.

State and local funding is based on published academic data from the NSF's Higher Education Research and Development (HERD) Survey, which provides research and development expenditures at the total research level, while the non-academic portion of the estimate is extrapolated from 1997 forward using academic trends.

Private research estimates, which were incorporated into the NHEA in 1992, were initially derived from the same NSF sources used for state and local funding. From 2009 through 2015, IRS Form 990 data from the Urban Institute's National Center for Charitable Statistics[77] were incorporated to refine the private funding estimate, and for years after 2015, audited financial statements of nonprofit organizations classified as medical research were used to construct annual trends of receipts and extrapolate forward.

### Structures and Equipment

### Structures

**Definition:** The structures component of the NHEA is defined as the value of new construction put in place by non-retail medical establishments. The structures category includes new buildings; additions, alterations, and major replacements; mechanical and electric installations; and site preparation. It also includes the underlying costs of materials and labor, contractor profit, architectural and engineering work, those overhead and administrative costs chargeable to the project's owner, and interest and taxes paid during construction. Maintenance and repairs are excluded.

**Data Sources:** Private structures estimates for 2023 and 2024 are derived from Medicare cost report data[78] and U.S. Census Bureau Value of Construction Put in Place Survey data.[80] For 1993-2022, the primary data source for the private structures estimates is the Annual Capital Expenditures Survey (ACES).[79] The private structures' estimates for preceding years are based on data published by the U.S. Census Bureau[80] (1964-1992) and the Bureau of Economic Analysis (BEA) (1960-1964).

For public structures, the primary data source is BEA, Table 5.9.5. Gross Government Fixed Investment by Type.[2]

**Methods:** For 2023 and 2024, estimated historical relationships between ACES data and Medicare cost report data for hospitals and U.S. Census Bureau Value of Construction Put in Place Survey are applied to

2023 and 2024 trends obtained from these data sources to derive estimates of private structures for the NHEA. To estimate private structures for 1993-2022, total expenditures for new structures for NAICS 62 obtained from the ACES data are adjusted to reflect only expenditures within the scope of the NHEA. Specifically, the following expenditures for new structures are subtracted from the total: (1) NAICS 624 (except 6244) (Social Assistance (except Child Day Care Services), (2) NAICS 6244 (Child Day Care Services), and (3) a portion of NAICS 623 estimated to reflect NAICS 623312 (Assisted Living Facilities for the Elderly) and NAICS 623990 (Other Residential Care Facilities). The private structures' estimates for preceding years (1960-1992) are prepared by extrapolating the 1993 values back by a time series developed using data published by the U.S. Census Bureau (1964-1992) and the BEA (1960-1964).

For public structures, the estimates for 1960-2024 are equal to the gross government investment in health care structures (Federal and State & Local) from BEA, Table 5.9.5. Gross Government Fixed Investment by Type.

### Equipment

**Definition:** The equipment component of the NHEA is comprised of the value of new capital equipment (including software) purchased or put in place by non-retail medical establishments during the year. This definition is not limited to specific medical equipment or devices.

**Data Sources:** For 1993-2022, the primary data sources for the private equipment estimates are the ACES.[79] The private equipment estimates for preceding years are based on data published by the U.S. Census Bureau, Manufacturers' Shipments, Inventories, & Orders (M3) survey.[81]

For public equipment, the primary data source for 1960-2023 is data underlying BEA, Table 3.17, Selected Government Current and Capital Expenditures by Function.[2] Public equipment estimates for 2024 are derived based on data obtained from BEA, Table 3.9.5. Government Consumption Expenditures and Gross Investment.[2]

**Methods:** For 2023 and 2024, estimated historical relationships between ACES data and Census Bureau Manufacturers' Shipments, Inventories, and Orders (M3) survey are applied to 2023 and 2024 trends obtained from the M3 survey to derive estimates of growth in private equipment for the NHEA. To estimate private equipment for 1998-2022, total expenditures for new equipment for NAICS 62 obtained from the ACES data are adjusted to reflect only expenditures within the scope of the NHEA. Specifically, the following expenditures for new equipment are subtracted from the total: (1) NAICS 624 (except 6244) (Social Assistance (except Child Day Care Services), (2) NAICS 6244 (Child Day Care Services), and (3) a portion of NAICS 623 estimated to reflect NAICS 623312 (Assisted Living Facilities for the Elderly) and NAICS 623990 (Other Residential Care Facilities).

For public equipment, the estimates for 1960-2023 are equal to government gross investment data (Federal and State & Local) for Equipment and Software for the health function from data provided by BEA. Public equipment estimates for 2024 are derived using trends for gross investment in Equipment and Software (Nondefense Federal and State & Local) obtained from BEA.

# NHEA by Type of Sponsor

## Introduction

The structure of NHEA provides estimates of both the sources of payment and the sponsors of health care. The sources of payment include the payers and programs that directly pay for health care and are usually third-party insurers.

Health spending by sponsor, or source of financing, provides estimates of spending by the businesses, households, other private funds and governments that are responsible for financing, or sponsoring, health care payments. The difference between payers and sponsors can be illustrated using private health insurance as an example. Although private health insurers pay claims on behalf of individuals covered by health insurance policies, premiums are often financed, or sponsored, by a combination of employers (private businesses, federal government, and state/local governments), households (as employees or purchased directly by individuals in the form of individually purchased policies), and government (such as the Medicare retiree drug subsidy payments to private and state and local employers and the Marketplace tax credits and subsidies).

Exhibit 5 provides a crosswalk of national health expenditures by payers and by sponsors.

**Exhibit 5. Crosswalk of National Health Expenditure Payers to Business, Household, and Government Sponsors**

| Sponsor / Payers | Business, Household, and Other Private | | | Government | |
|---|---|---|---|---|---|
| | Private Business | Household | Other Private | Federal | State and Local |
| Out-of-pocket | | X | | | |
| Private Health Insurance | X | X | | X | X |
| Other Private Sponsors[1] | | | X | | |
| Medicare | X | X | | X | X |
| Medicaid | | | | X | X |
| Other Payers[2] | X | | | X | X |

[1] Includes Philanthropy, Private Research, Private Structures and Equipment, and Other Non-Patient revenues.

[2] Includes Department of Defense, Department of Veterans Affairs, Children's Health Insurance Program, Worksite Health Care, Indian Health Service, workers' compensation, general assistance, Maternal and Child Health, vocational rehabilitation, Substance Abuse and Mental Health Services Administration, school health, public health activities, federal and state and local research, and structures and equipment and other federal and state and local programs.

## NHEA Expenditure Crosswalk to the Sponsor

### Out-of-Pocket

Out-of-pocket expenditures are defined as direct spending by households for all health care goods and services. This includes the amount paid out-of-pocket for services not covered by insurance; the amount of copayment, coinsurance, and deductibles required by private health insurance and by public programs such as Medicare and Medicaid (and not paid by some other third party); and payments from health and flexible savings accounts. Cost-sharing subsidies for eligible individuals in the Marketplace are excluded from out-of-pocket spending.

**Private Health Insurance**

Private health insurance expenditures in the sponsor analysis are disaggregated into employer-sponsored insurance and directly purchased insurance. These expenditures are then further allocated into the sponsors that finance these expenditures, which include households, private businesses and governments.

**Employer-sponsored insurance: Employer and Employee share**

Employer-sponsored insurance (ESI) includes premiums paid by employers and/or employees for health insurance plans offered by the employer, whether or not the employer actually contributes to the health plan. Union health insurance plans are also considered to be employer-sponsored plans. The primary data source for estimating ESI is the Medical Expenditure Panel Survey-Insurance Component (MEPS-IC).[69] The MEPS-IC contains estimates of employer- and employee-sponsored premiums for active employees, continuation of health coverage (COBRA),[82] and retirees of non-federal sponsors (private businesses and state and local governments). The federal estimates of ESI premiums paid by federal employers, employees and retirees are provided by the U.S. Office of Personnel Management.[83]

*Employer share*

The employer share of premiums paid by private businesses and by state and local governments is based on MEPS-IC data, while the employer share of premiums paid for by the federal government is based on data provided by OPM.[83] Because MEPS-IC data for state and local governments are lagged by one year, estimates for the current year are based on Employer Cost for Employee Compensation (ECEC) data from the Bureau of Labor Statistics' (BLS) National Compensation Survey.[84] For years prior to 2003 and for 2007, the employer share of premiums are based on annual growth rates from ECEC data.

*Employee share*

Employer-sponsored private health insurance (PHI) premiums paid by active employees, retirees, and former employees who are covered by COBRA are captured in the sponsor estimates as household spending. The estimates of employee contributions for those with ESI through a private business or state and local government are produced using MEPS-IC data; employee contributions for ESI through the federal government are based on data from OPM. State and local government employee estimates for the most current year are based on ECEC data, as MEPS-IC data is lagged by one year. For years prior to 2003 and for 2007, PHI premiums paid by retirees are based on the annual growth rate from the BLS' Consumer Expenditure Survey[34] and the ECEC data. For 2007, premiums paid by private and state and local employees are estimated using MEPS-IC data projected using the 2009 Kaiser Family Foundation/Health Research and Educational Trust Survey of Employer-Sponsored Health Benefits[18] combined with the historical relationship between the employee/retiree paid and the employer-paid share of ESI.

**Direct purchase insurance**

Direct purchase insurance includes premiums paid by individuals for policies that are not available through an employer or a union-based plan. This includes Medigap policies, Marketplace plans, and other directly purchased health insurance. The main data sources used in estimating direct purchase insurance premiums include the Bureau of Labor Statistics' Consumer Expenditure Survey,[34] the National Association of Insurance Commissioners (NAIC),[85] and CMS data.[43, 86] From a sponsor perspective, all direct purchase insurance is considered household spending with the exceptions of a) the continuation of health coverage (COBRA) subsidies[87] paid by the federal government which are based on data from the Internal Revenue Service (IRS), b) health insurance premium tax credits and cost-sharing subsidies from Marketplace plans, and c) federal and state & local payments for the Basic Health Program.

**Medicare**

The Medicare program is financed by several different mechanisms. The Hospital Insurance (HI) Trust Fund is primarily financed through Federal Insurance Contributions Act (FICA) taxes on covered payroll, plus interest income, taxation of benefits, voluntary premiums and other revenues. The Supplementary Medical

Insurance (SMI) Trust Fund is financed through general revenues, premiums (Part B, Part D, and Medicare premium buy-in programs by Medicaid), state phase-down payments, and interest income.

In the sponsor analysis, an increase in the assets of the Medicare HI Trust Fund allows for immediate reductions in current federal general funding obligations for Medicare. These surpluses are recorded as special interest-bearing treasury obligations and are combined with all other general revenues. The surplus is reported as an offset to the difference between program outlays and the dedicated financing sources of Medicare since, in essence, the surplus decreases the amount of general revenues necessary to pay for health care.

Medicare spending is disaggregated to reflect these different financing sources in the sponsor analysis. The HI payroll taxes paid by employers (private, federal, and state and local employers), along with one-half of the self-employed payroll taxes, are assigned to businesses and federal and state/local governments (using unpublished data from the Social Security Administration). The employees' share of HI payroll taxes, together with the other half of the self-employed payroll taxes, HI taxation of benefits, and SMI premiums, are considered household spending.

Estimates for the Medicare premium buy-in program (payments made by state Medicaid programs for Medicare Part A and Part B premiums for eligible individuals) and receipts from states for phased-down Medicaid contributions for Part D are allocated to state and local governments. Additionally, the federal Medicaid program pays for Medicare premiums as part of the buy-in program. The remaining Medicare expenditures are roughly equal to trust fund interest income and federal general revenue contributions to Medicare and are included in the federal government category.

#### Medicaid

Estimates of Medicaid spending are reflected in both federal and state spending from a sponsor perspective.

#### Other Health Insurance and Third-Party Payers and Programs

In the sponsor estimates, federal programs and payments including Department of Defense, Department of Veterans Affairs, Indian Health Service, Substance Abuse and Mental Health Services Administration, other federal programs, federal public health activities, the federal share of Maternal and Child Health (MCH), vocational rehabilitation, Children's Health Insurance Program (CHIP), workers' compensation, and federal investment in research, and structures and equipment are included as federal spending.

General assistance, school health, state public health activities, other state and local programs, the state shares of MCH and CHIP, vocational rehabilitation, and state and local investment in research, and structures and equipment are included as state and local spending in the sponsor estimates.

Worksite health care, state and local workers' compensation, and temporary disability insurance are classified into the private business sponsor category.[88] Private business investment in research, structures, and equipment are classified in other private sponsors.

### Business, Household, Other Private Revenues, and Government

The crosswalk between the NHEA payers and programs and the underlying sponsors provides the information needed to identify spending by businesses, households, other private revenues, and governments. Below are the definitions for each of these sponsor categories.

#### Private Business

Private business health spending represents health care expenditures by employers on behalf of their employees. These primarily include employer's contributions for employer-sponsored insurance premiums and Medicare Hospital Insurance (HI) trust fund payroll taxes (including half of total self-employed payroll

taxes). A portion of Medicare payroll taxes is included in the private business sector because they represent dedicated taxes that are earmarked for health care spending. In addition, private business health spending includes payments for state workers' compensation, temporary disability insurance, and worksite health care. Excluded from private business spending are Medicare retiree drug subsidy payments to private employer plans beginning in 2010, small business tax credits beginning in 2010, and payments for the Early Retirement Reinsurance Program for the period 2010-2011.

**Households**

Household health spending represents expenditures by individuals to provide or purchase health care for themselves or family members. Household spending primarily includes the employee's share of employer-sponsored insurance premiums, premiums for directly purchased insurance, and Medicare Hospital Insurance (HI) trust fund payroll taxes (including half of the total self-employed payroll taxes, and taxes paid on Social Security benefits). The household portion of payroll taxes is included with the household sector because they are dedicated taxes earmarked for health care spending. Premiums paid to the Medicare HI and Supplementary Medical Insurance (SMI) Trust Funds, the Pre-existing Conditions Insurance Plans, and the Basic Health Program are also included with households. Additionally, the medical portion of property and casualty insurance (automobile, homeowners, multi-peril, or other liability insurance) is included with households.

Out-of-pocket spending for copayments, deductibles, and services not covered by health insurance are also allocated to the household. Excluded from household spending are health insurance premium tax credits and cost-sharing subsidies from Marketplace plans, continuation of health coverage (COBRA) subsidies, federal and state & local payments for the Basic Health Program, and Medicaid buy-ins for the Medicare premiums of people eligible for both Medicaid and Medicare (dual eligibles).

**Other Private Sponsors**

Other private sponsors include all other private sponsors of health care other than private businesses and households such as privately funded research, privately funded structures and equipment, philanthropic support, and non-patient revenue. Philanthropic support may be direct from individuals or may be obtained through philanthropic fund-raising organizations such as the United Way. Support may also be obtained from foundations or corporations. Philanthropic revenues may be spent directly for patient care or may be held in an endowment fund to produce income to cover current expenses. For institutions such as hospitals, nursing homes and home health agencies, other private funds also include income from the operation of gift shops, cafeterias, parking lots, educational programs, and investment income. Also included in this category are private investment in research, structures, and equipment.

**Federal Government**

The federal government finances many federal health care programs from general revenues, most notably Medicare spending not paid for by other sponsors or dedicated payroll taxes. Also, as an employer, the federal government pays employer-sponsored insurance premiums and Medicare Hospital Insurance (HI) Trust Fund payroll taxes for federal employees. The federal government sponsor estimate also includes the federal share of the Medicaid program, the federal portion of Medicare premium buy-in programs by Medicaid, Medicare retiree drug subsidy payments beginning in 2006, payments for Department of Defense, Department of Veterans Affairs, Indian Health Service, Substance Abuse and Mental Health Services Administration, other federal programs (including COVID-19 response funding from the Provider Relief Fund and the Paycheck Protection Program), public health activities, the federal share of Maternal and Child Health, vocational rehabilitation, Children's Health Insurance Program, workers' compensation, continuation of health coverage (COBRA) subsidy payments, small business tax credits, Early Retirement Reinsurance Program payments, Basic Health Program payments, health insurance premium tax credits and cost-sharing subsidies from Marketplace plans, and federal investment in research, structures and equipment. Excluded from federal government spending are Pre-existing Conditions Insurance Plan

premiums, Medicare Supplementary Medical Insurance (SMI) premiums, and Part D state phase-down payments to Medicare.

**State and Local Government**

State and local governments finance health care programs and also pay for health insurance coverage for state and local government employees. This estimate includes the employer contribution for employer-sponsored insurance premiums and Medicare Hospital Insurance (HI) Trust Fund payroll taxes for state employees. The state and local government's portion of payroll taxes are included with the state and local government sector because they are dedicated taxes earmarked for health care spending. Also included is the state share of the Medicaid program, the state portion of Medicare premium buy-in programs by Medicaid, receipts from states for phased-down Medicaid contributions for Medicare Part D, Basic Health Program payments, other state and local programs such as general assistance, school health, Maternal and Child Health, vocational rehabilitation, Children's Health Insurance Program, public health activities, other state and local programs, and state and local investment in research, structures and equipment. Excluded from state and local government spending are Early Retirement Reinsurance Program payments and Medicare retiree drug subsidy payments to state and local government employer plans.

## Health Insurance Enrollment and the Uninsured

The enrollment estimates in the NHEA cover total private health insurance (PHI) (including direct and employer-sponsored plans), Medicare, Medicaid, Children's Health Insurance Program (CHIP), and other public programs, as well as an estimate of the uninsured. These estimates of enrollment are generally for a specific point in time (Medicaid is a person-year estimate, which is essentially a proxy for a point-in-time estimate).

### Total Private Health Insurance Enrollment

Total private health insurance (PHI) enrollment consists of enrollment in employer-sponsored insurance and direct purchase plans (group and non-group) including Marketplace and Medigap policies. The enrollment estimates are not mutually exclusive and cannot be summed within PHI as individuals can be enrolled in multiple types of plans. The 1960-1986 estimates were based on data from the National Center for Health Statistics' National Health Interview Survey,[89] data from the Health Insurance Association of America,[90] and analysis performed by Marjorie Carroll and Ross H. Arnett, III.[91] For 1987-2009, total PHI estimates were developed from the State Health Access Data Assistance Center's (SHADAC) enhanced Current Population Survey (CPS)[92] coverage estimates adjusted by the Office of the Actuary to reflect the overcount of individually purchased health insurance enrollment in the CPS. Enrollment for 2010 forward was estimated using the sum of the individual and employer insurance estimates adjusted to account for the overlap of health insurance coverage.

#### Employer-Sponsored Insurance

Employer-sponsored insurance (ESI) is purchased through an employer, union, or by a self-employed individual. For 1987-1995, ESI enrollment was estimated using the growth in the number of policies for employer-purchased health insurance from the Bureau of Labor Statistics' Consumer Expenditure Survey[34] applied to the enhanced CPS levels in 1996. Enrollment for 1996-2009 was estimated using the levels from the State Health Access Data Assistance Center's (SHADAC) enhanced Current Population Survey (CPS).[92] Enrollment for 2010 through 2013 was estimated using data from the National Center for Health Statistics' National Health Interview Survey.[89] Enrollment for 2014-forward was estimated using data from CPS, with the exception of 2019, which used data from the American Community Survey.

### Direct Purchase Insurance

**Medigap:** Medigap plans are standardized health insurance plans that are sold by private insurance companies to Medicare beneficiaries to fill the "gaps" in Medicare coverage. These plans are available to people aged 65 or older and to some individuals under age 65 with certain disabilities, and people of all ages with end-stage renal disease (ESRD). August point-in-time levels from the Coordination of Benefits (COB) file were used to estimate Medigap enrollment for the period 2014-2024. Estimates for 2002-2013 were developed using the average relationship between COB and National Association of Insurance Commissioners data in the years 2013-2017. Estimates for years prior to 2002 were based primarily on trends from the Centers for Medicare & Medicaid Services' (CMS) Medicare Current Beneficiary Survey (MCBS).[33]

**Marketplace:** Under the Affordable Care Act of 2010 (ACA), health insurance coverage was expanded through private insurers allowing individuals to purchase from both federal and state-run health insurance Marketplaces. Marketplace average monthly enrollment was estimated using program data from CMS.

**Other Direct Purchase**: This category includes insurance purchased on the private market that is not associated with an employer or a Medigap or Marketplace plan. Examples of direct purchase insurance include group plans purchased through the American Association of Retired Persons (AARP) or other associations, non-group plans (both ACA-compliant and ACA non-compliant such as grandfather and grandmother plans), Short-Term Limited Duration (STLD) Health plans, and the Basic Health Program (BHP). Estimates of enrollment for 2014 – 2024 were derived from the Medical Loss Ratio (MLR) Data and

System Resources public use file (CMS, Consumer Information and Insurance Oversight). STLD health plan enrollment estimates were derived using data from the National Association of Insurance Commissioners, and BHP enrollment estimates were derived using data from states with BHP plans.[93] For 1996-2013, enrollment was estimated using the levels from the Medical Expenditure Panel Survey-Household Component (MEPS-HC),[41] while 1987-1995 was estimated using the growth in the number of covered lives for individually purchased health insurance from the Consumer Expenditure Survey[34] applied to the MEPS-HC level in 1995.

### Medicare

For 2016 forward, Medicare enrollment is from the Centers for Medicare & Medicaid Services' Chronic Condition Data Warehouse (CCW), a database with 100% of Medicare enrollment derived from the Common Medicare Environment database. Prior to 2016, the source for Medicare enrollment was the Denominator File, which used data from the Medicare Enrollment Database. Medicare enrollment from the CCW includes counts of all Medicare beneficiaries who were enrolled on or after January 1 of a calendar year. The estimates of Medicare Part A and/or B enrollment use a person-year methodology, which sums the number of months each beneficiary is enrolled during the year and divides by 12. Additionally, an adjustment is made to create U.S. only enrollment figures by removing enrollment for U.S. territories.

### Medicaid

Medicaid enrollment estimates for 1966-1974 were developed using data from the Institute for Medicaid Management, while estimates for 1975-1998 were developed using the Medicaid Statistical Reports (HCFA-2082). The enrollment estimates for Medicaid from 1999 to 2004 were from the Medicaid Statistical Information System (MSIS); the 2005-2013 estimates were developed using Medicaid Analytic eXtract (MAX) data;[46] and 2014 through 2024 estimates were estimated by the Office of the Actuary using the form CMS-64.[94] Medicaid new adult group enrollment estimates from 2014-2024 were also developed using the form CMS-64.

### Children's Health Insurance Program

CHIP enrollment estimates are obtained through the Statistical Enrollment Data System using forms CMS-21E, CMS-64.21E, and CMS-64.EC.

### Other Public

Other public programs include health insurance coverage provided by the Department of Defense (DOD) and the Department of Veterans Affairs (VA). Enrollment for other public programs for 1987-2011 was estimated using the levels from the State Health Access Data Assistance Center's (SHADAC) enhanced Current Population Survey (CPS),[92] and for 2012 through 2016 estimates were extrapolated using the CPS. From 2017-2021 and 2024, enrollment is estimated based on data from the DOD[95] and the VA.[96] The 2022 and 2023 estimates were based on the trend from the CPS for those years.

### Uninsured

Persons not covered by health insurance (including individuals using the Indian Health Service in order to be consistent with CPS definitions) are considered uninsured. The number of uninsured for 1987-2009 was estimated using the levels from the State Health Access Data Assistance Center's (SHADAC) enhanced Current Population Survey (CPS)[92] adjusted for an estimate of the Medicaid undercount, and for 2010 to 2018 estimates were extrapolated using growth from National Health Interview Survey (NHIS).[89] The 2019 estimate was extrapolated using 2019/2018 trend from the American Community Survey. The 2020 estimate was extrapolated using the 2020/2018 trend from the CPS. The 2021 estimate was based on the population share of the uninsured from the NHIS. The 2022 estimate was based on the 2022/2021 trend from the American Community Survey. The 2023 and 2024 estimates were based on NHIS share of the uninsured multiplied by the NHE population.

## Deflating National Health Expenditures

Increased health care spending reflects increases in technological developments, changes in the demographic composition of the population, changes in the intensity and quantity of health care services delivered per person, and price inflation for medical goods and services. Deflating health care spending separates the effects of price growth from growth attributable to all other factors. The dollar value of these estimates of real health care expenditures is determined by the index chosen to remove price growth from spending.

One approach to deflating health spending is to remove the effects of economy-wide inflation alone. Prior to the 2011 NHEA, this was the method used to deflate health spending for the NHEA. The most appropriate deflator for economy-wide prices for this purpose is the price index for the gross domestic product (GDP), as measured by the Bureau of Economic Analysis (BEA). The GDP deflator is the most comprehensive measure of price inflation for the economy as a whole. This measure eliminates economy-wide inflation, a cause of growth over which the health sector has little control.

An alternative approach to removing the effects of price growth from health spending is to deflate health care expenditures by a measure of medical specific price inflation. For personal health care (PHC) spending, this involves directly deflating expenditures by price indexes associated with the services and goods provided; for non-PHC spending this involves deflating by composite indexes matching the components of spending for each category. The resulting measure of "real" growth associated with this approach reflects growth in non-price factors, which can result from technological developments, changes in the demographic composition of the population (by age, sex, and proximity to death), or any changes in the intensity and quantity of health care services delivered per person. Also, this residual includes the net effect of any error in the measurement of medical prices or medical expenditures.

The goal of deflating spending at the national health expenditure (NHE) level is to isolate price changes so that "real NHE" spending can be determined. Thus, it is critical that the measure used to deflate spending at the NHE level accurately reflects price changes only and does not capture any of the biases that can occur when aggregating individual indexes. The chain-weight method used in the NHE deflator attempts to control for any aggregation bias by using a Fisher Ideal formulation. The Fisher Ideal index formulation reflects the geometric mean of a Laspeyres index, which uses a prior-period quantity weights, and a Paasche index, which uses the current period quantity weights. Chain-weighted inflation measures would give a lower inflation rate than standard inflation rates if substitutions were made over time to purchase less of the goods that were experiencing faster price growth.

The PHC deflator is calculated as a chain-weighted price index for the various goods and services that account for PHC spending in the NHE. Exhibit 6 provides the detailed price series that are used for each category of spending.[97] Unlike the 2010 method, which used an implicit deflator approach, the current PHC deflator relies on a chain-weighted approach.

In order to estimate a non-PHC deflator, a chain-weighted price index of the subcomponents of non-PHC is estimated. This index weights together the detailed price series for each non-PHC component, at the maximum level of detail available. Exhibit 7 provides the major non-PHC expenditure categories and their respective deflators.

The price indexes developed by the Office of the Actuary are a more appropriate measure of the medical price inflation associated with expenditures reported in the NHEA than two other available indexes—the Bureau of Labor Statistics' (BLS) Medical Care Consumer Price Index (CPI-U) for all urban consumers and the BEA medical care component of the personal consumption expenditure fixed-weight price index.

For example, the medical care component of the CPI is weighted based on consumer out-of-pocket expenditures, Medicare Part B payments, and private health insurance payments to providers for medical benefits.[98] Without consideration of all types of payers and programs, certain health care services are assigned weights that under- or over-represent their shares if all payers and programs expenditures were

considered. Additionally, the medical care component of the PCE price index is not an optimal index to use since it excludes spending on care provided by government facilities.

The BLS Producer Price Index (PPI) is a third measure of price inflation. The PPI measures transaction prices or net prices received by producers for their output. Receipts include those from both public and private sources. However, most PPIs for the health service industry begin in 1994 or later and therefore lack a sufficient time series to span the entire history of the NHEA.

### *Deflators Used in the Personal Health Care Price Index*

Exhibit 6 lists the price series assigned to each component of PHC expenditures. All data used are as published except for the following: the CPI for Prescription Drugs for 2003, 2006, 2012-2013, and 2015-2023, and the PPI for Office of Physicians for 2021 (see footnote in Exhibit 6).

**Exhibit 6: Price Proxies for the Personal Health Care Expenditure Price Index**

| Industry/Commodity or Service | Price proxy |
|---|---|
| **Personal Health Care** | |
| **Hospital Care** | PPI, hospitals |
| **Physician and Clinical Services** | Composite Index: PPI, offices of physicians and PPI, medical and diagnostic laboratories |
| **Other Professional Services** | CPI, services by other medical professionals |
| **Dental Services** | CPI, dental services |
| **Other Health, Residential, and Personal Care** | Composite Index:<br>• CPI physician services (used for other health care)<br>• CPI care of invalids and elderly at home (used for home and community-based waivers),<br>• CPI All Items (used for ambulance services)<br>• PPI residential developmental disability homes (used for residential facilities) |
| **Home Health Care** | PPI, home health care services |
| **Nursing Care Facilities and Continuing Care Retirement Communities** | PPI, nursing care facilities |
| **Prescription Drugs** | CPI, prescription drugs |
| **Other Non-durable Medical Products** | CPI, non-prescription drugs |
| **Durable Medical Equipment** | Composite Index: CPI, eyeglasses and eye care and CPI, medical equipment and supplies |

Notes: Data for the PPI and CPI are available from the U.S. Department of Labor, BLS, http://www.bls.gov. All indexes are scaled to 100.0 in 2017. The underlying PPI and CPI indexes used to construct the chain-weighted National Health Expenditure deflator are at times adjusted for unique factors where the trends in the index do not match the definition/scope or trends in the expenditure categories that are being deflated. Examples include adjustments that account for the movement of retail prescription drugs to the over-the-counter market, prescription drug manufacturer rebates, and differences in the underlying prices in public programs (such as Medicare and Medicaid).

## *Deflators Used in the Non-Personal Health Care Price Index*

Exhibit 7 lists the price series assigned to each component of non-PHC expenditures. Details for each of the price proxies for each non-PHC category are provided in the text following Exhibit 7.

**Exhibit 7: Price Proxies for the Non-Personal Health Care Expenditure Price Index**

| Industry/Commodity or Service | Price proxy |
|---|---|
| **Non-Personal Health Care** | |
| **Government Administration** | Composite index of wages, benefits, professional fees, claims/financial intermediary services, office rent, and other expenses for six government programs |
| **Non-Medical Insurance Expenditures** | Composite index of compensation, capital, taxes and fees, reserves/gains/losses, and other expenses for five classes of insurance |
| **Government Public Health Activities** | Composite index of federal, state, and local government consumption |
| **Research** | National Institutes of Health Biomedical Research and Development Price Index[99] |
| **Structures & Equipment** | Composite Index of BEA Price indexes for private fixed investment in structures by type and private fixed investment in equipment and software by type |

Note: All indexes are scaled to 100.0 in 2017.

Unlike the PHC deflator where typically one price series is used to represent the pure price change associated with a constant product, the non-PHC categories are typically deflated by an input price index that represents the price increases associated with the expenses underlying the production of these categories (the notable exceptions are non-commercial research and structures and equipment).[100]

Because of the unique nature of the non-PHC categories, published price series are not typically available for these categories, or those that are available may not adequately capture the concepts appropriate for the given non-PHC category. Instead, alternative data sources are used to decompose these expenses into the key underlying inputs, such as compensation or capital costs, and then publicly available price series are used to deflate those input expenses. A brief description of each price deflator follows.

### Government Administration

Government administrative costs are deflated using a composite input price index that chain-weight together price indexes for wages and salaries, benefits, professional fees, claims processing services, office rent and other expenses. The input weights reflect six sub-categories of government administrative costs: Medicare, Department of Defense, Department of Veterans Affairs, Medicaid, Children's Health Insurance Program (CHIP), and other third-party payers. The weights are determined using data from the Medicare Trustees Report, Medicaid administrative data, and congressional justifications. The price series for each of the categories represent proxies for price change, such as federal civilian pay, employment cost indexes for state and local government workers, and other relevant occupations and appropriate PPIs and CPIs.

### Non-Medical Insurance Expenditures

For non-medical insurance expenditures, the nominal spending level is deflated using a chain-weighted composite index of input costs and price proxies designed to directly measure the price growth associated with the difference between health insurance expenditures and benefits incurred. This difference includes cost growth for administrative services, taxes and fees, changes to reserves, and net underwriting gains or losses. There are five types of private health insurance for which non-medical insurance expenditures are

estimated. The first type groups together: individual direct purchase or non-group insurance, the majority of worker's compensation insurance, the health portion of property and casualty insurance, and pre-existing conditions insurance plans from 2010-2014. The second type is fully insured group/commercial insurance. The third type is self-insured ESI. The fourth type is Medicare Advantage and stand-alone Medicare Part D plans, and the fifth type is Medicaid and CHIP managed care plans.

For each type of insurance, estimates are developed for five general components of non-medical insurance expenditures that sum to the total for this category. These components include: compensation of the employees that are administering the insurance, capital costs, taxes and fees, other costs (such as rent, advertising, certain commissions, etc.), and, in some cases, changes to reserves and underwriting gains or losses. A blended index of price proxies, typically BLS Employment Cost Index's (ECIs), BLS PPIs, or deflators produced as part of the BEA's National Income and Product Accounts (NIPA), are weighted together by the respective input costs for three of these general components. All changes in taxes and/or changes to reserves or underwriting gains or losses are treated as price changes. These various price changes are then combined to create a composite non-medical insurance expenditures input price deflator.

### Government Public Health Activities

Public health spending in the NHEA is deflated using a composite index that chain-weights together price indexes for state and local and federal public health, with state and local expenditures accounting for the majority of the index. State and local public health expenditures are deflated using the price index for gross state and local government consumption expenditure for health from the NIPA produced by the BEA. Federal public health expenditures are deflated using an input cost index that weight together the input costs of the Health Resources and Services Administration, the Food and Drug Administration, and the Centers for Disease Control and appropriate price proxies from the BLS. Together these three organizations account for the majority of federal public health spending.

### Structures & Equipment

Investment in structures and equipment is deflated using a composite index that chain-weights together detailed price indexes associated with private fixed investment in structures and equipment, by detailed asset category. The detailed nominal investment levels by asset category serve as the weights to aggregate up to the composite chain-weighted price index for structures and equipment. These detailed asset distributions are obtained primarily using data from the BEA's Capital Flow Table and Fixed Asset Accounts. Five categories of detailed investment in structures are derived using this methodology: hospital and institutional, office buildings, industrial, electric light and power, and other buildings. Twenty-two categories of detailed investment in equipment are derived as well. Additionally, appropriate price indexes for investment in structures and equipment are selected for each of these categories. The price indexes are from BEA's Table 5.4.4. Price Indexes for Private Fixed Investment in Structures by Type; Table 5.5.4. Price Indexes for Private Fixed Investment in Equipment by Type; and Table 5.6.4 Price Indexes for Private Fixed Investments in Intellectual Property Products by Type.

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