

National Health  
Expenditures Accounts:  
Methodology Paper, 2012  
Definitions, Sources, and Methods

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## Introduction

### *U.S. National Health Expenditure Accounts*

Since 1964, the U.S. Department of Health and Human Services<sup>1</sup> (HHS) has published an annual series of data presenting total national health expenditures (NHEs). These estimates, termed 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. and 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 National Income and Product Accounts (NIPA), but bring a more complete picture of the health care sector of the nation's economy together in one set of statistics.<sup>2</sup> 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 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.

Exhibit 1 shows the accounting matrix used in the U.S. to record national health care spending. The most recent comprehensive revision to the NHEA was completed in 2009 vintage of the NHEA. Please visit the following website for more information regarding these changes: <http://www.cms.gov/NationalHealthExpendData/Downloads/benchmark2009.pdf>.

In 2012, \$2.8 trillion was spent on health care services and products, 61 percent of which purchased hospital care, physician and clinical services, and retail prescription drugs. Private Health Insurance (PHI) paid for 33 percent; out-of-pocket (OOP) sources for 12 percent; and other third party payers and programs for 8 percent. The two largest government health care programs, Medicare and Medicaid, purchased \$993.7 billion in health care goods and services in 2012, accounting for 36 percent of total health care spending. Finally, the Department of Defense (DOD) and the Department of Veterans Affairs (VA) accounted for a combined 4 percent. (Martin et al. 2014).

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<sup>1</sup> The Cabinet-level Department of Health, Education and Welfare was created under President Eisenhower on April 11, 1953. In 1979, the Department of Education Organization Act was signed into law, providing for a separate Department of Education. HEW became the Department of Health and Human Services on May 4, 1980. <http://www.hhs.gov/about/hhshist.html>

<sup>2</sup> For a more complete discussion of a reconciliation between the (NHEA) and the (NIPA) please visit: [http://www.bea.gov/scb/pdf/2010/09%20September/0910\\_healthcare.pdf](http://www.bea.gov/scb/pdf/2010/09%20September/0910_healthcare.pdf)

# National Health Expenditure Accounts Methodology Paper, 2012

**Exhibit 1: National Health Expenditures by Type of Expenditure and Program: Calendar Year 2012**

Levels in Millions	National Health Expenditures																	
	Health Consumption Expenditures															Investment		
	Personal Health Care										Administration and Net Cost of Private Health Insurance					Structures & Equipment		
	Professional Services					Retail Outlet Sales of Medical Products					Government		Administration			Research		
	Physician, Clinics and Other Professionals					Other Medical Products					Administration		Administration			Equipment		
Total National Health Expenditures	Hospital Care	Physician and Clinical Services	Other Professional Services	Dental Services	Other Health, Residential, and Personal Care	Home Health Care	Nursing Care Facilities and Continuing Retirement Communities	Prescription Drugs	Durable Medical Equipment	Other Non-durable Medical Products	State	Federal	Net Cost of Private Health Insurance	Public Health Activities	Research	Structures	Equipment	
Total National Health Expenditures	\$2,793,394	\$882,269	\$564,996	\$76,380	\$110,937	\$138,237	\$77,781	\$151,548	\$263,287	\$41,255	\$53,741	\$8,896	\$24,746	\$164,294	\$74,991	\$48,136	\$50,315	\$61,584
Out of pocket	328,156	29,761	54,855	19,371	46,776	7,544	6,032	43,279	46,834	23,069	50,635	—	—	—	—	—	—	—
Health Insurance	2,014,409	770,087	455,946	50,122	63,623	88,958	69,312	97,160	214,002	17,594	3,105	8,690	23,175	152,635	—	—	—	—
Private Health Insurance	916,959	320,889	258,345	28,237	53,370	6,855	5,582	12,033	117,027	4,688	—	—	—	109,934	—	—	—	—
Medicare	572,484	239,785	128,081	16,944	368	5,104	33,776	34,421	68,241	8,197	3,105	—	8,568	25,893	—	—	—	—
Medicaid (Title XIX)	421,199	156,375	45,624	4,719	7,290	72,858	28,940	46,324	19,620	4,591	—	8,396	10,673	15,789	—	—	—	—
Federal	237,854	88,707	27,099	2,461	3,919	41,285	18,512	26,431	10,692	2,614	—	—	10,673	8,461	—	—	—	—
State and Local	183,345	67,668	18,525	2,258	3,371	31,573	13,427	19,893	8,928	1,977	—	8,396	—	7,328	—	—	—	—
Total CHIP (Title XIX and Title XXI)	12,624	3,425	3,166	223	1,305	906	25	7	1,459	118	—	295	675	1,020	—	—	—	—
Federal	8,793	2,355	2,193	156	910	645	18	5	1,045	86	—	—	675	704	—	—	—	—
State and Local	3,832	1,070	973	67	394	261	7	2	414	32	—	295	—	316	—	—	—	—
Department of Defense	40,522	16,948	14,163	—	1,215	—	—	—	4,969	—	—	—	3,227	—	—	—	—	—
Department of Veterans' Affairs	50,620	32,666	6,567	—	75	3,235	989	4,374	2,684	—	—	—	31	—	—	—	—	—
Other Third Party Payers and Programs	215,803	82,421	54,195	6,887	537	41,735	2,437	11,109	2,452	593	1	205	1,571	11,659	—	—	—	—
Worksite Health Care	5,115	—	—	—	—	5,115	—	—	—	—	—	—	—	—	—	—	—	—
Other Private Revenues	103,778	44,013	33,587	4,704	108	12,885	1,019	7,461	—	—	—	—	—	—	—	—	—	—
Indian Health Services	3,813	1,982	1,060	—	212	412	—	—	29	10	—	—	109	—	—	—	—	—
Workers' Compensation	42,025	13,499	13,939	1,513	—	—	—	—	882	414	—	52	106	11,619	—	—	—	—
General Assistance	6,423	2,738	808	34	187	468	270	523	1,369	25	0	—	—	—	—	—	—	—
Maternal/Child Health	2,351	203	133	596	24	1,158	—	—	55	39	—	140	3	—	—	—	—	—
Federal	566	53	62	194	10	200	—	—	29	14	—	—	3	—	—	—	—	—
State and Local	1,785	150	71	403	13	958	—	—	25	25	—	140	—	—	—	—	—	—
Vocational Rehabilitation	531	131	251	—	—	—	—	—	—	89	—	13	46	—	—	—	—	—
Federal	412	102	195	—	—	—	—	—	—	69	—	—	46	—	—	—	—	—
State and Local	120	30	56	—	—	—	—	—	—	20	—	13	—	—	—	—	—	—
Other Federal Programs	10,229	1,727	3,403	31	7	3,652	22	—	112	12	1	—	1,224	40	—	—	—	—
SAMHSA	3,448	143	947	—	—	2,274	—	—	—	—	—	—	83	—	—	—	—	—
Other State and Local Programs	33,692	17,985	66	9	—	11,372	1,127	3,124	6	3	—	—	—	—	—	—	—	—
School Hlth	4,399	—	—	—	—	4,399	—	—	—	—	—	—	—	—	—	—	—	—
Public Health Activity	74,991	—	—	—	—	—	—	—	—	—	—	—	—	—	74,991	—	—	—
Federal	10,844	—	—	—	—	—	—	—	—	—	—	—	—	—	10,844	—	—	—
State and Local	64,147	—	—	—	—	—	—	—	—	—	—	—	—	—	64,147	—	—	—
Investment	160,035	—	—	—	—	—	—	—	—	—	—	—	—	—	—	48,136	50,315	61,584
Research	48,136	—	—	—	—	—	—	—	—	—	—	—	—	—	—	48,136	—	—
Private	4,512	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4,512	—	—
Federal	37,143	—	—	—	—	—	—	—	—	—	—	—	—	—	—	37,143	—	—
State and Local	6,482	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6,482	—	—
Structures & Equipment	111,899	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	50,315	61,584
Private	85,408	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	41,046	44,362
Federal	11,165	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2,507	8,658
State and Local	15,326	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6,762	8,564

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

### ***National Health Expenditure Accounts and the Health Economy***

The NHEA represent the economic activity within the health sector, which is currently the largest single share of the economy at 17.2 percent of gross domestic product (GDP). The information contained in the NHEA can be used to study numerous topics related to the health care sector including, but not limited to, changes in the amount and cost of health services purchased and the payers or programs that provide or purchase these services, the economic causal factors at work in the health sector, the impact of policy changes, and comparisons at the international level. A cursory overview of these and other topics related the NHEA follows:

- Health care expenditures (HCE) 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.
- HCE by payers and programs. The NHEA allow for the identification and comparison of the share and magnitude of the numerous types of health insurance plans, programs, and other direct and third party payers for various types of health care services and products.
- Changes over time in expenditures by payer and program. The NHEA consistently show changes in the sources of funding for HCE over time. Many of these changes reflect technological, programmatic, and demographic trends.
- HCE for various types of goods and services. The NHEA classify the amount of annual consumption of health care goods and services in various health care establishments in the U.S. The provide data to evaluate medical care consumption at these establishments as well as the mix of medical services and products.
- Changes over time in expenditures for types of goods and services. The NHEA are both mutually exclusive and exhaustive and permit an evaluation of policies intended to curb or redirect growth within the health care sector. An examination of the health care sector as a whole provides for the detection of substitutions over time or countervailing effects in other services in response to changing funding from the different programs and payers.
- Health care reform. The comprehensive and integrated structure of the NHEA creates an ideal tool for evaluating such 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 all other impacts of the Patient Protection and Affordable Care Act of 2010 (ACA).
- HCE by type of sponsor. The NHEA can be aligned to produce estimates of spending by type of sponsor i.e., — businesses, households, governments, and other private revenues. Such estimates, combined with measures of available resources used to pay for health care, can help identify pressure points behind rising health care costs.

#### Selected NHEA Products

- HCE projections. Historical NHEA trends provide a basis for projections of HCE in the future. The projections incorporate assumptions about demographic and economic factors, as well as inflation rates and other economic information. By projecting the likely consequences of recent trends and current law, these models provide key information to legislators, research analysts, academic professionals, and the general public so that they may make informed decisions (Cuckler et al., 2013).
- HCE by age and gender: Health spending by age and gender (Cylus et al., 2011) focuses on the different expenditure, use, access, and financing mechanisms available to various age and gender groups.

- HCE by State: State level health accounts (Cuckler, et al., Medicare & Medicaid Research Review, 2011, Vol. 1, Num. 4) highlight regional differences in expenditures, service mix, and financing sources over time.

In an economic accounting construct it is important to thoroughly define the concepts to be measured and the data sources and methods to be used in creating the estimates. This section presents the blueprint for creating NHEA estimates in the U. S. The definitions used in the NHEA constitute the framework on which estimates of spending for health care are constructed. The framework can be considered a two-dimensional matrix; along one dimension are health care providers or products that constitute the U.S. health care industry and along another dimension are the payers and programs that purchase or provide this health care. The cost of medical care administered outside the U.S. is not included in the NHEA.

### ***What are National Health Expenditures?***

Expenditures in the NHEA represent aggregate health care spending in the U S. The NHEA recognize several types of health care spending within this broad aggregate.

- **Personal Health Care** expenditures (PHC) measures the total amount spent to treat individuals with specific medical conditions.
- **Health Consumption Expenditures** (HCE) represents spending for all medical care rendered during the year, and is the sum of PCH, government public health activity, and government administration and the net cost of health insurance.
- **National Health Expenditures** (NHE) equals HCE plus Investment, or the sum of medical sector purchases of structures and equipment and expenditures for noncommercial medical research.
- **Government public health activity** measures spending by governments to organize and deliver health services and to prevent or control health problems.
- **Government administration and the net cost of health insurance** covers spending for the cost of running various government health care programs, and the difference between premiums earned by insurers and the claims or losses incurred for which insurers become liable (the net cost of PHI).
- Finally, the category **Investment** includes spending for noncommercial biomedical research and expenditures by health care establishments on structures and equipment.

### ***Classification***

In the NHEA, health care spending is classified by the type of establishment that provides the service or good that is consumed. Classification systems provided by the federal government are used to catalog the economic activity of these establishments. Goods are classified according to the product codes used by the U. S. Census Bureau. Services are recognized when they are provided through private sector establishments in the North American Industry Classification System (NAICS) sector 62 Health Care and Social Assistance or through government operations that parallel that classification. The NAICS classifies private sector establishments (for profit and not-for-profit) whose production processes are similar. Each establishment is assigned a code that identifies the specific nature of its operation within the broader industrial classification scheme. For the health care and social assistance sector, the NAICS is structured to capture the continuum of medical and social care. In this fashion, the NAICS structure ranges from medical care facilities providing acute care, such as offices of physicians and hospitals; to non-acute medical care facilities, such as nursing homes, to social assistance facilities providing little or no medical care.

Prior to the introduction of the NAICS, the 1987 version of the Standard Industrial Classification (SIC) system was used for classification purposes in the U. S. Services recognized as health care in the NHEA were those in SIC Major Code 80, the designation for health services. The current NHEA represents a NAICS classification structure that is as consistent as possible with the SIC-based classification structure for health care services in order to maintain continuity of the data series over time. The NHEA realigned data from SIC to NAICS to avoid introducing any changes solely as a result of differences in classification systems.

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### Exhibit 2: North American Industry Classification System for 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
62199	All Other Ambulatory Health Care Services	not included in the NHEA
621991	Blood and Organ Banks	not included in the NHEA
621999	All Other Miscellaneous Ambulatory Health Care Services	not included in the NHEA
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	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	Community Care Facilities for the Elderly	Nursing care facilities and continuing care retirement communities (only 623311)
62331	Community Care Facilities for the Elderly	Nursing care facilities and continuing care retirement communities (only 623311)
623312	Homes for the Elderly	not included in the NHEA
6239	Other Residential Care Facilities	not included in the NHEA

## National Health Expenditures: Definitions, Sources, and Methods

### *Personal Health Care, Goods and Services*

PHC comprises all of the medical goods and services that are rendered to treat or prevent a specific disease or condition in a specific person. These include hospital care; professional services; other health, residential, and personal care; home health care; nursing care facilities and continuing care retirement

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communities; and the retail outlet sales of medical products (Exhibit 3). A summary of the data sources used to estimate each of these goods and services is provided below (Exhibit 4).

### Exhibit 3: Structure of the National Health Expenditure Accounts by goods and services

<b>N H E</b>	<b>H C E</b>	<b>P</b>	-Hospital
		<b>H</b>	-Professional Services
		<b>C</b>	-Physician and clinics -Other professionals -Dental
			-Other health, residential, and personal care
			-Home Health
			-Nursing care facilities and continuing care retirement communities
			-Retail outlet sales of medical products
			-Prescription drugs
			-Other medical products
			-Durable medical equipment
			-Non-durable medical equipment
			<b>PHC plus:</b>
			-Administration and the net cost of private insurance
			-Public health activity
			<b>HCE plus:</b>
			-Investment
			-Research
			-Structures
			-Equipment

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



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## Exhibit 4: Assembly and Data Sources in the NHEA, For Types of Services and Goods

Service/Good:	Total Spending	PHI	OOP	Other Private	Medicare	Medicaid	Other Third Party Payers and Programs
Hospital Care	AHA and EC	Residual, distributed using the AHA and SAS			Claims Data	CMS-64s	Program or Budget Data
Physician and Clinical Services	SAS and EC	Residual, distributed using the SAS					
Other Professional Services	SAS and EC	Residual, distributed using the SAS					
Dental Services	SAS and EC	Residual, distributed using the SAS					
Other Health, Residential, and Personal Care	SAS, EC, Program or Budget data, and other data	SAS and other data					
Home Health	SAS and EC	Residual, distributed using the SAS					
Nursing Care Facilities and Continuing Care Retirement Communities	SAS and EC	Residual, distributed using the SAS					
Prescription Drugs	IMS Health and CRT	Residual, distributed using data from IMS Health	N/A				
Durable Medical Equipment	I-O and EC	Personal Consumption Expenditure, CE, and MEPS			MAX/MSIS		
Other Non-durable Medical Products	Kline & Co and I-O	N/A	N/A	N/A	N/A		

### Key of terms:

AHA = The American Hospital Association's Annual Survey of Hospitals

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

IMS Health = IMS Health's National Prescription Audit and Method of Payment Report

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 Health Care Quality and Research's Medical Expenditure Panel Survey

PCE = Personal Consumption Expenditures

Kline & Co. = Kline & Co. annual survey of over-the-counter drugs

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

## Medical Services

### Hospital Care

In the NHEA definition, hospital care spending covers revenues received for all services provided in hospitals to patients. Thus, expenditures include revenues received to cover room and board, ancillary services such as operating room fees, inpatient and outpatient care, services of resident physicians, 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.

All hospitals in the U. S. are included in the scope of the NHEA. Expenditures are estimated separately for federal hospitals and non-federal hospitals. The value of hospital output is measured by total net revenue. 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. Thus, although revenue is measured in accrued terms rather than cash terms, the value is expressed as what the hospital expects to receive, rather than what it charged. Non-patient

revenues are included in the NHEA because hospitals take anticipated levels of these revenues into account when setting patient revenue charges.

Expenditures for hospital care are estimated separately for non-federal community hospitals; non-federal, non-community hospitals; and federal hospitals.

Total non-federal community hospitals spending levels are benchmarked to the 2007 American Hospital Association (AHA) annual survey and extrapolated using the growth derived from the aggregate revenue trends in the AHA annual survey, the Service Annual Survey (SAS), and the Quarterly Services Survey (QSS). Total non-federal non-community hospital spending is also benchmarked to the 2007 AHA Annual Survey and is extrapolated using the AHA annual survey for periods where the data are available and the SAS for the most recent year.

Total federal hospital spending is calculated as the sum of expenditures for services provided at federal VA hospitals, DOD hospitals, Indian Health Service (IHS) hospitals, and other federal hospitals.

NHE hospital spending by payer for programs such as Medicare, Medicaid, DOD, VA, and IHS is estimated using detailed expenditure data from these federal and state and local programs. Hospital spending paid for by OOP, PHI, other private payments, and state and local subsidies are estimated as a residual (aggregate spending less all other payers). The distribution between OOP, PHI, other private, and state and local subsidies is determined using payer distributions from the S A S and AHA.

### **Professional Services: Physician and Clinical; Dental; and Other Professional Services**

Expenditures reported in the professional services category include services rendered in establishments of health professionals. These groups are determined by the NAICS classification of the establishment where the service is provided. The NHEA "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). The dental services category is comprised of services provided by Offices of Doctors of Dental Surgery (D.D.S.), Doctors of Dental Medicine (D.M.D.), or Doctors of Dental Science (D.D.Sc.) (NAICS 6212). The other professional services category is comprised of services provided by offices of other health practitioners (NAICS 6213).

The services of professionals working under salary for a hospital, nursing home, or other types 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 professional services estimates; services provided by nursing home staff nurses in a nursing home are included with nursing care facilities and continuing care retirement communities and excluded from the professional services estimate. In addition, some physicians receive professional fees from arrangements with hospitals, including minimum guaranteed income, percentage of departmental billing, and bonuses. These fees are counted with hospital expenditures, rather than with expenditures for physician services.

NHEA estimates for professional services through the late 1970s are based primarily on statistics compiled and published by the Internal Revenue Service (IRS). Business receipts (which exclude non-practice income) were summed for sole proprietorships, partnerships, and incorporated practices to form the bulk of the estimate. In the late 1970s, the IRS was forced to reduce the size of the sample of income tax returns used to prepare its Statistics of Income (SOI). The reduced sample size limited the usefulness of the SOI to make time-series estimates of health spending. Fortunately, new data sources emerged to supplement the SOI data. Data from the S A S and Economic Census (EC), compiled by the U.S. Census Bureau, are now used to estimate the year-to-year change in the revenue of these professional services.

The E C, a once-every-five-year census, collects receipt/revenue information from all private service establishments with paid employees, and serves as a benchmark for the SAS, which is a sample survey of service establishments. Non-employer (businesses that have no paid employees and are subject to federal income tax) revenue is estimated using records from the (IRS) (primarily for sole proprietorship businesses filing IRS Form 1040, Schedule C). The IRS records are edited and published by the U.S.

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Census Bureau in its Non-employer Statistics series through 2011. (<http://www.census.gov/econ/nonemployer/>). The 2012 non-employer estimates are imputed.

In addition to Census estimates, other sources of information are used to corroborate the physician and clinical services expenditures estimates in the NHEA: data on employment, hours and earnings in private health establishments, provided by the Current Employment Statistics (Bureau of Labor Statistics (BLS), 1972-2012); estimates of price inflation provided by the Consumer Price Index (CPI) and Producer Price Index (PPI) (BLS, 1960-2012). Indirect measures such as hospital admissions, and inpatient days that require complementary professional services in previous years and direct measures of visits from (IMS) are also included.

An addition is made to physician and clinical service expenditures for the portion of medical laboratory services that are billed to the patient directly from the lab rather than being billed through the physician or clinic, based on data for establishments coded as NAICS 6215, medical and diagnostic laboratories. Also, a subtraction is made to physician and clinical service expenditures of professional fees paid to physicians by hospitals, since these fees are included in hospital expenditures. Estimates of spending for government run VA, DOD, and IHS clinics and the Coast Guard Academy Clinic are also added to physician and clinical services expenditures. The SAS does not collect data for government facilities in this category.

Estimates of spending for dental services are based upon IRS data (IRS, 1960-87), and in later years the U.S. Census Bureau SAS and the EC. As the final estimates are prepared, additional information is considered from the American Dental Association (1980-2000) on dental office expenditures, from the Current Employment Statistics (BLS, 1972-2012) on employment, and from the (CPI) (BLS, 1960-2012) on dental expenses. The receipts of dental laboratories (SIC 8072 and NAICS 339119) are not included explicitly, because all billings are assumed to be made through dental offices and therefore included in expenditure estimates.

Other professional services category includes spending from service establishments of health practitioners other than physicians and dentists. Professional services include, but are not limited to, those provided by chiropractors, optometrists, physical, occupational, and speech therapists, podiatrists, and private-duty nurses. These estimates are developed using data from the IRS, the U.S. Census Bureau and the BLS. A portion of optometrist revenue presumed to represent eyeglasses, contact lenses, and other optical goods are deducted, as that spending is included in durable medical products. The percentage of optical goods from optometric offices is estimated using product information from the EC and historical data from the SAS.

### **Other health, residential, and personal care**

The other health, residential, and personal care category combines spending for health care in many different programs including school health, worksite health care, Medicaid home and community based waivers, some ambulance services, residential mental health and substance abuse facilities, and other types of health care. Generally, these, services are provided in non-traditional settings.

Expenditures for ambulance services are estimated using the SAS as well information from the Journal of Emergency Medical Services. Expenditures for care in residential care facilities are estimated using the SAS, internal Medicaid data for intermediate care facility services for the Intellectually Disabled (ICFID), information from the VA, and information from the Substance Abuse and Mental Health Services Administration (SAMHSA).

The worksite healthcare estimates are derived from various data sources. A 1984 survey of employer-sponsored health plans (McDonnell et al., 1987) produced an estimated cost per employee with access to covered services in 1984. The estimate is extrapolated from the 1984 estimated cost per employee using national employment data and the CPI for medical services and physicians from the BLS, as well as adjusted for changes in use and intensity. Additional information from the Mercer Survey for onsite health care and the Kaiser/HRET survey of employer-sponsored health benefits provides data on the number of employees that are provided worksite health care services.

Expenditures for medical care not delivered in traditional medical providers sites include 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 of some of the statutory provisions 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 are 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.

### Home Health Care

The home health component of the NHEA measures annual expenditures for medical care services delivered in the home by freestanding home health agencies (HHAs). NAICS 6216 defines home health care providers as private sector establishments primarily engaged in providing skilled nursing services in the home, along with a range of the following: personal care services; homemaker and companion services; physical therapy; medical social services; medications; medical equipment and supplies; counseling; 24-hour home care; occupational and vocational therapy; dietary and nutritional services; speech therapy; audiology; and high-tech care, such as intravenous therapy.

Hospital-based HHAs are classified with hospitals (NAICS 622), and are therefore included with hospital care expenditures. Beginning in 1987 and continuing through 1996, HHAs were classified under the SIC, which defines home health care providers (SIC 8082) as establishments primarily engaged in providing skilled nursing or medical care in the home, under supervision of a physician. This definition is consistent with NAICS 6216.

For employer-based establishments, estimates of freestanding home health spending in 1987, 1992, 1997, 2002, and 2007 are based on business receipts of private taxable and tax-exempt firms collected in the U.S. Census Bureau's quinquennial EC of Service Industries. Information from the U.S. Census Bureau's SAS 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 for home health care services.

Government-owned HHAs are not included in the EC of Service industries and are therefore estimated separately and added to the estimates of total employer and non-employer revenue. To estimate revenue for government-owned HHAs, an annual adjustment factor is calculated using a ratio of Medicare reimbursements for government-owned freestanding HHAs to Medicare reimbursements for all privately-owned freestanding HHAs. These Medicare reimbursements by type of agency and type of control 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. Total home health spending is derived by adding together the receipts for private establishments and the estimated revenue of government facilities.

Freestanding home health expenditures in 1987 are extrapolated back to 1967 based on data available from Medicare and Medicaid. Approximations of national spending for Medicare home health care in each year from 1967 through 1984 were obtained from Medicare spending for non-facility-based HHA services and estimating beneficiary liability for Medicare Part B copayments from 1967 through 1981. (Medicare dropped beneficiary co-payment requirements from home health services in 1982) Total HHA costs and the shares attributable to Medicare are available from unaudited cost reports submitted to Medicare by HHAs.

Analysis of cost report data from agencies that were not part of a hospital or nursing home indicate that agency costs for services, medical equipment, and supplies provided to Medicare patients represented approximately 50 percent of total agency costs. This share was observed in data extracted from cost report files in the mid-1970s (Health Care Financing Administration, 1974-76). Examination of annual data for 1981-84 verified Medicare's 50-percent share (Health Care Financing Administration, 1981-84). 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. Data on voluntary public health nursing agency income and expenditures were collected in surveys conducted by the National League for Nursing

in 1958, 1963, and 1967. 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 (Freeman, 1969).

### **Nursing Care Facilities and Continuing Care Retirement Communities**

Expenditures reported in this category are for services provided by freestanding nursing homes. These facilities are defined in the 2007 NAICS as private sector establishments primarily engaged in providing inpatient nursing, rehabilitative, and continuous personal care services to persons requiring nursing care (NAICS 6231). This category includes continuing care retirement communities with on-site nursing care facilities (NAICS 623311). In the 1972 and 1987 SIC, these establishments were identified as nursing and personal care facilities (SIC 805). In the NHEA, hospital-based nursing home spending is included with hospital care expenditures (NAICS 622).

Estimates of expenditures for care received in freestanding nursing homes for the years 1977, 1982, 1987, 1992, 1997, 2002, and 2007 are based on business receipts of service establishments collected in the U.S. Census Bureau's quinquennial EC. Information from the U.S. Census Bureau's SAS is used to interpolate between the EC benchmark years and extrapolate to later periods. Estimates of expenditures for care received in state and local government facilities as well as government outlays for care provided in nursing facilities operated by the VA 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. The estimates were interpolated and extrapolated using employee work hours for nursing and personal care facilities (SIC 805) (BLS, 1972-2012) multiplied by the growth in input prices (Centers for Medicare and Medicaid Services (CMS) October 2011 and *Federal Register* 2007).

### **Medical Goods**

#### **Retail Purchase of Medical Products**

This class of expenditure is limited to spending for products purchased or leased from retail outlets and through mail order. The value of drugs and other products provided to patients in hospitals (on an inpatient or outpatient basis), nursing homes, and other provider settings, are implicit in estimates of spending for those providers' services. The one exception is for optical goods, which comprise a large portion of optometrist receipts NAICS (62132). Receipts for these products are removed from optometrist's receipts and included in the durable medical equipment (DME) category.

#### **Prescription Drugs**

Estimates of expenditures for prescription drugs include 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.

Drug purchases by consumers from these retail establishments are based on data from the EC (U.S. Census Bureau, 1992, 1997, 2002, and 2007). Added to the EC data are estimates for government-run mail order facilities, state-specific sales taxes on prescription drugs, and adjusted non-employer drug store receipts. Retail sales that flow through nursing homes and those that are provided directly by institutions are removed. Information from IMS Health Inc. (1992-2012) is used to interpolate between the EC benchmark years and to extrapolate to later periods. Prior to the 1992 EC, prescription drug estimates were developed using domestic drug sales augmented by wholesale and retail markups and by estimates of consumption for various channels of users.

The prescription drug estimates are adjusted to account for manufacturers' rebates that reduce insurers' net payments for drugs. In recent years, 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 NHEA estimates of prescription drugs are based on retail sales data at the pharmacy level, a reduction to account for rebates must be made to total drug spending and to third party payments to retail pharmacies to avoid over-estimation of prescription drug spending.

### **Other Non-Durable Medical Products**

Other non-durable medical products include non-prescription drugs (products purchased over the counter such as analgesics and cough and allergy medications) and medical sundries (items such as surgical and medical instruments and surgical dressings, and diagnostic products such as needles and thermometers). Estimates of these retail purchases by consumers are based on data from the national Input-Output (I/O) tables produced by the Bureau of Economic Analysis (BEA) (1963, 1967, 1972, 1977, 1982, 1987, 1992, 1997, and 2002). Expenditures for other non-durable medical products for 1960-1996 were interpolated between I/O years and extrapolated to earlier periods using PCE data from the National Income and Product Accounts (BEA, 1960-1996). For 1997 forward, the two components comprising the non-durables estimate (non-prescription drugs and medical sundries) are interpolated and extrapolated separately. For non-prescription drugs, data for 1997-2007 are interpolated between I/O years and extrapolated to 2012 using retail sales data (Kline & Company 1960-2012). For medical sundries, data for 1997-2012 are based on personal consumption expenditure data from the National Income and Product Accounts (BEA, 1997-2012).

### **Durable Medical Products**

Expenditures in this category represent retail sales of items such as contact lenses, eyeglasses and other ophthalmic products, surgical and orthopedic products, medical equipment rental, oxygen and hearing aids. Durable products generally have a useful life of over three years whereas non-durable products last less than three years. The estimate of DME expenditures is based on detailed I/O table final demand data adjusted to meet NHEA definitions (BEA 1963, 1967, 1972, 1982, 1987, 1992, 1997, and 2002) and information from the U.S. Census Bureau's 2007 EC. In the intervening non-I/O years, total DME expenditures are interpolated and extrapolated using adjusted Personal Consumption Expenditures (PCE) data for therapeutic appliances and equipment. Estimates of DME spending by payer were developed using program data for Medicare, Medicaid, and Children's Health Insurance Program (CHIP). Expenditures for Maternal Child Health (MCH), vocational rehabilitation, IHS, other state and local, and other federal programs are estimated using the latest budget data from the Office of Management and Budget as well as other public sources. From 1987 through 2012, the split between PHI and OOP spending was prepared using Consumer Expenditure Survey (CE) data, and data from the National Medical Expenditure Survey and Medical Expenditure Panel Surveys (MEPS).

### **Personal Health Care, Payers and Programs**

These payers and programs are directly responsible for purchasing or providing medical goods and services that are rendered to treat or prevent a specific disease or condition in a specific person in the U.S. Often several types of payers or programs combine to pay for an individual's health care. These include OOP, health insurance, and other third party payers and programs. At the PHC level these estimates do not include government administration and net cost of PHI expenditures (Exhibit 5).

Exhibit 5: Structure of the National Health Expenditure Accounts by Source of Funds

<b>N H E</b>	<b>H C E</b>	<b>P H C</b>	-Out of pocket
			-Health Insurance
			-Private Health Insurance
			-Medicare
			-Medicaid (Title XIX)
			-Total CHIP (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
			<b>PHC plus:</b>
			-Administration and the Net Cost of Private Insurance
			-Public Health Activity
			<b>HCE plus:</b>
			-Investment
			-Research
			-Structures
			-Equipment

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

**Out-of-Pocket**

OOP spending for health care consists of direct spending by consumers for health care goods and services. Included in this estimate is the amount paid OOP for services not covered by insurance and the amount of coinsurance or deductibles required by 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).

Premiums for insurance plans such as PHI and Medicare are not included with this funding category 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 OOP source of funds category, and are counted as PHI.

For hospitals, physicians and clinics, dental, other professionals, home health and nursing home services, the SAS provides data on OOP payments along with all other sources of funds. Other sources of data for OOP spending include the CE Survey and publications of trade associations such as Visiting Nurses Association (1988) and its predecessor (the Voluntary Public Health Nurses Association), the AHA (1980-2010), the American Medical Association (AMA) (1984-2001), the American Dental Association (1980-2000) and various nursing home surveys (National Center for Health Statistics, various years).

In addition, data from surveys of the non-institutional population's health care use and financing patterns, conducted periodically over the past three decades, provided information used to determine the amount of OOP 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 for . . . public policy and research activities" (Research Triangle Institute, 1987). These studies were followed in 1977 by the National Medical Care Expenditure Survey (National Center for Health Services Research, 1977), in 1980 by the National Medical Care Utilization and Expenditure Survey (National Center for Health Statistics, 1980), and in 1987 by the National Medical Care Expenditure Survey (National Center for Health Services Research, 1987) and in 1996-2008 by data from, the MEPS - Household component (Agency for Healthcare Research and Quality 1996-2011).

### Health Insurance

This aggregated category includes: PHI, Medicare, Medicaid, CHIP, DOD, and VA. These plans provide enrollees and beneficiaries insurance against medical losses and, in some instances, directly provide medical care.

### Private Health Insurance

PHI plans in the NHE include traditional managed care, self-insured health plans and indemnity plans. Managed care plans include Health Maintenance Organizations (HMO's), Preferred Provider Organizations (PPO's) Point of Service Plans (POS's), and Consumer Directed Health Plans (CDHP's). An HMO is a prepaid health plan where the enrollee pays a co-payment but must receive care from an approved provider. A PPO is a medical plan where coverage is provided to enrollees through a network of selected health care providers, although in some cases enrollees may go outside the network and pay a larger share of the cost. A POS plan is an "HMO/PPO hybrid" or an "open-ended" HMO. POS plans resemble HMOs for in-network services in that they both require co-payments and a primary care physician or gatekeeper. Services received outside of the network are usually reimbursed on a fee-for-service (FFS) basis. CDHP's consist of (HSAs) and/or high deductible health plans, often with higher deductibles and lower premiums than a typical health insurance plan, and may provide "first-dollar" coverage for some preventative services without the requirement of a deductible.

Self-insured plans are offered by employers and other groups who directly assume the major cost of health insurance for their employees or members, with some self-insured plans bearing the entire risk. Self-insured groups can also insure against large claims by purchasing stop-loss insurance plans. Stop-loss coverage is a form of reinsurance that limits the amount an employer will have to pay for each person's health care (individual limit) or for the total expense of the company (group limit). In addition, some self-insured groups' contract with traditional carriers or third-party administrators for claims processing and other administrative services. Other self-insured plans are self-administered.

Private health insurance benefits by type of service are 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, the American Hospital Association and IMS as well as household data from surveys such as the National Medical Care Expenditure Survey (National Center for Health Services Research, 1987) and later, the Medical Expenditure Panel Survey-Household Component (Agency for Healthcare Research and Quality, 1996-2006 and 2009-2012).



### Medicare

Medicare is a health insurance program for people age 65 or older, people under the age of 65 with certain disabilities, and people of all ages with end-stage renal disease (ESRD).

Estimates of Medicare spending for PHC are based on information prepared by the CMS Office of the Actuary (OACT) for the Medicare Trustees Report, reports submitted by Medicare contractors, and administrative and statistical records. Medicare is estimated in two pieces, (FFS) and managed care. For each, expenditures are estimated separately by service category and then summed.

#### *Hospital Insurance (HI) and Supplementary Medical Insurance (SMI) Trust Funds*

Annually, in the Medicare Trustees Report, expenditures are reported according to the part of the Medicare trust fund responsible for payment. Hospital insurance HI, or Part A, expenditures include payments for inpatient hospital services, skilled nursing services, home health care, hospice care, and Part A managed care. HI payments are made by “fiscal intermediaries” on behalf of the Centers for Medicare and Medicaid Services.

Supplementary medical insurance (SMI), or Part B, expenditures include payments for physician services, DME, laboratory tests performed in physician offices and independent laboratories, and other services. These other services may include such as physician-administered drugs, freestanding ambulatory surgical centers, ambulance transport, and supplies. SMI payments are made by “carriers” on behalf of CMS for the above-mentioned Part B services.

Under SMI, fiscal intermediaries are responsible for reimbursement of institutional services as well. These include outpatient hospital services, home health services, laboratory services performed in hospital outpatient departments, and other services (such as renal dialysis performed in freestanding dialysis facilities, services in outpatient rehabilitation facilities, and services in rural health clinics). Part B expenditures for managed care are reported separately.

Beginning in 2004, a separate Part D account was established within the SMI trust fund that is responsible for payments for prescription drugs.

Because the reporting of expenditures in the Trustees Report by type of benefit (HI or SMI) and type of service is different than the NHE definitions and concepts of services, a series of adjustments to the FFS incurred benefits are necessary to achieve consistency between these two sets of Medicare estimates. An initial conceptual adjustment is made to eliminate small amounts of incurred benefit spending occurring outside the U.S. for Medicare enrollees. The following sections detail how spending by NHE types of services are derived using Trustees Report incurred benefit spending data.

#### *Fee-for-Service Estimates: Parts A & B*

##### *Part A Services*

###### *Hospital Care*

Hospital care is a summation of incurred benefits for inpatient hospital care, outpatient hospital care, and hospital-based hospice, hospital-based nursing home care and hospital-based home health care. Also included in hospital care is the estimated combined billing amounts for services of hospital-based physicians (combined billing was allowed by Medicare for inpatient expenses incurred through fiscal year 1983). Outpatient hospital benefits are adjusted to exclude payments for freestanding ESRD clinics, federally qualified health centers (FQHCs), rural health clinics (RHCs), comprehensive outpatient rehabilitation facilities (CORFs) and community mental health centers (CMHCs) (which are included in the Physicians and Clinical services estimate).

###### *Nursing Home and Home Health Care*

Incurred benefits for skilled-nursing facility services and home health care are adjusted to include spending for freestanding facilities only; hospital-based spending for these facilities are included with the

hospital estimate. In addition, home health-based hospice spending and skilled nursing facility-based hospice spending are separately estimated and are added to freestanding facility estimates for skilled nursing facilities and home health care to derive total spending for nursing home care and home health care.

### *Part B Services*

Estimates of spending for physician and clinic services, other professional services, non-Part D prescription drugs, and other medical non-durable and durable medical supplier services are extracted from actuarial estimates of incurred benefits for physician and Part B supplier services. Shares of spending for each of these categories are based on proportional distributions of reimbursements by provider specialty and procedure codes obtained from various administrative and statistical records. These shares are then applied to total Part B incurred benefit payments, which produce estimates of spending for NHE-based categories.

### *Physicians and Clinics*

Expenditures for physician services include the physician and laboratory services portions of incurred benefits for Physicians and Part B Supplier services. Expenditures for clinics include payments to freestanding ESRD clinics, federally qualified health centers (FQHCs), rural health clinics (RHCs), comprehensive outpatient rehabilitation facilities (CORFs) and community mental health centers (CMHCs). In addition, expenditures for physician-administered drugs are included with physician services.

### *Other Part B Services*

The supplier share of incurred benefits for physician and Part B supplier services is subdivided into further categories based on provider specialty designations. These NHE categories include other professionals, ambulance services, dental services, DME, prescription drugs, and other non-durables.

The category of other professional services includes payments for the services of other health professionals, such as podiatry, chiropractic services, optometry, physical and occupational therapy, and nurse practitioner services. Ambulance services are classified in other health, residential, and personal care beginning in NHE 2009 and are the only services included within this Medicare category. Dental service expenditures are separately estimated using the portion of expenditures attributable to oral surgery, as traditional Medicare does not cover regular dental services.

Expenditures for DME include payments for the retail purchase or rental of DME from Medicare Part B suppliers and payments for oxygen and oxygen-related equipment (Note: these do not include expenditures associated with a provider's purchase or rental of items, such as for a hospital or physician's office).

The DME share is further subdivided into prescription drugs and other non-durables based on billing data using CMS's Healthcare Common Procedure Coding System. The prescription drugs included in this category represent drugs billed by pharmacy suppliers that are administered through DME (such as respiratory drugs administered through a nebulizer), drugs billed by pharmacy suppliers that are self-administered (such as immunosuppressive drugs and oral anti-cancer drugs), and other separately billable Part B drugs. Pharmacy supply and dispensing fees are also included in the Part B prescription drug category of the NHE.

The Medicare FFS prescription drug estimates include calendar year incurred benefit spending for Part B and Part D drugs. Expenditures for Part D drugs are separately estimated, and are discussed in more detail in the next section.

### *Part D*

With the implementation of the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA), a separate Part D account was established within the SMI trust fund. This portion of the SMI trust fund pays for prescription drugs. Beginning with NHE 2004, Part D benefits are allocated to the NHEA

category, retail prescription drugs. In 2004 and 2005, expenditures represent transitional assistance benefits only, and for 2006 forward, expenditures represent the full prescription drug benefit.

Calendar year incurred Part D expenditures are estimated using data from the Prescription Drug Event (PDE) file. Data is available separately for stand-alone prescription drug plans (PDPs) and for Medicare Advantage prescription drug plans (MA-PDs). Part D data for PDPs and MA-PDs are further divided into expenditures for benefits and for administration. Part D expenditures for MA-PDs are included in the Medicare managed care estimates of prescription drugs and administration.

In the NHE, Part D expenditures for Medicare employer-subsidized plans are subtracted from Medicare expenditures, and are included in the PHI estimates, as these subsidies are provided to private businesses to help pay for coverage of their retired Medicare-eligible employees.

### *Managed Care Estimates (known as Part C or Medicare Advantage)*

Annually, the Medicare Trustees Report reports total Medicare payments to managed care plans for services covered by the HI (Part A) and SMI (Part B) programs. All Medicare managed care enrollees receive coverage for a standard package of benefits, but they may also be covered for a wide variety of additional services such as routine physicals, preventive care, and prescription drugs.

The Medicare managed care program, otherwise known as “Medicare Advantage”, makes capitated payments on behalf of Medicare to managed care organizations to care for beneficiaries enrolled in the managed care option. For most types of plans, beneficiaries enrolled in managed care are limited in their choice of health care providers. Submission of FFS claims on behalf of enrolled beneficiaries is not permitted. Instead, health care providers are paid by a private health care organization (such as a HMO or PPOs), which are paid a monthly rate. The monthly payment made by CMS on behalf of each plan enrollee is based on a plan’s bid and is adjusted for the enrollee’s demographic characteristics, health status, and county-of residence. In the NHE estimates, Medicare managed care payments are allocated to both services and administrative expenses.

Comprehensive statistics on specific services used by managed care enrollees are not reported to CMS. Therefore, service distributions of Medicare capitated payments are estimated using data from Bid Pricing Tools (BPTs) (which began in 2006). Prior to the BPTs, Medicare capitated payments were estimated using data from Adjusted Community Rating (ACR) proposals. These proposals were submitted for approval of the monthly premiums that the plan intends to charge and the services it intends to deliver to Medicare enrollees for the upcoming year. These types of forms are the only available source from which to obtain estimates of managed care expenditures by type of service.

### **Medicaid**

Medicaid is a joint state and federal insurance program that is available only to certain low-income individuals and families who fit into an eligibility group that is recognized by federal and state law.

Medicaid estimates are based primarily on financial information reports filed by the State Medicaid agencies on Form CMS-64. 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. Several types of adjustments to reported program data are necessary to fit the estimates into the framework of the NHEA. The first series of adjustments are related to FFS payments and are necessary to create Medicaid estimates that are consistent with the NHEA service and product classification structure.

First, Medicaid expenditures, reported by State by Medicaid program categories on Form CMS-64, are mapped to NHEA service categories by State. Total Medicare hospital spending is the sum of eleven types of program payments to include (inpatient hospital – regular, inpatient hospital – disproportionate share (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. Adjustments are made for prior period payments.

Second, an estimate of hospital-based nursing home expenditures is added to hospital care expenditures and subtracted from nursing home care expenditures.

Third, an estimate of hospital-based home health care spending is added to hospital care expenditures and subtracted from home health care expenditures.

Fourth, an estimate of Medicaid buy-ins to Medicare is deducted to avoid double counting when the programs are presented together in the NHEA.

Finally, a DME estimate is developed from the Medicaid Analytic eXtract — a set of person-level data files on Medicaid including payments by service. The DME amount is removed from other services payments included in the other health, residential, and personal care NHEA category.

The second series of adjustments create NHEA service distributions for capitated and other insurance premium payments recorded on the Form CMS-64. Medicaid premiums payments are reduced by administrative costs and then allocated to NHEA service categories based on the distribution of FFS spending for selected services in the state. In certain states, 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.

The third stage of the Medicaid estimating procedure is to sum the FFS and insurance portions of the Medicaid service estimates together the 50 states and the District of Columbia together to get national estimates.

To accurately measure state contributions to Medicaid expenditures, further adjustments are made to state Medicaid payments to account for the diversion of some Medicaid funds to states' general revenue funds for use in other state programs. States have used two devices—disproportionate share hospital (DSH) and upper payment limit payments—for this purpose. States accomplished this by working with nursing homes and hospitals to set higher reimbursement rates than usual for the service provided or make extra DSH payments to hospitals serving a disproportionate share of low-income residents.

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

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) with the explicit goal of reducing the number of children without health insurance (P.L.105-33). The BBA97 gave states the option to set up new independent health insurance programs for children, to expand existing state Medicaid programs to insure children who were eligible for health insurance coverage under CHIP eligibility standards, 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. CHIPRA finances CHIP through FY 2013.

In the NHEA, the estimates of spending under CHIP are in two parts. In the first part, the Title XXI programs are estimated as independent government programs and included in the federal and State other government program categories. In the second part, the Medicaid expansion programs are estimated independently of the remainder of the Medicaid program. The data sources are Form CMS-21 for Title XXI programs and Form CMS-64 for Title XIX programs. Service distributions are derived from program payment data reported on these forms and crosswalked to NHEA service categories in the same fashion as the Medicaid estimates.

### Department of Defense

DOD's health care program, TRICARE, covers members of the uniformed services, their families and their survivors, as well as retired members and their families<sup>3</sup>. Adjustments are made to remove items outside of the scope of the NHEA including spending levels for Non-DOD beneficiaries.

Estimates of the DOD health care costs (DOD, 1981-2012) are based on DOD's FY 2014 President's Budget Submission. Also included are the DOD's projected receipts to the Defense Health Program from the DOD Medicare Eligible Retiree Health Care Fund). This fund pays for health care costs of Medicare eligible retirees, retirees' family members, and survivors.

In addition, unpublished data provided by the DOD (DOD, 2006-2012) are used to estimate hospital, clinics and dental care spending for active personnel. Finally, data for the non-active duty populations are provided directly by the program administrators (DOD, 1980-2012), including data for separate hospital, physician and drug categories. All DOD health care spending data is converted from a federal fiscal year basis to a calendar year basis.

### Department of Veterans Affairs

Estimates of health expenditures by the VA are prepared using unpublished expenditure data supplied by the VA (*Allocation Resource Center*, 1999-2012) supplemented with data from the Budget Appendix of the U.S. Government (U.S. Government Printing Office, 1968-2012), Monthly Treasury Statements of Receipts and Outlays of the U.S. Government (U.S. Department of the Treasury, Financial Management Service, 1960-2012), and V.A. *Annual Reports and Congressional Submissions*. In addition, administrators of the Civilian Health and Medical Program of the Veterans Administration provide unpublished data on expenditures specific to this program (VA Health Administration Center, 1960-2012).

### Other Third Party Payers and Programs

#### Worksite Health Care

Worksite health care represents expenditures for PHC directly provided by employers for 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 or more extensive medical care such as onsite physician or hospital services. The estimate is extrapolated using national employment data and the CPI for medical services and physicians from the BLS, as well as adjusted for changes in use and intensity. Additional information from the Mercer Survey for onsite health care and the Kaiser/HRET survey of employer-sponsored health benefits provides data on the number of employees that are provided worksite health care services.

#### Other Private Revenues

The most common source of other private funds is philanthropy. 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 HHAs, other private funds also include income from the operation of gift shops, cafeterias, parking lots, educational programs, and investment income.

For hospitals, estimates of other private funds are based on data gathered by the AHA in its annual survey of all hospitals. Estimates of other private funds, including philanthropy, for other services are based on information from the U.S. Census Bureau' Services Annual Survey, trade associations, and person surveys such as the National Medical Care Expenditure Survey, the National Medical Care Utilization and Expenditure Survey, and the National Medical Expenditure Survey.

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<sup>3</sup> The medical care program for the families of active-duty members and retirees of the uniformed services used to be a separate program, Civilian Health and Medical Program of the Uniformed Services (CHAMPUS). This program has been subsumed under TRICARE.

### Indian Health Services

The provision of federal health services to American Indians and Alaska Natives is based on a special relationship between Indian Tribes and the U.S. The Indian Commerce Clause of the U.S. Constitution, as well as numerous treaties and court decisions, have affirmed this special relationship and the plenary power of Congress to create statutes that benefit Indian people. Principal among these statutes is the Snyder Act of 1921, which provides the basic authority for health services provided by the federal government to American Indians and Alaska Natives.

In the 1970s, federal Indian policy was re-evaluated leading to adoption of a policy of Indian self-determination. This policy promotes Tribal administration of federal Indian programs, including health care. Self-determination does not lessen any federal obligation, but provides an opportunity for Tribes to assume the responsibility of providing health care for their members.

The Indian Self-Determination and Education Assistance Act of 1975 (ISDEAA), as amended, and the Indian Health Care Improvement Act of 1976 (IHCIA), as amended, provided new opportunities for the IHS and Tribes to deliver care.

The IHCIA includes specific authorizations for providing health care services to urban Indian populations, to administer an Indian health professions program, and the authority to collect from Medicare/Medicaid and other third party insurers for services rendered at IHS or Tribal facilities. Under the ISDEAA, many Tribes have assumed the administrative and program direction roles that were previously carried out by the federal government. Tribes currently administer over one-half of IHS resources through ISDEAA contracts and compacts. The IHS administers the remaining resources and manages facilities where Tribes have chosen not to contract or compact health programs.

The recently enacted Patient Protection and Affordable Care Act (ACA) builds upon these laws by including provisions to modernize and update the IHS and expands the current health insurance system to further improve the quality of health care and make it more accessible and affordable for American Indians and Alaska Natives.

Data for IHS estimates are from the Appendix to the Budget of the United States. The IHS justification document is then utilized to breakout the Appendix data into the various NHEA service categories.

### Workers' Compensation

Workers compensation includes expenditures for medical benefits that are paid for by federal and state and local workers compensation programs. The U.S. Department of Labor, Office of Workers' Compensation Programs administers compensation programs which provide benefits to federal workers or their dependents that are injured at work or acquire an occupational disease. Estimates for these programs are based on the U.S. budget appendix and information from the U.S. Department of Labor.

Non-federal workers' compensation programs are financed almost exclusively by employers. Premiums paid are based on industry classification and 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.

Estimates by state are based on an annual report by the National Academy of Social Insurance (NASI). This is the only source of comprehensive national data on workers compensation benefits and costs. NASI began reporting these estimates after SSA discontinued them in 1995 (1993 was the last year of data estimated by SSA). Previously, workers' compensation estimates were published annually in the *Social Security Bulletin*.

### **General Assistance**

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

General assistance refers to direct payments or payments to vendors to or on behalf of needy persons who do not qualify for federally financed assistance programs. It is provided by state and local government jurisdictions, and is 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. State Pharmaceutical Assistance Program (SPAP) data are collected separately from other general assistance data.

General assistance and SPAP data are collected directly from the pertinent state or county agencies, as no national clearinghouse for these data exists.

### **Maternal and Child Health**

The Maternal and Child Health program is a Federal-State partnership program. Passed in the Social Security Act of 1935, the federal government (through Title V) pledged its support for State efforts to improve the health of all mothers and children. The program was converted to a block grant program as part of the Omnibus Budget Reconciliation Act of 1981. States and jurisdictions use Title V funds to design and implement a wide range of maternal and child health programs that meet national and state goals such as reducing infant mortality and the incidence of handicapping conditions among children, increasing the number of immunized children, increasing the number of children in low-income households who receive assessments and follow-up diagnostic and treatment services, providing access to comprehensive prenatal care for women; and facilitating the development of comprehensive, family-centered systems of care for children with special health care needs. The States are required by law to spend three dollars for every four federal dollars allocated.

Data for federal Maternal and Child Health spending is obtained directly from the Maternal and Child Health Bureau. The federal portion is based mainly on Maternal and Child Health block grant data by state, Special Projects of Regional and National Significance projects, Community Integrated Service Systems (CISS) projects, and some research/training amounts. The state and local spending estimate is based on Public Health Foundation data (FYs1980-89) and FYs1997-2011 are obtained from the Maternal and Child Health Bureau website.

### **Vocational Rehabilitation**

The vocational rehabilitation program provides funds from the federal and state and local government for the rehabilitation of individuals with physical and mental impairments. Only PHC goods and services financed by the program are included in the health accounts. Data for the program is obtained from the U.S. federal budget and from vocational rehabilitation state grant data from the Department of Education (DOE). State and local spending data is provided by the federal DOE.

### **Other Federal Programs**

This category includes federal general hospital/medical, Office of Economic Opportunity (O.E.O), Non-XIX federal, and PCIP (pre-existing conditions insurance plans).

To be included in the NHEA, a program must have provision of care or treatment of disease as its primary focus. For this reason, nutrition, sanitation, and anti-pollution programs are excluded. Another example of this is "Meals on Wheels", which is excluded from the NHEA because it is viewed as a nutrition program rather than a health service program.

Federal general hospital and medical expenditures captures federal health care funds and grants budgeted to various federal agencies.

The Office of Economic Opportunity and Non-XIX Federal are both programs that no longer exist. Expenditures by OEO were tracked from 1965 to 1973, while Non-XIX Federal payments were from 1960 to 1971.

Pre-existing conditions insurance plans were created under the 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.

Estimates of federal program expenditures are based, in part, on data reported by the budget offices of federal agencies. Several differences exist between spending definitions in the federal budget and those used in the conceptual framework of the NHEA. Expenditures for 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. Payments made by government agencies for employee health insurance are included with PHI expenditures, rather than government expenditures.

### **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 service categories in the NHEA. The source for this information is the SAMHSA budget, monthly treasury statements from the Department of the Treasury, and the U.S. federal budget.

### **Other State and Local Programs**

Other state and local programs include: temporary disability insurance, state and local subsidies to providers, and Non-XIX state and local.

In general, all spending by state and local government units that is not reimbursed by the federal government (through benefit payments or grants-in-aid) nor by patients or their agents is treated as state and local expenditures. State and local spending is net of federal reimbursements and grants-in-aid for various programs. As with federal expenditures, payment for employee health insurance by state and local governments is included under PHI expenditures.

Temporary disability insurance includes medical care benefit 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 to providers are payments by the state and local government to facilities owned by the state. These providers include hospitals and HHAs Non-XIX state and local expenditures existed from 1960 to 1971.

Data covering state and local programs come from a variety of sources. State agencies that operate general assistance programs supply 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.

### **School Health**

School health includes all PHC 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. The data sources used for this estimate include information from the Department of Education and the "*National Public Education Financial Survey*" conducted by the U.S. Census Bureau.



### **Health Consumption Expenditures (includes Personal Health Care Expenditures)**

Health consumption expenditures include all personal health care spending, government administration and the net cost of private health insurance, and public health activities. Premiums for third party payers and programs equal personal health care plus all applicable net cost and administrative costs.

#### **Government Administration and the Net Cost of Private Health Insurance**

This category includes the administrative costs of health care programs such as Medicare and Medicaid as well as the net cost of PHI. Net cost is the difference between premiums earned and benefits incurred and includes administrative costs, additions to reserves, rate credits and dividends, premium taxes, and net underwriting gains or losses. Net loss is estimated separately for various types of insurers. These costs are added to the benefits paid to account for the total cost of providing the benefits to the enrollee or beneficiary of the plan.

#### **Health insurance**

This aggregated category is defined to include several specific insurance plans; PHI, Medicare, Medicaid, CHIP, DOD, and VA. These plans provide enrollees and beneficiaries insurance against medical losses as well as provide health care directly. Health insurance at the HCE level includes the PHC benefits plus the administration and net cost of providing insurance.

#### **Private Health Insurance Net Cost**

PHI premiums are estimated as the sum of benefits and the net cost of PHI. Aggregate premiums are an estimate of total premium revenues, including payments made by employers on behalf of employees, the employee share of the employer-sponsored health insurance, the medical portion of accident (property and casualty) insurance, and individually purchased health insurance. The net cost of insurance is the difference between benefits and premiums. This difference includes administrative costs, and in some cases, additions to reserves, rate credits and dividends, premium taxes, and net underwriting gains or losses. This difference is estimated separately for various types of insurers.

There are three approaches to calculating the net cost of private health insurance

The first approach, labeled the insurance industry method," uses data from A.M. Best, Inc. (A.M. Best 2001-2012) to estimate total premiums and benefits paid for most insurance plans, including traditional indemnity, managed care, and property and casualty insurers. In addition, estimates of self-insured plans and prepaid plans are developed using from data from the MEPS-Insurance Component (MEPS-IC)(Agency for Healthcare Research and Quality, 1996-2006, 2008-2012) and a variety of sources including the Survey of Health Insurance Plans conducted by Health Care Financing Administration (HCFA) (McDonnell et al., 1987) for earlier years. Estimates of property and casualty premiums and benefits are developed using annual data for premiums earned and direct losses incurred published by A.M. Best (A.M. Best 2001-2012). The insurance industry model provides an estimate of the relationship between premiums and benefits, called the net cost ratio. For years prior to 1996, the net cost ratio was developed using a number of health insurance industry sources. This method measures earned premiums and incurred benefits directly from the principal payment source. Data for the Blue Cross and Blue Shield plans were used to estimate the net cost of plans marketed by its members (National Association of Blue Cross and Blue Shield plans, 1960-2005). Annual data on premiums and benefits published by the National Underwriter Company were used to develop estimates for commercial carriers through 1995 (National Underwriter Company, 1960-96). 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,

The second approach estimates PHI benefits by type of service using provider survey data in conjunction with source of funding spending from several sources. These sources include the U.S. Census Bureau, the AMA, the AHA and IMS as well as household data from surveys such as the National Medical Care Expenditure Survey (National Center for Health Services Research, 1987) and later, the MEPS-Household Component (Agency for Healthcare Research and Quality, 1996-2006 and 2008-2012). After

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medical benefits expenditures are estimated, the net cost ratio developed from the insurance industry method is used to inflate these benefit estimates to premiums.

In the third methodology, estimates of premiums are derived by combining PHI premium cost estimates from the Employer Costs for Employee Compensation survey (BLS, 1980-2012) with individually-paid PHI premium cost data from the Consumer Expenditure Survey and A.M. Best. (BLS, 1984-2010, AM Best, 2012).

Premium estimates developed from all three methodologies are then compared for reasonability. Recently available premium estimates from the MEPS-IC for 1996-2006, 2008-2012 provide an additional check for reasonability. The annual growth rates for each of the four premium totals are compared to one another and with private survey sources such as Mercer/Foster Higgins and Kaiser/HRET (Mercer 2012 and Kaiser 1992-2012). These comparisons are used to adjust benefit and premium estimates from the Industry approach to produce the final estimates and trends for the NHEA.

### Medicare

The Medicare program contains administrative costs borne by the federal government to pay for salaries and expenses related to the federal management of Medicare as well as the net cost of insurance for the private plans administering the Medicare Advantage program and Part D. The net cost of health insurance expenditures are estimated separately for private plans that offer Part D benefits and for private plans that provide insurance for enrollees in the Medicare Advantage program. The net cost of health insurance expenditures, including margins, for these private plans are added to the estimates of general administrative costs of the federal government.

Medicare outlays for administrative expenses are obtained from Department of the Treasury reports submitted to OACT, as reported annually in the Trustees Report. Administrative costs for HI (Part A) and SMI (Parts B and D) represent general administrative costs of the federal government.

The estimates of the net cost of insurance for Medicare Advantage were estimated using data from the Two-Year Lookback Form beginning in NHE 2008. The Two-Year Lookback Form provides data on the actual distribution of benefit versus non-benefit spending, and data was available for 2005, 2007, and 2008. For 2006, the administration percentage was estimated by calculating an average of the percentage difference between actual and projected expenditures for the three years in which Lookback data was available. For years prior to 2005, no Lookback data is available and the administrative portion of Medicare managed care spending was estimated using data from the ACR proposals. Beginning in NHE 2009, the Two-Year Lookback Form was discontinued. Therefore, estimates of actual benefit versus non-benefit expenditures for 2009 and 2010 were obtained from data included on plans' Bid Pricing Tool forms,

For estimates of Part D administration, data is obtained from the PDE file and represents estimates of general administration of federal government and the net cost of insurance for private plans. Additionally, estimates of the net cost of health insurance for Part D are calculated separately for stand-alone prescription drug plans (PDPs) and for Medicare Advantage prescription drug plans (MA-PD's)

### Medicaid

Medicaid administration costs and the net cost of PHI cover the federal and state and local salaries and expenses of the program as well as the net cost of PHI for the private plans that insure Medicaid enrollees. Medicaid administrative costs are estimated using CMS Medicaid program data. The net cost of PHI is prepared using total premiums paid from the CMS-64 and unique net cost ratios developed from the PHI data sources. These estimates of private insurers' net costs 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 the net cost of PHI are allocated to NHEA service categories based on the distribution of FFS spending for selected services in the state. In certain states, adjustments are made to account for specific services or products that are carved out or not offered with the premium. These carve-outs typically occur for prescription drugs and dental services.

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

Administration and net cost of private insurance for CHIP covers all of the federal and state and local salaries and expenses of the program as well as net costs of the private plans that insure CHIP enrollees. These expenditures when added to the PHC expenditures for CHIP equal the health consumption expenditures level for this program and are estimated using program data and information from the U.S. federal budget.

### **Department of Defense and the Department of Veterans Affairs**

Administration estimates of the DOD and the VA cover all of the federal salaries and expenses related to the health programs, including the administrative cost of providing care directly to some beneficiaries. These expenditures, when added to the PHC expenditures, equals the health consumption expenditures level for these programs and are estimated using program data as well as information from the U.S. federal budget.

### **Other Third Party Payers and Programs**

The other third party payers and programs that have administrative costs and/or net cost of PHI include IHS, workers compensation, MCH, vocational rehabilitation, other federal programs, and SAMHSA. The estimates of the net cost of PHI 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.

### **Public Health Activity**

In addition to funding the care of individual citizens, government is involved in organizing and delivering publicly provided health services such as epidemiological surveillance, inoculations, immunization/vaccination services, disease prevention programs, the operation of public health laboratories, and other such functions. In the NHEA, spending for these activities is reported in government public health activity. Funding for health research and government purchases of medical structures and equipment are reported in their respective categories. Government spending for public works, environmental functions (air and water pollution abatement, sanitation and sewage treatment, water supplies, and so on), emergency planning and other such functions are not included.

Most federal government public health activity emanates from the HHS. The Food and Drug Administration and the Centers for Disease Control and Prevention (CDC) account for the great majority of federal spending in the area. Since the 9/11 attacks, substantial public health funding has come from two other sources: The Public Health and Social Services Emergency Fund, a part of the HHS Departmental Management Budget, and the Department of Homeland Security.

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 are deducted to avoid double counting, as are expenditures made through the MCH Program and the Crippled Children's Program. Disbursements made by state and local government departments for environmental functions (water and sewer authorities, for example) are not included.

There are two basic data sources used in estimation of government public health activity. Federal spending is taken from annual budget documents prepared by the various agencies and summarized in The Budget of the U.S. (Executive Office of the President, 1960-2014). State and local government spending is estimated using data from the quinquennial (5-year) Census of Governments (U.S. Census Bureau, 1957, 1962, 1967, 1972, 1977, 1982, 1987, 1992, 1997, 2002, and 2007) and from its annual survey of state and local government finances [U.S. Census Bureau, 1960-2011]; the latter surveys all state governments and a sample of local government units drawn from the 5-year census. The most recent year's estimates (2012) are prepared by projecting the 2011 estimates to 2012 by applying the year to year change for 2010 to 2011. These state fiscal year estimates are converted to calendar year estimates by means of the standard statistical procedure used in the NHEA.

### National Health Expenditures (includes Health Consumption Expenditures)

NHE includes health consumption expenditures as well as investment in the medical sector for future consumption. Investment includes non-commercial research as well as purchases of medical structures and equipment.

#### Investment

##### Non-Commercial Research

Non-commercial research in the NHEA includes research of non-profit and government entities. Research and development expenditures by drug and medical supply and equipment manufacturers are not shown in this line, as those expenditures are treated as intermediate purchases under the definitions of national income accounting; that is, the value of that research is deemed to be recouped through product sales.

Through 1991, estimates of noncommercial research in the NHEA are based on data provided by the National Institutes for Health (NIH), the federal agency that funds a significant portion of research (NIH, 1995). Training and capital acquisition are excluded, but general support is included. The data are reported by source of funds and by performer, although the latter disaggregation is not shown here. The data are reported by NIH on a variety of timeframes (federal fiscal years, June fiscal years, and calendar years) and are converted to calendar years where necessary.

After 1991, actual outlay data for NIH (net of capital-related expenditures) that are published annually in the federal Budget (Appendix, Budget of the U.S. Government) were used. Outlays for research by other federal agencies were calculated as a percentage of NIH outlays based on their relationship in expenditures for total research (both health-related and non-health-related). The latter data are published annually by the National Science Foundation (*Federal Funds for Research and Development: Fiscal Years 2009-11*).

For state/local research funding, NSF data on nonfederal spending in academic institutions are used. Beginning with 1992, state/local funded research performed by non-academic non-profits was also calculated from special surveys conducted by the NSF (*Higher Education Research and Development: Fiscal Year 2011*). Private funding data for years starting with 1992 are now also obtained from the same NSF sources used for state and local funding. Financial data (from IRS Form 990) of non-profit research health entities (Urban Institute's National Center for Charitable Statistics)<sup>4</sup> is also used to develop the private portion of this estimate. National Taxonomy of Exempt Entities — Core Codes Classification System is utilized to summarize and develop annual trends of receipts from non-profit companies classified as medical research to move the estimates from 1998 - the last year of data available from NSF surveys. For private funds until 1991, came from the H. Hughes Medical Institute, National Health Council information on voluntary health agencies' support of medical research<sup>5</sup>, and the Foundation Center<sup>6</sup>.

#### Structures

The structures component of the NHEA is defined as the value of new construction put in place by the medical sector. This measure of the medical sector includes establishments engaged in providing health care, but does not include retail establishments that sell non-durable or durable medical goods. The construction measure includes new buildings; additions, alterations, and major replacements; mechanical and electric installations; and site preparation. Maintenance and repairs are excluded. Non-structural equipment such as X-ray machines and beds are included in equipment.

The value of new construction put in place includes the cost of materials and labor, contractor profit, the cost of architectural and engineering work, those overhead and administrative costs chargeable to the project on the owner's books, and interest and taxes paid during construction. For 1993-2010, the primary data source for the private structures estimates is the Annual Capital Expenditures Survey,

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<sup>4</sup> Additional information available at <http://nccs.urban.org/database/index.cfm>

<sup>5</sup> Available at <http://www.nationalhealthcouncil.org/>

<sup>6</sup> Foundation Giving Trends (2003), The Foundation Center. <http://foundationcenter.org/findfunders/statistics/>

conducted by the Census Bureau. The 2011 structures estimate is extrapolated forward from 2010 using data from the C-30 survey of new construction. The private structures estimates for preceding years (1960-1992) were prepared by extrapolating the 1993 values back by a time series developed using data published by the Census Bureau (1964-1992) and the BEA (1960-1964). For public structures, data published by the BEA are used to derive these estimates for 1960-2011.

### **Equipment**

The equipment component of the NHEA is comprised of the value of new capital equipment (including software) purchased or put in place by the medical sector during the year. The medical sector includes establishments engaged in providing health care, but does not include retail establishments that sell non-durable or durable medical goods. The capital equipment purchased or put in place includes all capital equipment purchased by medical establishments and is not limited to specific medical equipment or devices. For private equipment, the estimates are derived using a variety of data published by the Census Bureau (1960-2010) as well as data published by the BEA (1960-2011). The public equipment estimates are based on data published by the BEA (1960-2011).

## **National Health Expenditure Accounts by Type of Sponsor**

### ***Introduction***

The NHEA structure provides both the sources of payment and financiers of health care costs. The view by sources of payment includes measures of spending from payers and programs that directly pay for health care. These payers and programs are the entities that are responsible for paying for the health care bill and are usually third party insurers. These payers and programs are broadly classified as PHI, OOP, specific government programs such as Medicare and Medicaid, and other payers such as VA, DOD and MCH, among others. Additionally, for other private revenues, which is a small portion of expenditures, is also estimated and includes, philanthropic giving, worksite healthcare, and revenues received by some health care providers for non-health activities, such as the operation of cafeterias, gift shops, and educational programs.

Health spending by source of financing, or **sponsor**, 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 sponsor can be illustrated using PHI 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 (RDS) payments to private and state and local employers].

The financial burden of health care costs resides with the private business, households, and governments that pay insurance premiums, OOP, or finance health care through dedicated taxes or general revenues.

**Exhibit 6. Crosswalk of National Health Expenditure Payers to Business, Household, and Government Sponsors**

Payers	Sponsor			Government	
	Business, Household, and Other Private				
	Private Business	Household	Other Private	Federal	State and Local
Out-of-pocket		X			
Private Health Insurance	X	X		X	X
Other Private Revenues <sup>1</sup>			X		
Medicare	X	X		X	X
Medicaid				X	X
Other Payers <sup>2</sup>	X			X	X

<sup>1</sup> Includes Philanthropy, Private Research, Private, Structures and Equipment and Other Non-Patient revenues.

<sup>2</sup> Includes DOS, VA, CHIP, Worksite Health Care, IHS, Workers' Compensation, general assistance, MCH, vocational rehabilitation, SAMHSA, 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**

OOP funding is defined as direct spending by consumers for all health care goods and services. This includes the amount paid OOP for services not covered by insurance; the amount of coinsurance and deductibles required by PHI; 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. The definition and estimates for OOP spending is the same in the traditional source of funds estimates and in the sponsor analysis, where it is included with spending by the households.

**Private Health Insurance**

Private health insurance in the sponsor analysis is defined as PHI premiums excluding the Medicare RDS, the Consolidated Omnibus Budget Reconciliation Act (COBRA) subsidies (2009-2011), small business tax credits and Early Retirement Reinsurance Program (ERRP) (2009-2011). These adjusted premiums are disaggregated into employer-sponsored (both employee and employer shares) and individually purchased PHI premiums. Employer-sponsored health insurance premiums are defined as premiums paid by employers and/or employees through payroll deduction or to 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. Employer-sponsored premiums are estimated separately for private, state/local and federal employers and include active employees and retirees.

The primary data source for estimating private and state/local employer contributions to employer-sponsored health insurance plans is the MEPS-IC sponsored by the Agency for Health Care Research and Quality (1996-2006, 2008-2012). The MEPS-IC contains estimates of PHI expenditures separately for active employees and retirees of private businesses and state/local governments. The employer share of premiums paid by private business (2003-2012) and state/local government for active employees and retirees were estimated for using MEPS-IC data. For the period 1987-2003 and in 2007, PHI premiums paid by employers for active workers were estimated based on the annual growth rate from the Employer Cost for Employee Compensation component of the BLS National Compensation Survey (1980-2012). The U.S. Office of Personnel Management's supplied estimates of the premium amounts

paid by federal employers on behalf of their employees and retirees. Each segment's adjusted spending (private business, state and local government, and federal government) is then allocated to their respective sector.

The estimates of private businesses' (2003-2012) and state/local government's (2003-2011) employer-sponsored PHI premiums paid by active employees, retirees, and former employees who are covered by COBRA were also produced using MEPS-IC data.<sup>7</sup> The annual growth rate in household payments for PHI premiums from the BLS's CE was applied to the 2003 MEPS-IC estimate (BLS, 1987-2009) to calculate the premiums paid by active employees, retirees, and COBRA enrollees from 1987 to 2002.

For 2007, premiums paid by private and state and local employees and retirees were estimated using MEPS-IC data projected using the 2009 Kaiser/HRET Annual Employer Health Benefits Survey combined with the historical relationship between employee/retiree paid and employer-paid share of employer-sponsored health insurance (Kaiser, 1992-2013). The U.S. OPM's also supplied data for premiums paid by Federal employees and retirees.

Premiums for individually purchased PHI were estimated using CE data for 1987 to 2010. The sum of these premium payments made by individuals is included with the household sector. An adjustment was made to account for the COBRA subsidy paid by the Federal government based upon data from the IRS.<sup>8</sup>

### Medicare

Medicare is one of the major public health insurers in the U.S. and covers people aged 65 and over, people under the age of 65 with certain disabilities, and people of all ages with ESRD. The Medicare program is financed by several different mechanisms. The HI trust fund is primarily financed through Federal Insurance Contributions Act taxes on covered payroll, plus interest income, taxation of benefits, voluntary premiums and other revenues. The SMI trust fund is financed through general revenues, premiums (Part B, Part D, and Medicare Premium Buy-in Programs by Medicaid), receipts from states for phased-down Medicaid contribution), state phase-down payments, and interest income.

In the sponsor analysis, an increase in the assets of the Medicare HI trust fund allow 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 revenue. 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.

The Medicare 'source of funding' estimates are disaggregated to reflect these different financing sources in the sponsor analysis. The HI payroll taxes paid by employers, along with one-half of the self-employed payroll taxes, are subtracted from traditional Medicare estimates and assigned to the businesses and federal and state/local governments in which employers or self-employed individuals operate. 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 all moved to the household category (Social Security Administration and CMS, 2012)

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<sup>7</sup> In general, COBRA requires certain employers to continue to offer former employees and their dependents health insurance coverage at a cost of 102 percent of the employer premium for a period of 18 months.

<sup>8</sup> As part of the American Recovery and Reinvestment Act of 2009 (ARRA) persons that lost their jobs involuntarily had a temporary reduction in their COBRA premiums. The period of coverage was initially for 9 months and then extended to 15 months as the result of the COBRA coverage Extension Act of 2009. If a person or family member was involuntarily terminated during the period from September 1, 2008 to May 31, 2010 the household may be eligible to pay a reduced premium. Eligible individuals pay only 35 percent of the COBRA premium under their plan for up to 15 months. Data for the estimates of the amount of COBRA subsidy was estimates data from the U.S. Department of the Treasury: Interim Report to The Congress on COBRA Premium Assistance. June 2010

Medicare estimates are further adjusted by moving the spending for the Medicare Premium Buy-in programs (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 contribution for Medicare Part D to the state and local government category. Additionally, RDS payments are removed from the employer (private and state and local government) share of PHI and are added to the federal government Medicare spending category. The remaining Medicare federal government 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**

Medicaid is combined federal and state program for the poor and medically indigent. Estimates of federal and state spending are moved into the appropriate government category including the spending for the Medicare Premiums Buy-ins Program.

### **Other Third Party Payers and Programs**

Federal government sponsors include DOD, VA, IHS, SAMSHA, other federal programs, public health activities, federal share of MCH, vocational rehabilitation, CHIP, Workers' Compensation, COBRA subsidy payments, small business tax credits, ERRP and federal investment in research, structures and equipment. The state and local government sponsors include general assistance, school health, other state and local programs, the state share of MCH, vocational rehabilitation, CHIP, public health activities receipts from states for phased-down Medicaid contribution for Medicare Part D, and state and local investment in research, structures and equipment.

For the sponsor analysis, worksite health care, state and local workers' compensation, and temporary disability insurance are classified into the private business sponsor category.<sup>9</sup> Finally, the sponsor category of other private revenues consists of private business investment in research, structures, and equipment.

### ***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 spending represents health care expenditures by employers on behalf of their employees, including the employer contribution for employer-sponsored health insurance premiums (excluding Medicare RDS, small business tax credits and ERRP) and Medicare HI trust fund payroll taxes (including half of total self-employed payroll taxes). The business's portion of payroll taxes is included in the private business sector because they are dedicated taxes that are earmarked for health care spending. In addition, private business includes payments for state workers compensation, temporary disability insurance, and worksite health care.

#### **Households**

Household spending represents expenditures by individuals to provide or purchase health care for themselves or family members. Household spending includes the employee share of employer-sponsored health insurance premiums minus COBRA subsidies, and Medicare 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 SMI trust funds and

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<sup>9</sup> A small expenditure for workers' compensation covering Federal employees is the financial responsibility of the Federal government as an employer. In both the NHE source of funding and sponsor presentation, workers' compensation for Federal employers is in the Federal category.



PCIP are also included with households. OOP spending for co-payments, deductibles, and services not covered by health insurance are allocated to the household.

### **Other Private Revenues**

Other private revenues include all other private sponsors of health care other than private business and households. The most common source of other private funds is philanthropy. 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 HHAs, 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.

### **State and Local Government**

State and local government's 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 health insurance premiums (excluding Medicare RDS and ERRP and Medicare 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 (including Medicare Premium Buy-in Programs by Medicaid) and receipts from states for phased-down Medicaid contribution for Medicare Part D plus other state and local programs such as general assistance, school health, MCH, vocational rehabilitation, CHIP, public health activities, other state and local programs, state and local investment in research, structures and equipment).

### **Federal Government**

The federal government finances many federal health care programs from general revenues. Also as an employer, the federal government pays employer-sponsored health insurance premiums and Medicare HI trust fund payroll taxes for federal employees. Medicare estimates in the sponsor analysis are payments from general revenues and, therefore, exclude Medicare hospital trust fund payroll taxes, Medicare SMI Premiums, and Medicare Premium Buy-in Programs by Medicaid, receipts from states for phased-down Medicaid contribution, taxes paid on social security benefits, and include Retiree Drug Subsidy payments to private business and state and local government. Also included in the federal government sponsor estimate is the federal share of the Medicaid program, including the federal portion of Medicare Premium Buy-in Programs by Medicaid, and payments for DOD, VA, IHS, SAMHSA, other federal programs, public Health Activities, federal share of MCH, vocational rehabilitation, CHIP, Workers' Compensation, COBRA subsidy payments, small business tax credits ERRP and federal investment in research, structures and equipment) federal.

## **Health Insurance Enrollment and the Uninsured**

The enrollment estimates in the NHEA cover total PHI (including individually-purchased and employer-sponsored plans), Medicare, Medicaid, 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). Estimates of total PHI enrollment are available for 1960-2012, Medicaid and Medicare for the length of their respective programs, and all other estimates (including the more detailed estimates individually-purchased and employer-sponsored insurance) for 1987-2012.

### **Total Personal Health Insurance Enrollment**

Total PHI enrollment consists of enrollment in employer-sponsored health insurance plans, individually-purchased plans (group and non-group), 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. For 1987-2009, total PHI estimates were developed from the State Health Access Data Assistance Center (SHADAC) enhanced CPS coverage estimates adjusted by NHSG to reflect the over count of individually-purchased health insurance enrollment in the CPS. The enrollment for 2010, 2011, and 2012 was estimated using growth rates from the Health Interview Survey (HIS). The 1960-1986 estimates are based on data from the HIS, Health Insurance Association of America and analysis performed by Marjorie Carroll and Ross H. Arnett, III.

### Employer Sponsored Insurance

Employer sponsored insurance (ESI) is purchased through an employer, union or by a self-employed individual. The enrollment for 1996-2009 was estimated using the levels from the enhanced CPS (SHADAC), 2010, 2011, and 2012 were estimated using data from HIS. For 1987-1995, ESI enrollment was estimated using the growth in the number policies for employer-purchased health insurance from the CE applied to the enhanced CPS (SHADAC) levels in 1996.

### Individually-Purchased Health Insurance

**Medigap:** These 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 age 65 or older and to some individuals under age 65 with certain disabilities, and people of all ages with ESRD. Enrollment for 2011 and 2012 was estimating using the growth from the CE. Data from the Medicare Current Beneficiary Survey (MCBS) Access and Cost files was used to estimate the levels for the period 1992-2011. Data from the National Association of Insurance Commissioners estimates was used to estimate 2012. The number of covered individuals for the period 1987-1991 was estimated using the growth from the number policies for individually-purchased health insurance from the (CE applied to MCBS levels in 1991.

**Other PHI:** This category includes insurance purchased on the private market that is not associated with an individuals' employer or a Medigap plan. Examples of individually-purchased insurance include group plans purchased through AARP or other associations and non-group plans. The 2010, 2011, and 2012 estimate is based on growth rates. For 1996-2009, enrollment was estimated using the levels from the MEP-HC survey, while 1987-1995 was estimated using the growth in the number of covered lives for individually-purchased health insurance from the CE applied to the MEPS-HC level in 1995.

### Medicare

Medicare is a health insurance program for people age 65 or older, people under age 65 with certain disabilities, and people of all ages with ESRD. Medicare enrollment is developed using data from the Medicare Enrollment Database. This data represents all areas, and unduplicated enrollment in Part A and/or Part B. An adjustment is made to create U.S. only enrollment figures.

### Medicaid

Medicaid is a health insurance programs for certain low-income individuals and families who fit into an eligibility group that is recognized by federal and state law. The enrollment estimates for Medicaid from 1999 to 2010 are from the Medicaid Statistical Information System (MSIS); the 2010, 2011, and 2012 estimates were projected by the CMS OACT. 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).

### Other Public

Other public programs include health insurance coverage provided by the VA and the DOD. Enrollment for other public programs for 1987-2010 was estimated using the levels from the enhanced CPS (SHADAC) and growth from CPS for 2011 and 2012.

### Uninsured

Persons not covered by health insurance, including individuals using the IHS 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 enhanced CPS (SHADAC), adjusted for an estimate of the Medicaid undercount, and growth from HIS for 2010, 2011, and 2012.

## Deflating Personal Health Care Expenditures

Health care spending has grown more rapidly than spending in most other sectors of the economy in recent U.S. history. Increased spending reflects increases in technological developments, changes in the age and sex 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(es) 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 NHE 2011, 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 GDP Deflator, as measured by the 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 for the NHEA is to deflate health care expenditures by a measure of medical specific price inflation. For PHC spending, this would involve directly deflating expenditures by price indexes associated with the services and goods provided; for non-PHC spending this would involve 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 age and sex composition of the population, 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 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 reflect price changes only, and 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 7 provides the detailed price series that are used for each category of spending. More details are provided in NHEA: Methodology Paper, 2010.<sup>10</sup> Unlike the 2010 method, which used an implicit deflator approach, the current PHC deflator relies on a chain-weighted approach.

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<sup>10</sup> “NHEA: Methodology Paper, 2010” <http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/dsm-10.pdf>

In order to estimate a non-PHC deflator, a chain-weighted price index of the subcomponents of non-PHC has been developed. This index weights together the detailed price series for each non-PHC component, at the maximum level of detail available. Exhibit 8 provides the major non-PHC expenditure categories and their respective deflators.

The price indexes developed by the CMS OACT are a more appropriate measure of the medical price inflation associated with expenditures reported in the NHE than two other available indexes—the BLS CPI 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 OOP expenditures, Medicare Part B payments, and PHI payments to providers for medical benefits. 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. For example, hospital services represents only 22 percent of medical care consumption spending in the CPI from 2007-2008, while overall hospital spending represents 36 percent of PHC spending in the NHEA over the same period. Therefore, hospital care is under-valued for deflating overall PHC. Additionally, the medical care component of the personal consumption fixed-weight price index includes only portions of public expenditures when its weights are determined because care provided by government facilities is not included in the PCE.

The BLS 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 7 lists the price series assigned to each component of PHC expenditures used in the NHE2012 estimates.

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### Exhibit 7: Price Proxies for the Personal Health Care expenditure Price Index

Industry/Commodity or Service	Price proxy (NHE 12)
<b>Personal health care</b>	
<b>Hospital care</b>	PPI, hospitals
<b>Physician and clinical services</b>	Composite Index: PPI, offices of physicians and PPI, medical and diagnostic laboratories
<b>Other professional services</b>	CPI, services by other medical professionals
<b>Dental services</b>	CPI, dental services
<b>Other health, residential, and personal care</b>	Composite Index: <ul style="list-style-type: none"> <li>• CPI physician services (used for other health care)</li> <li>• CPI care of invalids and elderly at home (used for home and community-based waivers),</li> <li>• CPI All Items (used for ambulance services)</li> <li>• PPI residential mental retardation facilities( used for residential facilities)</li> </ul>
<b>Home health care</b>	PPI, home health care services
<b>Nursing care facilities and continuing care retirement communities</b>	PPI, nursing care facilities
<b>Prescription drugs</b>	CPI, prescription drugs
<b>Other non-durable medical products</b>	CPI, non-prescription drugs (new for 2010)
<b>Durable medical equipment</b>	Composite Index: CPI, eyeglasses and eye care and CPI, medical equipment and supplies (new for 2010)

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 2005.

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

Exhibit 8 lists the price series assigned to each component of non-PHC expenditures used in the NHE 2012 estimates.

### Exhibit 8: Price proxies for the non-Personal Health Care Expenditure Price Index

Industry/Commodity or Service	Price proxy (NHE 12)
<b>Non Personal health care</b>	
<b>Government Administration</b>	Composite index of wages, benefits, professional fees, claims/FI services, office rent, and other expenses for six government programs
<b>Net Cost of Insurance</b>	Composite index of compensation, capital, taxes, reserves/gains/losses, and other expenses for five classes of insurance
<b>Government Public Health Activities</b>	Composite index of federal, state, and local government consumption
<b>Research</b>	NIH Biomedical Research and Development Price Index
<b>Structures &amp; Equipment</b>	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: Details are provided below.

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).<sup>11</sup>

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-weights 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, DOD, VA, Medicaid, 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 appropriate proxies for price change, such as federal civilian pay, employment cost indexes for state and local government workers and other relevant occupations and appropriate PPI and CPI.

### **Net Cost of Health Insurance:**

The net cost of health insurance input price deflator is a chain-weighted composite index of input costs and price proxies engineered to directly measure the price growth associated with the difference between health insurance premiums earned and benefits incurred. This difference includes cost growth for administrative services, taxes, changes to reserves, and underwriting gains or losses. These costs are added to the benefits paid to account for the total cost of providing health care benefits to the enrollee or beneficiary of the plan. The types of PHI for which net cost is estimated include: fully insured group/commercial insurance, individually purchased or non-group insurance, self-insured insurance, and the health portion of property and casualty insurance. Also included in the net cost of insurance are Medicare Advantage and stand-alone Medicare Part D plans, Medicaid managed care plans, CHIP managed care plans, the majority of worker's compensation insurance, and, in 2010, the pre-existing condition insurance plan.

For each type of insurance, estimates are developed for five general components of net cost that sum to the total net cost of health insurance. These components include: compensation of the employees that are administering the insurance, capital costs, taxes, 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 ECIs, PPIs, or deflators produced as part of the GDP accounts, are weighted together by the respective input costs for three of these general components. All changes in taxes or change to reserves or underwriting gains or losses are treated as price changes. These various price changes are then combined to create a composite net cost of health insurance 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 roughly 80 percent of the index. State and local public health expenditures are deflated using the price index for gross state and local government consumption expenditure (GCE) for health from the National

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<sup>11</sup> The input price indexes serve as a proxy for the output price increase associated with the production of these services since a specific output price index is unavailable. This approach implicitly assumes that changes in productivity (and in some cases margins) average to roughly zero such that the input price equals the output price.

Income and Product Accounts produced by the BEA. Federal public health expenditures are deflated using an input cost index that weights together the input costs of Health Resources and Services Administration, Food and Drug Administration, and CDC and appropriate price proxies from the BLS. Together these three organizations account for over 75% 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*; from *Table 5.5.4. Price Indexes for Private Fixed Investment in Equipment by Type*; and from *Table 5.6.4 Price Indexes for Private Fixed Investments in Intellectual Property Products by Type*.

### References

- Agency for Healthcare Research and Quality: *Medical Expenditure Panel Survey-Insurance Component*. 1996-2006 and 2008-2012. [http://www.meps.ahrq.gov/mepsweb/survey\\_comp/Insurance.jsp](http://www.meps.ahrq.gov/mepsweb/survey_comp/Insurance.jsp)
- Agency for Healthcare Research and Quality: *Medical Expenditure Panel Survey-Household Component*. 1996-2012. [http://www.meps.ahrq.gov/mepsweb/survey\\_comp/household.jsp](http://www.meps.ahrq.gov/mepsweb/survey_comp/household.jsp)
- A.M. Best *A.M. Best's Financial Suite, Statement Products*. Oldwick, NJ. 2001-2012. <http://www.ambest.com/sales/bironlineh/default.asp>. <http://www.ambest.com/sales/Statement/default.asp>
- American Association of Health Plans (formerly Group Health Association of America, Inc.): Annual Publication. Washington, D.C. 1984-1994.
- American Dental Association: *Annual Survey of Dentists*. 1980-2000.
- American Hospital Association, *Annual Survey Database*, Chicago(IL):Heath Forum: 2013.
- American Hospital Association: *Annual Survey of Hospitals*. 1980-2007.
- American Hospital Association: *National Hospital Indicator Survey*. 1999-2006.
- American Hospital Association: *National Hospital Panel Survey*. 1963-1999.
- American Medical Association: *Socio-economic Monitoring System*. 1984-2001.
- Bureau of Economic Analysis, Department of Commerce: *Benchmark Input/Output Tables*. Washington D.C. [http://www.bea.gov/industry/index.htm#benchmark\\_io](http://www.bea.gov/industry/index.htm#benchmark_io).
- Bureau of Economic Analysis, Department of Commerce: *National Income and Product Accounts*. Washington D.C., 1992-2009. <http://www.bea.gov/iTable/iTable.cfm?ReqID=9&step=1>.
- Bureau of Labor Statistics, Department of Labor: *Current Employment Statistics*. Washington D.C., 1972-2011. <http://www.bls.gov/ces/>
- Bureau of Labor Statistics, Department of Labor: *Consumer Price Index*. 1960-2012. <http://www.bls.gov/cpi/>
- Bureau of Labor Statistics, Department of Labor: *Producer Price Index*. 1960-2012. <http://www.bls.gov/ppi/>
- Bureau of Labor Statistics, Department of Labor: *Employer Costs for Employee Compensation, National Compensation Survey*. 1980-2012. <http://www.bls.gov/ncs/>
- Bureau of Labor Statistics, Department of Labor: *Consumer Expenditure integrated survey*. 1960-61, 1972-73, and 1984-2011. <http://www.bls.gov/cex/>
- Carroll, M.S and Arnett III, R.H: Private Health Insurance Plans in 1978 and 1979: A Review of Coverage, Enrollment, and Financial Experience. Health Care Financing Review, September 1981.
- Centers for Medicare & Medicaid Services: *Skilled Nursing Facility Input Price Index*. [http://www.cms.hhs.gov/MedicareProgramRatesStats/04\\_MarketBasketData.asp#TopOfPage](http://www.cms.hhs.gov/MedicareProgramRatesStats/04_MarketBasketData.asp#TopOfPage). October 2011.
- Cuckler, Gigi, Martin, Anne, Whittle, Lekha, Heffler, Stephen, Sisko, Andrea, Lassman, Dave, and Benson, Joseph. "Health Spending by State of Residence, 1991-2009", Medicare & Medicaid Research Review, 2011: Vol. 1, Num. 4. December, 2011. [http://www.cms.gov/MMRR/Downloads/MMRR2011\\_001\\_04\\_A03-.pdf](http://www.cms.gov/MMRR/Downloads/MMRR2011_001_04_A03-.pdf)
- Cuckler, Gigi, Sisko, Andrea, Keehan, Sean, Smith, Sheila, Madison, Andrew, Poisal, John, Wolfe, Christian, Lizonitz, Joseph, and Stone, Devin. "National Health Expenditure Projections, 2012 – 22: Slow Growth Until Coverage Expands And Economy Improves", Health Affairs 32(10) 1820-1831. Health



## National Health Expenditure Accounts Methodology Paper, 2012

---

Affairs web exclusive October, 2013. Cylus, Jonathan, Hartman, Micah, Washington, Benjamin, Andrews, Kimberly, Catlin, Aaron: *Pronounced Gender and Age Differences are Evident in Personal Health Care Spending Per Person*. *Health Affairs* 30(1) 153-160. January 2011.

Davern, Michael, Jacob Klerman, Jeanette Ziegenfuss, Victoria Lynch, and George Greenberg. 2009. "A Partially Corrected Estimate of Medicaid Enrollment and Uninsurance: Results from an Imputational Model developed off Linked Survey and Administrative Data." *Journal of Economic and Social Measurement*. 34(4):219-240

Davern, Michael, Jacob Alex Klerman, David Baugh, Kathleen Call, and George Greenberg. 2009. "An Examination of the Medicaid Undercount in the Current Population Survey (CPS): Preliminary Results from Record Linking." *Health Services Research*. 44(23) 965-87.--

DeNavas, Carmen, Proctor, Bernadette, and Smith, Jessica: *Income, Poverty, and Health Insurance Coverage in the U.S.: 2012*. U.S. Department of Commerce, U.S. Census Bureau. <http://www.census.gov/prod/2012pubs/p60-243.pdf>

Department of Defense: *TRICARE Management Activity (TMA)*, Resource Management (RM), Programs, Budget and Execution Office (PB&E), 1981-2011.

Department of Defense: *TRICARE Management Activity (TMA)-Aurora*, Data Quality and Functional Proponency, 1980-2011.

Department of Defense: *Unpublished data from the Medical Expense and Performance Reporting System for Fixed Military Medical and Dental Treatment Facilities (MEPRS)*, 2006-2011.

Department of the Treasury: Financial Management Service, *Monthly Treasury Statements of Receipts and Outlays of the U.S. Government*, 1960-2011.

Department of Veterans Affairs: Allocation Resource Center, Unpublished data, 1999-2012.

Department of Veterans Affairs: Office of Budget, *Fiscal Year Budget Submissions*, Summary and Medical Programs and Information Technology, 1960-2013.

Executive Office of the President: *Budget of the U.S.*. Office of Management and Budget. Washington, D.C. U.S. Government Printing Office, 1960-2013.

Executive Office of the President: *Standard Industrial Classification Manual*, 1987. NTIS Pub. No. PB 87-100012. Office of Management and Budget. Washington, D. C. National Technical Information Service, 1987.

Executive Office of the President: *North America Industrial Classification System*, 1997. Office of Management and Budget. Washington, D. C.

*Federal Register*. Medicare Program; Prospective Payment System and Consolidated Billing for Skilled Nursing Facilities for FY2008; Proposed Rule. Vol 72, No 86, 25541-25555. Office of the Federal Register, National Archives and Records Administration. Washington, D.C. U.S. Government Printing office, May 4, 2007.

Ford, Ina Kay., Ginsburg, Daniel H.: *Medical Care Output and Productivity, Medical Care in the Consumer Price Index*. University of Chicago Press. January 2001.

Freeman, V.: *Income and expenditures in voluntary public health nursing agencies*, 1967. *Nursing Outlook* 17:40-43, Mar. 1969.

Greenberg, L.: *Estimates of Philanthropic Spending for Health Care: Final Report*. HCFA Contract No. 500-89-0400. Prepared for the Health Care Financing Administration. Washington, D.C. Applied Systems Technologies, Inc., Feb. 1990.

## National Health Expenditure Accounts Methodology Paper, 2012

---

Hartman, Micah, Martin, Anne,, Whittle, Lekha, and Catlin, Aaron: National Health Spending in 2012: Rate of Health Spending Growth Remained Low for the Fourth Straight Year. *Health Affairs* 32(1). January 2014

H. Hughes Medical Institute: National Health Council information on voluntary health agencies' support of medical research, 2009. <http://www.hhmi.org>.

Health Care Financing Administration, Bureau of Data Management and Strategy: Tabulations from Medicare's home health cost reports, 1974-1976 and 1981-1984.

Health Insurance Association of America: Source Book of Health Insurance Data. Washington, D.C. 1989-2001.

HIAA (1993), *Source Book of Health Insurance Data*, Washington, D.C.: Health Insurance Association of America, Table 2.5.

IMS Health Inc.: National Prescription Audit and the Method of Payment Report. Plymouth Meeting, PA. 1992-2011.

Internal Revenue Service, Department of the Treasury: Data tabulated from samples of business income tax returns, 1960-1987.

Interstudy Publications, HMO Financial Analyzer, St. Paul, MN 55114. (1994-2002). <http://hl-isy.com/hpda>

Kaiser Family Foundation and Health Research and Educational Trust: Employer Health Benefits, Annual Survey. Washington, DC. 1992-2013.

Klemm, John D., Medicaid: A Brief History, Health Care Financing Review, Fall 2000 (22)1 105-112 <https://www.cms.gov/HealthCareFinancingReview/Downloads/00fallpg105.pdf> Kline and Company, Inc, Nonprescription Drugs USA, Little Falls, New Jersey. 1960-2011.

McDonnell, P., Guttenberg, A., Greenberg, L., and Arnett, R.: Self-insured health plans. Health Care Financing Review. Vol. 8, No. 2. HCFA Pub. No. 03226. Office of Research and Demonstrations, Health Care Financing Administration. Washington. U.S. Government Printing Office, February 1987.

Mercer, William, M: Mercer/Foster Higgins National Survey of Employer Health Plans. New York, NY. 1993-2011.

National Academy of Social Insurance. Workers' Compensation: Benefits, Coverage, and Costs, 2010. Washington, D.C. 2012

National Association of Blue Cross and Blue Shield: Personal communication. Chicago. 1960-2005.

National Center for Educational Statistics, Department of Education: Digest of Education Statistics. Office of Educational Research and Improvement. Washington D.C. U.S. Government Printing Office, 2008.

National Center for Health Services Research, Department of Health and Human Services: National Medical Care and Expenditure Survey, 1977

National Center for Health Services Research, Department of Health and Human Services: National Medical Care Expenditure Survey, 1987.

National Center for Health Statistics, Department of Health and Human Services: National Health Interview Survey, 1966-2011.

National Center for Health Statistics, Department of Health and Human Services: National Medical Care Utilization and Expenditure Survey, 1980.

National Center for Health Statistics, Department of Health and Human Services: National Nursing Home Survey, 1972, 1977, 1985, 1995, 1997, 1999 and 2004.

National Institutes of Health: NIH Data Book 1994. NIH Pub. No. 95-1261. Bethesda, MD. March 1995.

## National Health Expenditure Accounts Methodology Paper, 2012

---

National Science Foundation, Division of Science Resources Statistics. July 2012. Federal Funds for Research and Development: Fiscal Years 2010-12. Detailed Statistical Tables NSF 12-318. Arlington, VA. Available at [http://www.nsf.gov/statistics/nsf13326/content.cfm?pub\\_id=4243&id=2](http://www.nsf.gov/statistics/nsf13326/content.cfm?pub_id=4243&id=2).

National Science Foundation, Division of Science Resources Statistics. July 2011. Higher Education Research and Development(HERD): Fiscal Year 2011. Detailed Statistical Tables NSF 13-305. Arlington, VA. Available at <http://www.nsf.gov/statistics/srvyherd/>

National Underwriter Company: Argus Chart of Health Insurance. New York. National Underwriter Company, 1960-96.

Public Health Foundation: Public Health Agencies: Expenditures and Sources of Funds. Washington, D.C. 1977-89.

Research Triangle Institute: Benchmark Studies of the National Health Accounts. HCFA contract No. 500-86-0042. Prepared for the Health Care Financing Administration. Research Triangle Park, N. Car. Mar. 1987.

State Health Access Data Assistance Center. 2009. "SHADAC-Enhanced Current Population Survey Health Insurance Coverage Estimates: A Summary of Historical Adjustments." Minneapolis MN: University of Minnesota. [http://www.shadac.org/files/shadac/publications/TechBrief\\_CPSEnhanced.pdf](http://www.shadac.org/files/shadac/publications/TechBrief_CPSEnhanced.pdf)

U.S. Census Bureau, Department of Commerce: *2007 Economic Census*. Washington D.C. 2007. <http://www.census.gov/econ/census07/>

U.S. Census Bureau, Department of Commerce: *2002 Economic Census*. Washington D.C. 2002. <http://www.census.gov/econ/census02/>

U.S. Census Bureau, Department of Commerce: *1997 Economic Census*. Washington D.C. 1997. <http://www.census.gov/epcd/www/econ97.html>

U.S. Census Bureau, Department of Commerce: Census of Service Industries. Washington D.C., U.S. Government Printing Office. 1977, 1982, 1987 and 1992.

U.S. Census Bureau, Department of Commerce: *Census of Retail Trade*, Merchandise Line Sales, 1982, 1987, and 1992

U.S. Census Bureau, Department of Commerce: Census of Governments. Washington D.C. U.S. Government Printing Office, 1957, 1962, 1967, 1972, 1977, 1982, 1987, 1992, 1997, 2002, and 2007. <http://www.census.gov/govs/cog/>.

U.S. Census Bureau, Department of Commerce: Current Construction Reports—Value of New Construction Put in Place. Washington, D.C., U.S. <http://www.census.gov/econ/overview/co0300.html>.

U.S. Census Bureau. Department of Commerce: *Annual Survey of State and Local Government Finances*. Washington D.C. <http://www.census.gov/econ/overview/go0400.html>.

U.S. Census Bureau. Department of Commerce. Services Annual Survey. Washington D.C. <http://www.census.gov/services/index.html>.

U.S. Census Bureau, Department of Commerce. *Annual Capital Expenditures Survey*. Washington D.C., <http://www.census.gov/csd/ace/>.

U.S. Census Bureau. Department of Commerce. Quarterly Services Survey. Washington D.C. <http://www.census.gov/services/index.html>.

U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services. Washington D.C., Medigap Overview, <http://www.cms.gov/Medicare/Health-Plans/Medigap/index.html>

## National Health Expenditure Accounts Methodology Paper, 2012

---

U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services, Medicare Beneficiary Survey, Washington D.C. <http://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS/index.html>

U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services, Washington D.C., <http://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Data-and-Systems/MSIS/Medicaid-Statistical-Information-System.html>

Visiting Nurse Association of America: *Survey of Visiting Nurse Association of America members*. 1988.