National Health Expenditures Accounts: Definitions, Sources, and Methods, 2009

Introduction

U.S. National Health Expenditure Accounts

Since 1964, the United States Department of Health and Human Services[1] has published an annual series of data presenting total national health expenditures. 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 United States, as well as the dollar amount invested in medical sector structures and equipment and non-commercial research to procure health services in the future.

The NHEA are generally compatible with a production-based accounting structure such as the 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.[2] Using an "expenditures approach" to national economic accounting, the NHEA identify 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 National Health Expenditure Accounts 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 Accounts are multidimensional, encompassing not only expenditures for medical goods and services, but also the payers that finance these expenditures. Third, the Accounts are consistent because they apply a common set of definitions that allow comparisons among categories and over time.

Exhibit 1 highlights the accounting matrix used in the U.S. to classify health care spending. The estimates through 2009 have undergone a comprehensive benchmark revision spanning the entire time series that is discussed in more detail at http://www.cms.gov/NationalHealthExpendData/Downloads/benchmark2009.pdf. In 2009, $2.5 trillion was spent on health care services and products, over 60 percent of which purchased hospital care, physician and clinical services, and retail prescription drugs. Private health insurance paid for 32.2 percent, out-of-pocket sources for 12.0 percent, and other private sources for 7.3 percent. The two largest government health care programs, Medicare and Medicaid, purchased $877.2 billion of health care goods and services in 2009, accounting for 38.3 percent of total health care spending. (Martin et al. 2010).

[1] The Cabinet-level Department of Health, Education and Welfare was created under President Eisenhower, officially coming into existence 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, officially arriving on May 4, 1980. http://www.hhs.gov/about/hhshist.html

[2] For a more complete discussion of a reconciliation between the National Health Expenditure Accounts and the National Income and Product Accounts please visit: http://www.bea.gov/scb/pdf/2010/09%20September/0910_healthcare.pdf

Exhibit 1: National Health Expenditures by Type of Expenditure and Program: Calendar Year 2009

	National Health Expenditures																	
	Health Consumption Expenditures															Investment		
	Personal Health Care																	
		Professional Services							Retail Outlet Sales of Medical Products			Administration and Net Cost of Private Health Insurance						
		Physician, Clinics and Other Professionals								Other Medical Products		Government Administration						
	Total National Health Expenditures	Hospital Care	Physician and Clinical Services	Other Professional Services	Dental Services	Other Health, Residential, and Personal Care	Home Health	Nursing Care Facilities and Continuing Care 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	
																	Structures	Equipment
Total National Health Expenditures	2,486,293	759,074	505,888	66,781	102,222	122,623	68,264	136,971	249,904	34,878	43,260	9,529	20,283	133,177	77,213	45,323	48,972	61,934
Out of pocket	299,345	24,417	47,943	17,742	42,480	8,918	6,015	39,812	52,992	18,577	40,450							
Health Insurance	1,767,416	669,348	407,336	43,084	59,258	76,780	59,746	87,465	193,325	15,805	2,809	8,491	19,943	124,027				
Private Health Insurance	801,190	265,894	237,674	24,718	49,960	5,814	5,020	10,549	108,566	3,970	–			89,025				
Medicare	502,289	220,382	109,434	13,667	290	4,588	29,835	27,991	54,818	7,446	2,809		6,956	24,073				
Medicaid (Title XIX)	373,941	136,102	39,947	4,529	7,147	64,403	24,291	44,956	19,981	4,315	–	8,270	9,927	10,074				
Federal	246,983	90,103	27,593	3,073	4,839	42,552	15,780	30,041	13,316	2,928	–		9,927	6,831				
State and Local	126,957	45,999	12,353	1,456	2,308	21,850	8,511	14,915	6,665	1,386	–	8,270		3,243				
Total CHIP (Title XIX and Title XXI)	11,118	3,128	2,899	170	757	948	15	4	1,522	74	–	221	525	855				
Federal	7,822	2,161	2,016	120	539	706	11	3	1,094	54	–		525	594				
State and Local	3,296	967	883	50	218	242	4	1	429	20	–	221		261				
Department of Defense	36,499	15,214	11,887	–	1,027	–	–	–	5,962	–	–		2,409					
Department of Veterans' Affairs	42,379	28,629	5,496	–	77	1,028	584	3,964	2,476	–	–		125					
Other Third Party Payers and Programs	186,090	65,309	50,609	5,956	484	36,925	2,503	9,694	3,587	496	0	1,038	340	9,150				
Worksite Health Care	4,443	–	–	–	–	4,443	–	–	–	–	–							
Other Private Revenues	83,816	31,210	30,250	3,877	79	10,594	984	6,822	–	–	–							
Indian Health Services	3,156	1,597	908	–	181	367	–	–	21	6	–		76					
Workers' Compensation	39,637	12,413	14,639	1,314	–	–	–	–	900	320	–	845	56	9,150				
General Assistance	7,124	2,107	1,002	59	195	609	179	333	2,596	44	0							
Maternal/Child Health	3,035	236	162	698	30	1,620	–	–	64	39	–	182	3					
Federal	582	50	65	189	11	224	–	–	31	12								
State and Local	2,268	186	97	510	19	1,396	–	–	34	27								
Vocational Rehabilitation	506	110	260	–	–	–	–	–	–	86	–	11	39					
Federal	354	85	202	–	–	–	–	–	–	67								
State and Local	102	24	58	–	–	–	–	–	–	19								
Other Federal Programs	7,274	1,358	2,335	–	–	3,479	–	–	–	–	–		102					
SAMHSA	3,250	162	988	–	–	2,037	–	–	–	–	–		62					
Other State and Local Programs	29,389	16,116	64	8	–	9,315	1,340	2,538	5	2	–							
School Health	4,460	–	–	–	–	4,460	–	–	–	–	–							
Public Health Activity	77,213														77,213			
Federal	11,525														11,525			
State and Local	65,688														65,688			
Investment	156,229																	
Research	45,323															45,323		
Private	4,121															4,121		
Federal	35,493															35,493		
State and Local	5,709															5,709		
Structures & Equipment	110,906																48,972	61,934
Private	88,460																41,336	47,124
Federal	8,772																1,731	7,041
State and Local	13,674																5,905	7,769

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

Health Expenditure Accounts and the Health Economy

The NHEA are a representation of the economic activity within the health sector, which is one part of the national economy. The classifications used are those that are central to the financing and provision of health care. They form a system for understanding changes in the structure of the health sector, particularly changes in the amount and cost of health services purchased and in the payers or programs that provide or purchase these services. Additionally, the NHEA can serve as a database for researchers to study the economic causal factors at work in the health sector. They show at a minimum the following important relationships:

- Health care expenditures as a proportion of gross domestic product. 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 devoted 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 resources devoted to the production of health care goods and services cannot be applied to the production of all other goods and services.
- Health care expenditures by payer. The NHEA bring into focus 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. This allows consideration of the relative levels of expenditures that emanate from these payers and programs.
- Changes over time in source of payments. The availability of consistent time series in the NHEA allows observation of changes in the sources of funding for health care expenditures. Many of these changes reflect technological, programmatic, and demographic trends. For example, the influence of the Medicare and Medicaid programs, legislated in 1965, in shifting funding to these programs is discernable. Additionally, the increased role of private health insurance plans and public programs, such as Medicare Advantage and Medicare Part D can also be measured.
- Health Care Expenditures for various types of goods and services. This describes the structure of the health care system by the amount of annual consumption of health care goods and services in various health care establishments in the U.S. The NHEA provide data to evaluate how much medical care is consumed at these establishments and provide data useful in analyzing the changing mix of medical services and products in the United States.
- Changes over time in expenditures for types of goods and services. Consideration of the entire matrix over time permits evaluation of policies intended to curb or redirect growth within the health care sector. Because we observe the system as a whole, it is possible to detect substitutions or countervailing effects in other services in response to changing funding sources. For example, the expansion of Medicare through the passage of MMA increased access to and expenditures for prescription drugs.
- Sponsors: While the NHEA record *direct, third party payers, and programs* that pay health care bills, estimates of spending by sponsor organizes spending according to the underlying entity financing the health care bill payer — businesses, households and governments. This structure allows an examination of burden measures that help identify pressure points behind rising health care costs and highlights the importance of the business, household, and government sectors financing of health care in the United States.[3](Cowan et al., 2005).
- Projections. Historical trends provide a basis for projections of what health care expenditures will be in the future. The projections incorporate assumptions about demographic and economic changes, as well as inflation rates and other variables. By projecting the likely consequences of current trends, these models alert us to undesirable outcomes and alternative policies to avoid them (Sisko et al., 2009).
- Specialized estimates. Specialized estimates based on the historical accounts fulfill a variety of informational needs. Health Spending by Age and Gender, (Cylus *et al., 2010)* lets policymakers focus on the differential expenditure, use, access, and financing mechanisms available to various age and gender groups. State level health accounts (CMS September 2007 and *Martin et al.,*

[3] For a more complete discussion of Health Care Expenditures by Sponsor please visit: http://www.cms.gov/NationalHealthExpendData/06_NationalHealthAccountsBusinessHouseholdGovernment.asp#TopOfPage

2007) highlight regional differences in expenditures, service mix, and financing sources, and how these change over time.

- Health care reform. Future changes to the health care system such as the mix of the insured and uninsured, distributions of all direct and third party payers and programs, consumption of health care goods and services, and other impacts of the Patient Protection and Affordable Care Act of 2010 (ACA) can all be measured through the structure of the NHEA, the only set of fully comprehensive and integrated data on health spending in the United States.

Background

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 United States. The NHEA definitions constitute the framework on which estimates of spending for health care are constructed. The framework can be considered as 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?

National Health Expenditures represents health care spending in the aggregate. 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 personal health care expenditures, government public health activity, and government administration and the net cost of private health insurance. **National Health Expenditures** (NHE) equals Health Consumption Expenditures 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 private 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 private health insurance). Finally, the category "Investment" includes spending for noncommercial biomedical research and expenditures by health care establishments on structures and equipment.

Classification

In the NHEA, the type of establishment providing the service or the type of good being sold in a retail setting determines what is included or excluded from health care spending. In the case of both goods and services, classification systems provided by the federal government are used to classify economic activity as part of the NHEA. Goods are classified according to the product codes used by the United States 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 also 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 United States. Services recognized as health care in the NHEA were those in major group 80, the SIC 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 so as not to introduce any changes solely as a result of differences in classification systems.

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
62151	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 Mental Retardation, Mental Health and Substance Abuse Facilities	Other health, residential, and personal care
62321	Residential Mental Retardation 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)
623311	Continuing Care Retirement Communities	Nursing care facilities and continuing care retirement communities
623312	Homes for the Elderly	not included in the NHEA
6239	Other Residential Care Facilities	not included in the NHEA
62399	Other Residential Care Facilities	not included in the NHEA
623990	Other Residential Care Facilities	not included in the NHEA

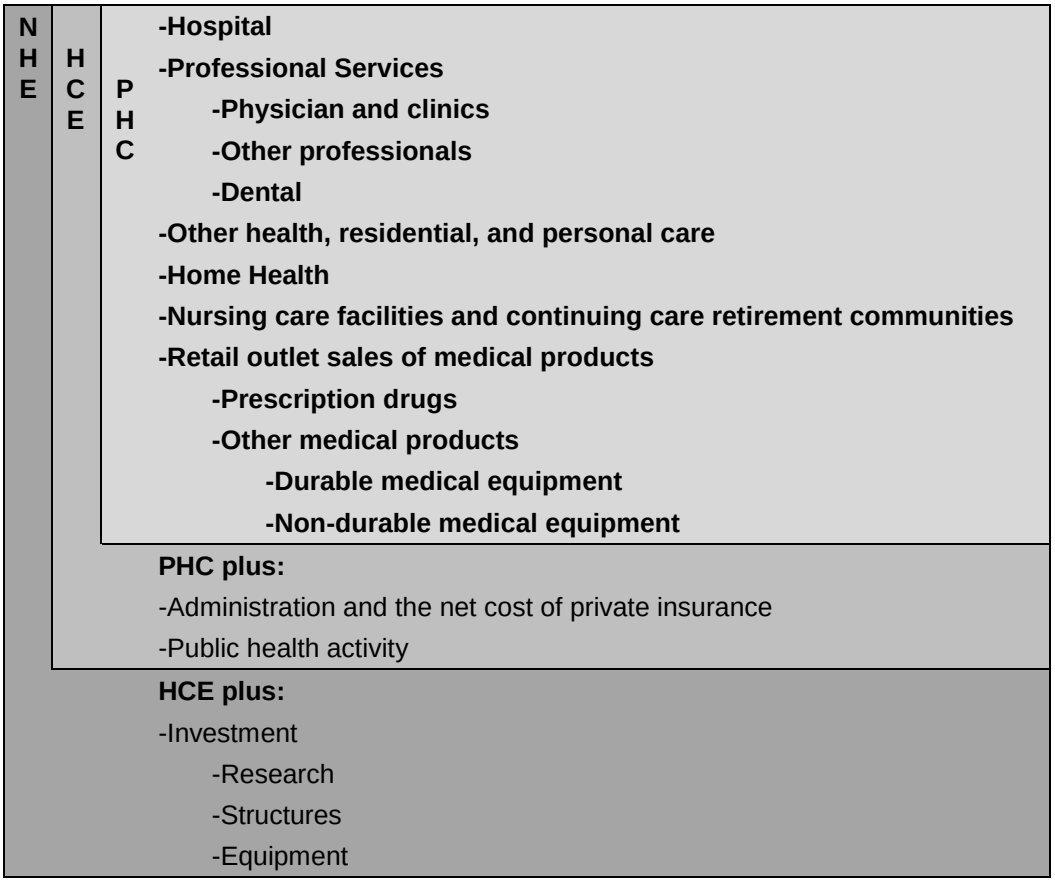
Definitions, Sources, and Methods

Personal Health Care, Goods and Services

Medical Goods and Services

Personal health care goods and services comprise 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, professional services, other health, residential, and personal care, home health, nursing care facilities and continuing care retirement communities, and the retail outlet sales of medical products (Exhibit 3). A summary of the general 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



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

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

<table>
<tr><th>Service/Good:</th><th>Total Spending</th><th>PHI</th><th>OOP</th><th>Other Private</th><th>Medicare</th><th>Medicaid</th><th>Other Third Party Payers and Programs</th></tr>
<tr><td>Hospital Care</td><td>AHA and EC</td><td colspan="3">Residual, distributed using the AHA and SAS</td><td rowspan="10">Claims Data</td><td rowspan="9">CMS-64s</td><td rowspan="10">Program or Budget Data</td></tr>
<tr><td>Physician and Clinical Services</td><td>SAS and EC</td><td colspan="3">Residual, distributed using the SAS</td></tr>
<tr><td>Other Professional Services</td><td>SAS and EC</td><td colspan="3">Residual, distributed using the SAS</td></tr>
<tr><td>Dental Services</td><td>SAS and EC</td><td colspan="3">Residual, distributed using the SAS</td></tr>
<tr><td>Other Health, Residential, and Personal Care</td><td>Sum of Payers</td><td colspan="3">SAS and other data</td></tr>
<tr><td>Home Health</td><td>SAS and EC</td><td colspan="3">Residual, distributed using the SAS</td></tr>
<tr><td>Nursing Care Facilities and Continuing Care Retirement Communities</td><td>SAS and EC</td><td colspan="3">Residual, distributed using the SAS</td></tr>
<tr><td>Prescription Drugs</td><td>IMS Health and CRT</td><td colspan="2">Residual, distributed using data from IMS Health</td><td>N/A</td></tr>
<tr><td>Durable Medical Equipment</td><td>Sum of payers and I-O</td><td colspan="3">PCE, CE, and MEPS</td><td>MAX/MSIS</td></tr>
<tr><td>Other Non-durable Medical Products</td><td>Kline & Co and I-O</td><td>N/A</td><td>N/A</td><td>N/A</td><td>N/A</td></tr>
</table>

Key of terms:
AHA = The American Hospital Association's Annual Survey of Hospitals
EC = The Census Bureau's Economic Census, available for years ending in 2 and 7
Other data = Inlcudes data from the Journal of Emergency Medical Services, Bureau of Labor Statistics, Mercer Survey for onsite helath care, and Kaiser HRET survey of Employer-Sponsored Health Benefits
SAS = The Census Bureau's Service Annual Survey
IMS Health = Data used from IMS Health's National Prescription Audit and Method of Payment Report
CRT = The 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 Reasearch'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

Hospital Care

In the NHEA, hospital care spending is defined to cover 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 United States 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, nonpatient operating revenue (receipts from cafeterias, gift shops and parking lots, for example), 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.

Total expenditures for hospital care are derived from the sum of three types of hospitals: 1) community non-federal, 2) non-community non-federal, 3) Federal hospitals.

Total community non-federal 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-Community non-nonfederal hospital spending is also benchmarked to the 2007 AHA Annual Survey and is extrapolated using the AHA annual survey for periods where the data is 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 Veterans Administration (VA) hospitals, Department of Defense (DOD) hospitals, Indian Health Service (IHS) hospitals, and other federal hospital data from federal budget documents.

NHE hospital spending by payer for programs such as Medicare, Medicaid, DOD, VA, and IHS is estimated using detailed expenditure data from the federal and state and local programs.

NHE hospital spending by payer for out-of-pocket (OOP), private health insurance (PHI), other private, and state and local subsidies is estimated as a residual by subtracting all other remaining payers from total aggregate hospital spending. The distribution between OOP, PHI, other private, and state and local subsidies is determined using payer distributions from the Service Annual Survey and AHA.

Professional Services: Physician and Clinical, Dental, and Other Professional Services

The expenditures reported in these categories are for 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" comprise the 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). "Dental Services" 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). "Other professional services" 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 the service offered by the establishment. 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. If the medical professionals are serving in the U.S. Armed Forces in stations other than military hospitals, their professional salaries are included with "other personal health care 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 that previously had formed the basis of these estimates. Data from the Service Annual Survey, compiled by the U.S. Census Bureau (1984-2009), are now used to estimate the year-to-year change in the revenue of these professional services.

Data on professional services are also available from the U.S. Census Bureau (1977, 1982, 1987, 1992, 1997, 2002, and 2007) in the Economic Census. This once-every-five-year census collects receipt/revenue information from all private service establishments with paid employees, providing benchmarks for the SAS, which is a representative sample of service establishments. Nonemployer

(businesses that have no paid employees and are subject to federal income tax) are from administrative records of the Internal Revenue Service (IRS) and are primarily comprised of sole proprietorship businesses filing IRS Form 1040, Schedule C and provided to the Census Bureau. The records are edited and published by the Census Bureau in its Nonemployer Statistics series through 2008. (http://www.census.gov/econ/nonemployer/intro.htm). The 2009 non-employer estimates are imputed from the SAS.

There are three steps to this estimating procedure. First, the SAS estimates are rearranged in historical periods from the SIC to a NAICS basis. This step aligns the NAICS structure with the historical SIC categories.[4] Second, the SAS data for 1993-1996, 1998-2001, and 2003-2006 are used to interpolate between the economic census estimates for 1992, 1997, 2002, and 2007. Finally, the 2008-2009 SAS annual change estimates are used to complete the time series.

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, 1972-2009); estimates of price inflation provided by the Consumer Price Index and Producer Price Index (Bureau of Labor Statistics, 1960-2009); as well as indirect measures such as hospital admissions, and inpatient days that require complementary professional services in previous years and direct measures of visits from Intercontinental Marketing Services (IMS).

The physician and clinical services estimates reported in the NHEA contain some modifications. 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 Department of Veterans Affairs, Department of Defense, and Indian Health Services clinics and the Coast Guard Academy Clinic are also added to physician and clinical services expenditures; SAS does not collect data for government facilities in this category.

Estimates of spending for dental services are based upon IRS data (Internal Revenue Service, 1960-87), and in later years the U.S. Census Bureau SAS and Economic Census. Additional information from the American Dental Association (1980-2000) on dental office expenditures, from the Current Employment Statistics (Bureau of Labor Statistics, 1972-2009) on employment, and from the Consumer Price Index (CPI) (Bureau of Labor Statistics, 1960-2009) on dental expenses are considered as the final estimates are prepared. 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" includes spending from service establishments of health practitioners other than physicians and dentists. Professional services include those provided by chiropractors, optometrists, physical, occupational, and speech therapists, podiatrists, and private-duty nurses, among others. These estimates are developed using data from the IRS, the U.S. Census Bureau and the Bureau of Labor Statistics. A portion of optometrist revenue presumed to represent the eyeglasses, contact lenses, and other optical goods are deducted, as that spending is already included in Durable Medical Products. The percentage of optical goods from optometric offices is estimated using product information from the Economic Census and historical data from the Service Annual Survey.

[4] The Census Bureau provided a "bridge" between the NAICS and SIC. These bridge tables can be found at the Census website — http://www.census.gov/epcd/ec97brdg/INDXNAI3.HTM#62. However, these tables clearly show that the NAICS and SIC structures are not exactly equivalent, as shown for example, in the receipts for all other outpatient care centers (NAICS 621498) and for all other outpatient care centers (SIC 8093). This sometimes occurs when segments of industries are moved from one health care industry to another. Also, the addition of specific industrial categories allows establishments to be more precisely classified (Nursing and residential care facilities, NAICS 623, now provides data on facilities such as residential mental retardation facilities and continuing care retirement facilities that were not delineated in the SIC).

Other health, residential, and personal care

Other health, residential, and personal care 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 programs provide payments for services in non-traditional settings.

Expenditures for ambulance services are estimated using the service annual survey as well information from the Journal of Emergency Medical Services (JEMS). Expenditures for care in residential care facilities are estimated using the service annual survey, internal Medicaid data for Intermediate Care Facility services for the Intellectually Disabled (ICFID), information from the Veterans Administration, and the Substance Abuse and Mental Health Services Administration.

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 cost per covered employee was extrapolated backward (to 1960) and forward through the most current year using the annual percent change in the physician services of the Consumer Price Index applied to the BLS estimate of the civilian labor force.

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 Waivers 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, 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; occupation 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, home health care agencies were classified under the SIC, which defines home health care providers (SIC 8082) to be establishments primarily engaged in providing skilled nursing or medical care in the home, under supervision of a physician, a definition 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 Census Bureau's quinquennial Economic Census of Service Industries. Information from the Census Bureau's Service Annual Survey (SAS) is used to interpolate between the Economic Census benchmark years and to extrapolate to later periods. Receipts of nonemployer 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 home health agencies are not included in the Economic Census 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 (MEDPAR) 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 by doubling Medicare spending for non-facility-based HHA services, then adding an estimate of 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 and rehabilitative services and continuous personal care services to persons requiring nursing care (NAICS 6231) and continuing care retirement communities with on-site nursing care facilities (NAICS 623311). In the 1972 and 1987 Standard Industrial Classifications, 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 Census Bureau's quinquennial Economic Census. Information from the Census Bureau's Service Annual Survey is used to interpolate between the Economic Census benchmark years and extrapolate to later periods. Estimates of expenditures for care received in State & local government facilities as well as government outlays for care provided in nursing facilities operated by the Department of Veterans Affairs (DVA) are added to the private establishment estimates detailed above.

Estimates of freestanding nursing home spending in each year prior to 1977 are based on the annual growth in total nursing home expenditures previously estimated from data collected in the 1972 and 1977 National Nursing Home surveys, conducted by the National Center for Health Statistics. Estimates of spending for nursing home care in 1972 and 1977 were derived from the National Center for Health Statistics estimates of average revenue per day for all facilities providing some nursing care. Growth in the number of nursing home employee work hours for nursing and personal care facilities (SIC 805) multiplied by the growth in input prices were used to extrapolate 1972 revenue data to earlier years, and to interpolate between 1972 and 1977. Estimates of average weekly work hours are derived from data reported by employers and published monthly by the (Bureau of Labor Statistics, 1972-2009). Growth in costs of nursing home industry goods and services (labor and non-labor expenses) are maintained by CMS in the national nursing home input price index (CMS July 2009 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 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 Economic Census (U.S. Census Bureau, 1992, 1997, 2002, and 2007). Added to the Economic Census data are estimates for government-run mail order facilities, state-specific sales taxes on prescription drugs, and adjusted Economic Census non-employer drug store receipts. Next, subtracted are retail sales that flow through nursing homes and those that are provided directly by institutions. Information from IMS Health Inc (1992-2009) is used to interpolate between the Economic Census benchmark years and to extrapolate to later periods. Prior to the 1992 Economic Census, 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 are data from the national Input-Output (I/O) tables produced by the Bureau of Economic Analysis (1963, 1967, 1972, 1977, 1982, 1987, 1992, 1997, and 2002). Expenditures for other non-durable medical products for 1960-1996 were interpolated between IO years and extrapolated to earlier periods using Personal Consumption Expenditure data from the National Income and Product Accounts (Bureau of Economic Analysis, 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 1997-2009 are interpolated between IO years and extrapolated to 2009 using retail sales data (Kline & Company 1960-2009). For medical sundries, data for 1997-2009 are interpolated between IO years and extrapolated to 2009 using Personal Consumption Expenditure data from the National Income and Product Accounts (Bureau of Economic Analysis, 1997-2009).

Durable Medical Products

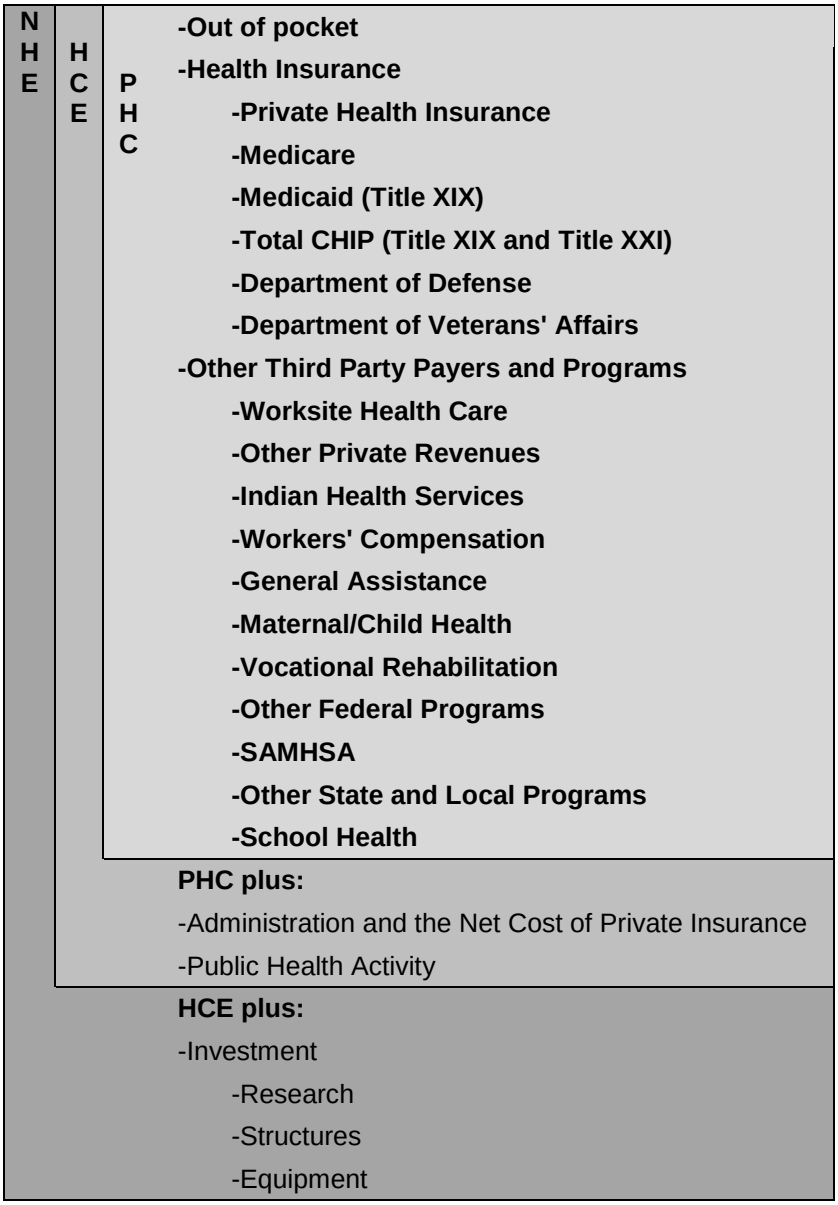
Expenditures in this category represent retail sales of items such as contact lenses, eyeglasses and other ophthalmic products, surgical and orthopedic products, medical equipment rental, oxygen and hearing aids. Durable products generally have a useful life of over three years whereas non-durable products last less than three years. The estimate of durable medical equipment expenditures is based on detailed Input/Output table final demand data adjusted to meet NHEA definitions (Bureau of Economic Analysis

1963, 1967, 1972, 1982, 1987, 1992, 1997, and 2002). The estimates for Medicare, Medicaid, CHIP, Maternal child health, vocational rehabilitation, Indian health services, other state and local and other federal is determined using CMS program data combined with the latest OMB budget data and other public sources. The private health insurance and out-of-pocket estimate is determined in the intervening non-I/O years by using adjusted Personal Consumption Expenditures (PCE) data for therapeutic appliances and equipment. From 1987 through 2009, the split between private health insurance and out-of-pocket was prepared with Consumer Expenditure (CE) data, adjusted and distributed with National Medical Expenditure Survey and Medical Expenditure Panel Survey data.

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 United States. Often several types of payers or programs combine to pay for an individuals' health care. These include out-of-pocket, health insurance, and other third party payers and programs. At the personal health care level these estimates do not include government administration and net cost of private health insurance expenditures (Exhibit 5).

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



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

Out-of-Pocket

Out-of-pocket spending for health care consists of direct spending by consumers for health care goods and services. Included in this estimate is the amount paid out-of-pocket for services not covered by insurance and the amount of coinsurance or deductibles required by private health insurance, provider payments covered by Health Savings Accounts, and co-payments and deductibles by public programs such as Medicare and Medicaid (and not paid by some other third party).

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

For hospitals, physicians and clinics, dental, other professionals, home health and nursing home services, the Service Annual Survey provides data on out-of-pocket payments along with all other sources of funds. This data has been available for all the above services since 1998 and for a subset of these services beginning in 1991. Other sources of data for out-of-pocket spending include the Consumer Expenditure Survey and publications of trade associations such as Visiting Nurses Association (1988) and its predecessor (Voluntary Public Health Nurses Association), the American Hospital Association (1980-2009), the American Medical Association (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 out-of-pocket spending. For 1963 and 1970, the Center for Health Administration Studies and the National Opinion Research Center, both at the University of Chicago, surveyed individuals for the purpose of providing "reliable and valid statistics of medical care use and expenditures 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 most recent household survey, the Medical Expenditure Panel Survey - Household component (Agency for Healthcare Research and Quality 1996-2008).

Health Insurance

This aggregated category includes; private health insurance, Medicare, Medicaid, CHIP, Department of Defense, and Department of Veterans' Affairs. These plans provide enrollees and beneficiaries insurance against medical losses and, in some instances, directly provide medical care.

Private Health Insurance

Private health insurance 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) and Point of Service Plans (POS'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 basis.

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. 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).

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.

Estimates of Medicare spending for personal health care are based on information prepared by the 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, fee-for-service (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. 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 & Medicaid Services.

SMI, or Part B, expenditures include payments for physician services, durable medical equipment, laboratory tests performed in physician offices and independent laboratories, and other services (such as physician-administered drugs, freestanding ambulatory surgical centers, ambulance, and supplies). SMI payments are made by "carriers" on behalf of CMS for the above-mentioned type of Part B services, who determine coverage and payment requirements.

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 actuarial FFS incurred benefits are necessary to achieve consistency between these two sets of Medicare estimates. An initial conceptual adjustment is the elimination of small amounts of incurred benefit spending occurring outside the United States 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 are 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 estimated payments to freestanding end-stage renal disease (FS/ESRD) facilities (which are included in Physicians and Clinics).

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, 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 estimated physician and laboratory services portions of incurred benefits for Physicians and Part B Supplier services. Expenditures for clinics include estimated payments to FS/ESRD facilities. 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, Durable Medical Equipment (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 Durable Medical Equipment 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 (HCPCS). 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 fee-for-service 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 estimates of expenditures for prescription drugs. In 2004 & 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 Private Health Insurance 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 in the Medicare Trustees Report, OACT reports total Medicare payments to managed care plans for services covered by the Hospital Insurance (Part A) and Supplementary Medical Insurance (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 fee-for-service claims on behalf of enrolled beneficiaries is not permitted. Instead, health care providers are paid by a private health care organization (such as HMOs and PPOs), which in turn 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 are 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 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 fee-for-service 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 CMS Form 64, are associated with NHEA service categories by State. For example, five program payments for hospital care (inpatient hospital care, disproportionate share inpatient hospital, mental hospital inpatient, disproportionate share mental hospital, and outpatient hospital) are summed to a single hospital care estimate consistent with the NHEA structure. Adjustments are made for prior period payments. All program categories are assigned to NHEA service categories in this fashion. 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 (MAX) — a set of person-level data files on Medicaid including payments by service — and 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 relate primarily to the creation of NHEA service distributions for capitated and other insurance premium payments recorded on the CMS Form 64. The 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 across the 50 States and the District of Columbia together to get national estimates.

To accurately measure States' contributions to Medicaid expenditures, further adjustments must be made to estimates of 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 (UPL) 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 (CHIP Title XIX and Title XXI)

The Children's Health Insurance Program (CHIP) is a joint federal/State program that provides health insurance for children in families that do not have health insurance coverage and are not eligible for Medicaid. CHIP was created in 1997 with the enactment of the Balanced Budget Act of 1997 (BBA97) 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 now 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 the Children's Health Insurance Program (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 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 CMS Form 21 for Title XXI programs and CMS Form 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 and their families and survivors, and retired members and their families[5]. Adjustments are made to remove items outside the scope of the NHEA and to convert data to a calendar year basis. Also excluded are spending levels for Non-DOD beneficiaries.

Estimates of the Department of Defense (DOD) health care costs (Department of Defense, 1981-2009) are based on DOD's FY 2011 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

[5] 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.

(MERHC). This fund pays for health care costs of Medicare eligible retirees, retirees' family members, and survivors.

In addition, unpublished data provided by the DOD (Department of Defense, 2006-2009) 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 (Department of Defense, 1980-2009), including data to separate hospital, physician and drug categories.

Department of Veterans' Affairs

Estimates of health expenditures by the Department of Veterans Affairs are prepared using *unpublished expenditure data supplied by the Department of Veterans Affairs (Allocation Resource Center,* 1999-2009) supplemented with data from the Budget Appendix of the United States Government (U.S. Government Printing Office, 1968-2009), Monthly Treasury Statements of Receipts and Outlays of the United States Government *(*U.S. Department of the Treasury, Financial Management Service, 1960-2009), and Department of Veterans Affairs *Annual Reports and Congressional Submissions*. In addition, administrators of the Civilian Health and Medical Program of the Veterans Administration (CHAMPVA) provide unpublished data on expenditures specific to this program (VA Health Administration Center, 1960-2009).

Other Third Party Payers and Programs

Worksite Health Care

Worksite health care represents expenditures for personal health care 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 prepared using national employment data and the consumer price index for medical services and physicians from the U.S. Bureau of Labor Statistics. 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 and educational programs, as well as 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.

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 United States. The Indian Commerce Clause of the United States 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.

For more than 120 years, federal responsibility for American Indian and Alaska Native health care passed among different government branches. In 1955, this responsibility was officially transferred to the Public Health Service.

In the 1970s, federal Indian policy was re-evaluated by the Nixon Administration, which adopted 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, have provided new opportunities for the IHS and Tribes to deliver care. The IHCIA included specific authorizations for providing health care services to urban Indian populations, to administer an Indian health professions program, and the ability 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 those facilities where Tribes have elected not to contract or compact their health programs.

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

Workers' Compensation

Workers compensation includes expenditures for medical benefits that are paid through federal and state and local workers compensation programs. The U.S. Department of Labor, Office of Workers' Compensation Programs (OWCP) 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.

State 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.

Workers' compensation programs are designed and administered by the state. Generally the state laws require that 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.

State estimates are based on an annual report by the National Academy of Social Insurance. 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 have two types of programs: General Assistance programs that are often modeled after Medicaid, and 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 State Pharmacy Assistance Program 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 of 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 (OBRA) 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, increase the number of immunized children, increase the number of children in low-income households who receive assessments and follow-up diagnostic and treatment services, provide access to comprehensive prenatal care for women, facilitate the development of comprehensive, family-centered systems of care for children with special health care needs. The States are required by law to spend a three dollar match for every four federal dollars allocated.

Data for the federal Maternal and Child Health spending is provided 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 (SPRANS) projects, Community Integrated Service Systems (CISS) projects, and some research/training amounts. The State & Local spending estimate is based on Public Health Foundation (PHF) data (FYs1980-89) and FYs1997-2008 are obtained from the MCH website.

Vocational Rehab

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 personal health care goods and services financed by the program are included in the health accounts. Data for the program is obtained by the U.S. federal budget and from Vocational Rehabilitation State Grant data from the Department of Education. State & local spending data is provided by the federal Department of Education.

Other Federal Programs

This category includes Federal General Hospital/Medical, Office of Economic Opportunity (O.E.O), and Non-XIX Federal.

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.

Estimates on 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 private health insurance expenditures, rather than government expenditures.

SAMHSA

The Substance Abuse and Mental Health Services Administration (SAMHSA) identifies program areas targeted for funding 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 programs are funded with grants or outlays that purchase or provide personal health care. 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 private health insurance 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 great State of New York.

State and local subsidies to providers are subsidized payments by the state and local government to facilities owned by the state. These providers include hospitals and home health agencies 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 handling 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 inter-censal sample surveys.

School Health

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

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 private health insurance. Net cost is the difference of premiums earned and benefits incurred and includes administrative costs, as well as, additions to reserves, rate credits and dividends, premium taxes, and plan profits or losses and 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; private health insurance, Medicare, Medicaid, CHIP, Department of Defense, and Department of Veterans' Affairs. 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

Private health insurance premiums are estimated by summing benefits with the private health insurance net cost levels. The premiums estimate is an estimate of 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 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 plan profits or losses and 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," currently uses data from AM BEST (A.M. Best, Inc., 2001-2009) 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 Medical Expenditure Panel Survey-Insurance Component (Agency for Healthcare Research and Quality, 1996-2006, 2008 and 2009) and a variety of sources including the Survey of Health Insurance Plans conducted by 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 Best, Inc. (A.M. Best 2001-2009). 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, (GHAA, 1984-94) and InterStudy, (August 2002).

The second approach estimates private health insurance 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. U.S. Census Bureau, the American Medical Association, the American Hospital Association and International Marketing Services (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 2008-2009). After the benefits 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 Private Health Insurance (PHI) premium cost estimates from the Employer Costs for Employee Compensation survey (Bureau of Labor Statistics, 1980-2009) with individually-paid PHI premium cost data from the Consumer Expenditure Survey and AM Best. (Bureau of Labor Statistics, 1984-2009, AM Best, 2009).

Premium estimates developed from all three methodologies are then compared for reasonability. Recently available premium estimates from the Medical Expenditure Panel Survey-Insurance Component for 1996-2006, 2008 and 2009 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 2009 and Kaiser 1992-2009). These comparisons are

used to adjust benefit and premium estimates from the second 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 and instead, the percent allocation of 2009 actual benefit versus non-benefit expenditures was obtained from the CY 2011 BPT.

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 separately estimated for stand-alone prescription drug plans CPDPs and for Medicare Advantage prescription drug plans (MA-PD's)

Medicaid

Medicaid administration costs and the net cost of private health insurance cover the federal and state and local salaries and expenses of the program as well as the net cost of private health insurance for the private plans that insure Medicaid enrollees. Medicaid administrative costs are estimated using CMS Medicaid program data. The net cost of private health insurance 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 private health insurance 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 (CHIP 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 personal health care 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 Department of Defense and the Department of Veterans Affairs 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 personal health care 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 private health insurance include Indian health service, workers compensation, maternal and child health, vocational rehabilitation, other federal programs, and SAMHSA. The estimates of the net cost of private health insurance 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, governments are 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 Department of Health and Human Services. The Food and Drug Administration and the Centers for Disease Control 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 Maternal and Child Health 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 United States (Executive Office of the President, 1960-2009). 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, 1960-2006]; 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 (2009) are prepared by projecting the 2006 estimates to 2009 by applying the year to year change for 2005 to 2006. 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 HCE)

National health expenditures 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

Research shown separately in the NHEA is that of non-profit or 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 (National Institutes of Health, 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 United States 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 2007-09*).

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 (*Academic Research and Development Expenditures: Fiscal Year 2008*). 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) [6] is also used to develop the private portion of this estimate. We summarize and develop annual trends of receipts from non-profit companies classified as medical research based on the National Taxonomy of Exempt Entities — Core codes classification System to move the estimates from 1998 - the last year of data available from NSF surveys. For private funds until 1991, data came from the H. Hughes Medical Institute, National Health Council information on voluntary health agencies' support of medical research[7], and the Foundation Center[8].

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 Medical Capital 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 1993-2008, the primary data source for the Private Structures estimates is the Annual Capital Expenditures Survey, conducted by the Census Bureau. The 2009 structures estimate is extrapolated forward from 2008 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 Bureau of Economic Analysis (1960-1964). For Public Structures, data published by the Bureau of Economic Analysis are used to derive these estimates for 1960-2009.

Equipment

Medical capital equipment 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

[6] Additional information available at http://nccs.urban.org/database/index.cfm
[7] Available at http://www.nhcouncil.org.
[8] Foundation Giving Trends (2003), The Foundation Center. http://foundationcenter.org/findfunders/statistics/

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 (1960-2008) as well as data published by the Bureau of Economic Analysis (1960-2009). The Public Equipment estimates are based on data published by the Bureau of Economic Analysis (1960-2009).

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. While increased spending does reflect increases in use per person, technological innovation, aging of the population and population growth, this increase is also related to 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. The most appropriate deflator for economy-wide prices for this purpose is the Implicit Price Deflator for Gross Domestic Product (GDP). The Implicit Price Deflator for GDP is the most comprehensive measure of pure price inflation for the economy as a whole. This measure eliminates the cause of growth over which the health sector has little control—economy-wide inflation. The remainder measures changes in medical specific price inflation in excess of economy-wide inflation, and intensity and use per capita of health care services. These are factors which are specific to the health sector.

An alternative approach to removing the effects of price growth from health spending is to deflate health care expenditures by a measure of medical specific price inflation. The resulting measure of “real” growth gauges growth in non-price factors of health services delivered devoid of medical care price changes. Non-price changes 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 would include the net effect of any error in the measurement of medical prices or medical expenditures. The Office of the Actuary develops a personal health care expenditure price index as a tool to deflate personal health care expenditures. This personal health care index is a more appropriate measure of the medical price inflation associated with personal health care expenditures than two other available indexes—the Consumer Price Index (CPI) and the medical care component of the personal consumption expenditure fixed-weight price index.

First, the medical care component of the CPI is weighted based on consumer out-of-pocket expenditures. Because a large proportion of health care is paid by third parties, certain health care services are assigned weights that under- or over- represent their shares if all payers were considered. For example, out-of-pocket spending for hospital services represents only 8 percent of all out-of-pocket expenditures while overall hospital spending represents 36 percent of personal health care spending in 2009. Therefore, hospital care is appropriately valued in the medical care CPI for deflating out-of-pocket spending but under-valued for deflating overall personal health care. Second, 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 Producer Price Index (PPI) is a third measure of price inflation. The PPI measures transaction prices or net prices received by producers for their output. Receipts include those from both public and private sources. However, most PPIs for the health service industry begin in 1994 or later and therefore lack a sufficient time series to span the entire history of the NHEA.

During the 2009 NHE Benchmark, we reassessed the deflators used for the PHC components. The Office of the Actuary determined that there was merit in changing some of the price series used to deflate certain expenditures. These changes were often a result of a new data series made available by the Bureau of Labor Statistics or to better align the definition of the deflator to the definition of the PHC commodity or service.

Exhibit 6 lists the price series assigned to each component of personal health care expenditures (PHCE) used in the NHE2009 estimates and forward alongside the price series used in and prior to NHE2008.

Exhibit 6: Price proxies for the personal health care expenditure price index, Updated and Previous

Industry/Commodity or Service	Updated price proxy	Previous price proxy
Personal health care		
Hospital care	PPI, hospitals	PPI, hospitals
Physician and clinical services	Composite Index: PPI for Office of Physicians and PPI for medical & diagnostic laboratories	CPI, physician services
Other professional services	CPI services by other medical professionals	CPI, other medical professionals
Dental services	CPI, dental services	CPI, dental services
Other health, residential, and personal care	N/A	CPI, medical care
Other (School Health, Worksite Health Care, Other Federal, Other State & Local, etc)	CPI physicians' services	N/A
Home and community-based waivers (HCBW)	CPI care of invalids & elderly at home	N/A
Ambulance	CPI-U All Items	N/A
Residential Mental Health & Substance Abuse Facilities	PPI residential mental retardation facilities	N/A
Home health care	PPI home health care services	CPI, professional services
Nursing care facilities and continuing care retirement communities	PPI nursing care facilities	National Nursing Home Input Price Index
Prescription drugs	CPI, prescription drugs	CPI, prescription drugs and medical supplies
Other non-durable medical products	CPI, internal & respiratory over-the-counter drugs	CPI, internal & respiratory over-the-counter drugs
Durable medical equipment	Composite Index: CPI for eyeglasses and eye care and CPI nonprescription medical equipment and supplies	CPI, eyeglasses and eye care

1. Producer Price Index for hospitals, U.S. Department of Labor, Bureau of Labor Statistics. Used beginning in 1994 and scaled to 100.0 in 2005. Indexes for 1960-93 are based on a CMS developed output or transaction price index.
2. Consumer Price Index for all urban consumers, U.S. Department of Labor, Bureau of Labor Statistics. Indexes are scaled so that the 2005 value is 100.0.
3. With the NHE04 benchmark, the CPI for professional services was replaced with the CPI for other medical professionals, beginning in 1988.
4. NNHIPI developed and maintained by CMS. SOURCE: Centers for Medicare & Medicaid Services, Office of the Actuary, National Health Statistics Group.

The differences in the historical NHE deflator series arise from changes to the following price series:

- *Physician Services:* From 1976 forward the deflator was changed from the CPI physician services to an internal transitional series prior to the PPI for offices of physicians. We chose to switch to the PPI for physicians services because it more closely matches the NHE definition and included payments from all payer types, unlike the CPI that reflects consumer out-of-pocket payments (including private insurance and Medicare Part B services).
- *Other Professional Services:* The deflator for other professional services, from 1988 forward, is changed from the CPI for professional services, which includes both physicians and dentists, to

the CPI for other professional services, which is more in line with the costs associated with this NHE category.

- *Home Health:* The deflator for home health spending is changed over the entire history. From 1960–1987 the deflator will be CPI Medical Care, from 1988–1996 the deflator will be CPI for other medical professionals, and from 1997 forward the deflator will be the PPI for Home Health Care Services. Previously, home health spending was deflated by the CPI for professional services over the entire history.
- *Durable medical equipment:* The updated deflator is a blend of eyeglasses and eye care and non-prescription medical equipment and supplies.
- *Nursing care facilities and continuing care retirement communities:* The deflator will be different from 1996 forward, when the PPI became available. Prior to 1996 the CMS Skilled Nursing Facility input price index is used.
- *Other health, residential, and personal care:* The deflator will be different over the entire history since the weighted average of the various deflators used produces a different price trend than the CPI medical care, with the most notable difference occurring after 1982 when residential care accounted for 60 percent of the spending in this category and the growth in the skilled nursing facility input price index exhibited slower growth relative to the CPI medical care. After 2000 the residential care accounted for only about 40 percent or less of this category, at the same time that the weight for the other components rose, the price series used to deflate them grew more slowly than the CPI medical care.

The previous PHC deflator predominantly relied on CPI indexes to deflate many of the PHC expenditures in the NHEA incorporating only one PPI, the PPI for hospitals. For the updated PHC deflator, we are expanding the use of PPI deflators in the PHCE deflator to include the PPI for Nursing Care Facilities, the PPI for Home health, the PPI for Offices of physicians, and the PPI for Medical Labs and diagnostic laboratories. These PPI series more closely align with the NHE definitions of the services they are meant to deflate and have a sufficient time series to warrant incorporation as deflators. We plan to continue to use the CPI series to deflate certain expenditures where the PPI is unavailable or where the definition of PHC spending more closely aligns with the definition of the CPI prices collected. For example, the NHE prescription drug estimate only includes spending on retail drugs; therefore the CPI for Prescription Drugs is a more accurate choice to deflate these expenditures rather than using a PPI for pharmaceuticals.

Summing all of the deflated NHE components yields a constant dollar estimate of PHCE.

Exhibit 7: Personal health care expenditures in current and constant dollars (using the updated PHC deflator) and associated price indexes, by type of spending: Selected years 1980-2009.

Current dollars in billions

Type of spending	1980	1990	2000	2005	2007	2008	2009
Personal health care	$217.1	$616.6	$1,164.4	$1,692.6	$1,904.3	$1,997.2	$2,089.9
Hospital care	$100.5	$250.4	$415.5	$606.5	$686.8	$722.1	$759.1
Physician and clinical services	$47.7	$158.9	$290.0	$419.6	$462.6	$486.5	$505.9
Other professional services	$3.5	$17.4	$37.0	$53.1	$59.5	$63.4	$66.8
Dental services	$13.3	$31.5	$62.0	$86.8	$97.3	$102.3	$102.2
Other health, residential, and personal care	$8.5	$24.3	$64.7	$96.5	$108.3	$113.3	$122.6
Other (School Health, Worksite Health Care, Other Federal, Other State & Local, etc)	$2.6	$6.4	$18.7	$24.9	$27.1	$25.9	$29.3
HCBWs	$0.0	$1.3	$13.2	$24.0	$29.3	$32.0	$34.7
Ambulance	$1.2	$3.4	$7.2	$12.7	$14.4	$15.7	$16.7
Residential Mental Health & Substance Abuse Facilities	$4.8	$13.2	$25.6	$34.9	$37.5	$39.7	$41.9
Home health care	$2.4	$12.6	$32.4	$48.7	$57.8	$62.1	$68.3
Nursing care facilities and continuing care retirement communities	$15.3	$44.9	$85.1	$112.1	$126.5	$132.8	$137.0
Non-durable medical products	$21.9	$62.7	$152.5	$238.9	$271.2	$279.6	$293.2
Prescription drugs	$12.0	$40.3	$120.9	$201.7	$230.2	$237.2	$249.9
Other non-durable medical products	$9.8	$22.4	$31.6	$37.2	$41.1	$42.3	$43.3
Durable medical equipment	$4.1	$13.8	$25.1	$30.4	$34.4	$35.1	$34.9

Price Indexes

Type of spending	1980	1990	2000	2005	2007	2008	2009
Personal health care	32.1	63.4	85.1	100.0	106.5	109.3	112.3
Hospital care	29.6	61.1	81.3	100.0	108.0	111.2	114.6
Physician and clinical services	41.9	76.7	91.8	100.0	104.9	106.0	108.4
Other professional services	33.2	64.4	86.7	100.0	105.7	110.0	112.3
Dental services	24.4	48.1	79.8	100.0	110.6	116.3	119.8
Other (School Health, Worksite Health Care, Other Federal, Other State & Local, etc)	26.6	55.9	85.1	100.0	105.5	108.3	111.6
HCBWs	33.2	67.7	91.7	100.0	101.9	106.6	108.6
Ambulance	42.2	66.9	88.2	100.0	106.2	110.2	109.9
Residential Mental Health & Substance Abuse Facilities	32.0	54.8	81.5	100.0	107.9	113.2	117.7
Home health care	33.1	67.5	91.7	100.0	102.4	104.1	105.7
Nursing care facilities and continuing care retirement communities	31.9	54.6	81.2	100.0	107.8	112.1	115.8
Prescription drugs	20.8	52.1	81.8	100.0	105.8	108.4	112.1
Other non-durable medical products	41.7	81.2	98.4	100.0	103.7	105.0	107.4
Durable medical equipment	42.9	74.1	95.1	100.0	103.8	104.8	105.9

Constant 2005 dollars in billions

Type of spending	1980	1990	2000	2005	2007	2008	2009
Personal health care	692.4	$977.0	$1,369.6	$1,692.6	$1,788.2	$1,828.0	$1,862.1
Hospital care	$339.8	$410.2	$510.9	$606.5	$636.1	$649.2	$662.5
Physician and clinical services	$113.9	$207.2	$315.8	$419.6	$441.0	$459.1	$466.6
Other professional services	$10.5	$27.1	$42.7	$53.1	$56.3	$57.7	$59.5
Dental services	$54.8	$65.5	$77.7	$86.8	$88.0	$87.9	$85.3
Other health, residential, and personal care	$27.3	$42.6	$75.9	$96.5	$102.8	$103.2	$109.0
Other (School Health, Worksite Health Care, Other Federal, Other State & Local, etc)	$9.7	$11.4	$22.0	$24.9	$25.7	$23.9	$26.3
HCBWs	$0.0	$1.9	$14.4	$24.0	$28.7	$30.0	$32.0
Ambulance	$2.7	$5.1	$8.2	$12.7	$13.6	$14.2	$15.2
Residential Mental Health & Substance Abuse Facilities	$14.9	$24.1	$31.4	$34.9	$34.8	$35.1	$35.6
Home health care	$7.2	$18.6	$35.3	$48.7	$56.4	$59.6	$64.6
Nursing care facilities and continuing care retirement communities	$47.9	$82.3	$104.9	$112.2	$117.4	$118.5	$118.3
Non-durable medical products	$81.5	$105.0	$179.9	$238.9	$257.2	$259.2	$263.3
Prescription drugs	$58.0	$77.4	$147.8	$201.7	$217.6	$218.9	$223.0
Other non-durable medical products	$23.5	$27.6	$32.1	$37.2	$39.6	$40.3	$40.3
Durable medical equipment	$9.4	$18.6	$26.4	$30.4	$33.1	$33.5	$32.9

Exhibit 8: Personal health care expenditures in current and constant dollars (using the previous PHC deflator) and associated price indexes, by type of spending: Selected years 1980-2009.

Current dollars in billions

Type of spending	1980	1990	2000	2005	2007	2008	2009
Personal health care	$217.1	$616.6	$1,164.4	$1,692.6	$1,904.3	$1,997.2	$2,089.9
Hospital care	$100.5	$250.4	$415.5	$606.5	$686.8	$722.1	$759.1
Physician and clinical services	$47.7	$158.9	$290.0	$419.6	$462.6	$486.5	$505.9
Other professional services	$3.5	$17.4	$37.0	$53.1	$59.5	$63.4	$66.8
Dental services	$13.3	$31.5	$62.0	$86.8	$97.3	$102.3	$102.2
Other health, residential, and personal care	$8.5	$24.3	$64.7	$96.5	$108.3	$113.3	$122.6
Home health care	$2.4	$12.6	$32.4	$48.7	$57.8	$62.1	$68.3
Nursing care facilities and continuing care retirement communities	$15.3	$44.9	$85.1	$112.1	$126.5	$132.8	$137.0
Non-durable medical products	$21.9	$62.7	$152.5	$238.9	$271.2	$279.6	$293.2
Prescription drugs	$12.0	$40.3	$120.9	$201.7	$230.2	$237.2	$249.9
Other non-durable medical products	$9.8	$22.4	$31.6	$37.2	$41.1	$42.3	$43.3
Durable medical equipment	$4.1	$13.8	$25.1	$30.4	$34.4	$35.1	$34.9

Price Indexes (Based on previous PHC deflator)

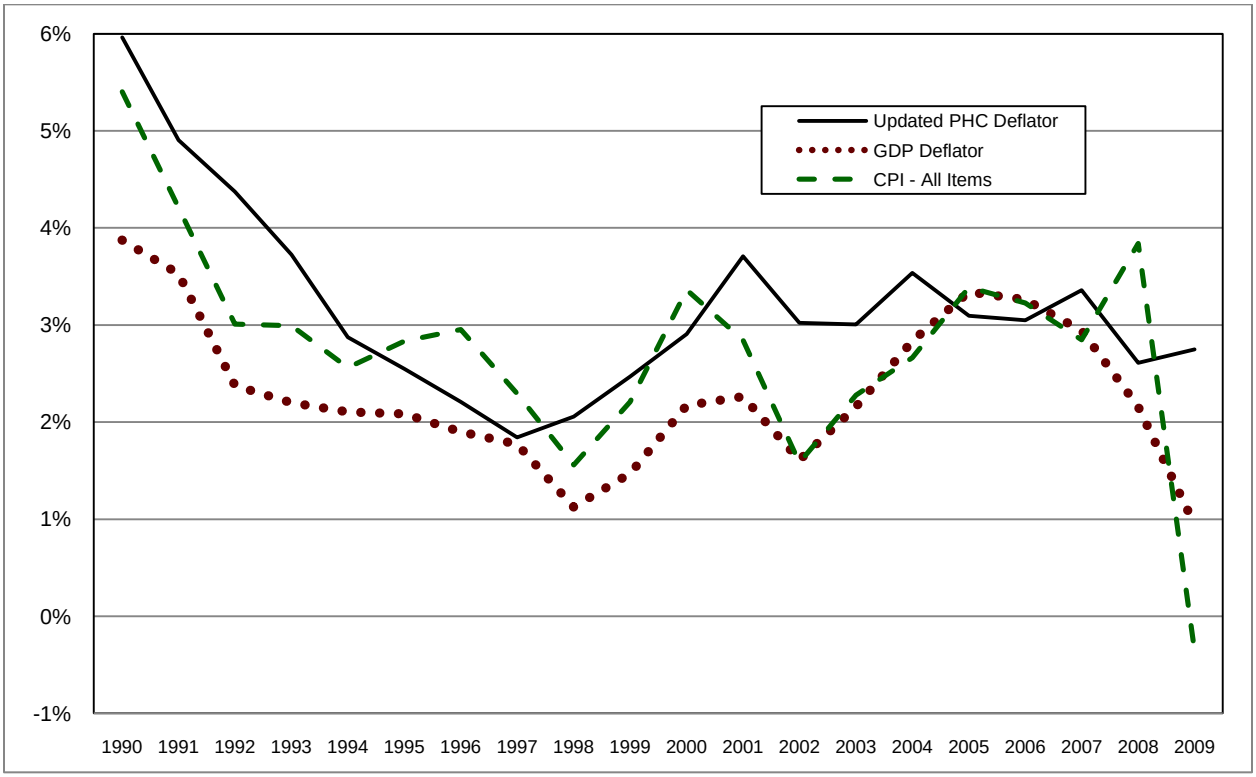
Type of spending	1980	1990	2000	2005	2007	2008	2009
Personal health care	28.2	58.1	83.0	100.0	106.9	110.2	113.4
Hospital care	29.6	61.1	81.3	100.0	108.1	111.3	114.6
Physician and clinical services	26.6	56.0	85.1	100.0	105.8	108.6	111.9
Other professional services	33.1	64.4	86.7	100.0	105.7	110.0	112.3
Dental services	24.3	48.0	79.7	100.0	110.6	116.2	119.7
Other health, residential, and personal care	23.2	50.4	80.7	100.0	108.6	112.6	116.2
Home health care	27.7	55.4	84.4	100.0	106.8	110.4	113.4
Nursing care facilities and continuing care retirement communities	36.1	61.7	83.6	100.0	107.0	111.0	113.5
Prescription drugs	20.4	51.0	80.1	100.0	105.0	107.6	111.2
Other non-durable medical products	41.7	81.2	98.4	100.0	103.7	105.0	106.3
Durable medical equipment	43.4	71.9	91.8	100.0	105.2	106.6	107.5

Constant 2005 dollars in billions (Using previous PHC deflator)

Type of spending	1980	1990	2000	2005	2007	2008	2009
Personal health care	$764.4	$1,056.5	$1,403.0	$1,692.6	$1,780.9	$1,812.6	$1,843.4
Hospital care	$339.9	$410.2	$510.9	$606.5	$635.6	$648.8	$662.2
Physician and clinical services	$179.4	$284.1	$340.8	$419.6	$437.4	$447.8	$452.2
Other professional services	$10.5	$27.1	$42.7	$53.1	$56.3	$57.7	$59.5
Dental services	$54.9	$65.7	$77.8	$86.8	$88.0	$88.0	$85.4
Other health, residential, and personal care	$36.7	$48.3	$80.2	$96.5	$99.7	$100.6	$105.5
Home health care	$8.6	$22.7	$38.4	$48.7	$54.1	$56.2	$60.2
Nursing care facilities and continuing care retirement communities	$42.3	$72.7	$101.9	$112.2	$118.2	$119.7	$120.6
Non-durable medical products	$82.7	$106.6	$182.9	$238.9	$258.9	$260.9	$265.4
Prescription drugs	$59.2	$79.0	$150.9	$201.7	$219.3	$220.5	$224.7
Other non-durable medical products	$23.5	$27.6	$32.1	$37.2	$39.6	$40.3	$40.7
Durable medical equipment	$9.3	$19.2	$27.4	$30.4	$32.7	$33.0	$32.4

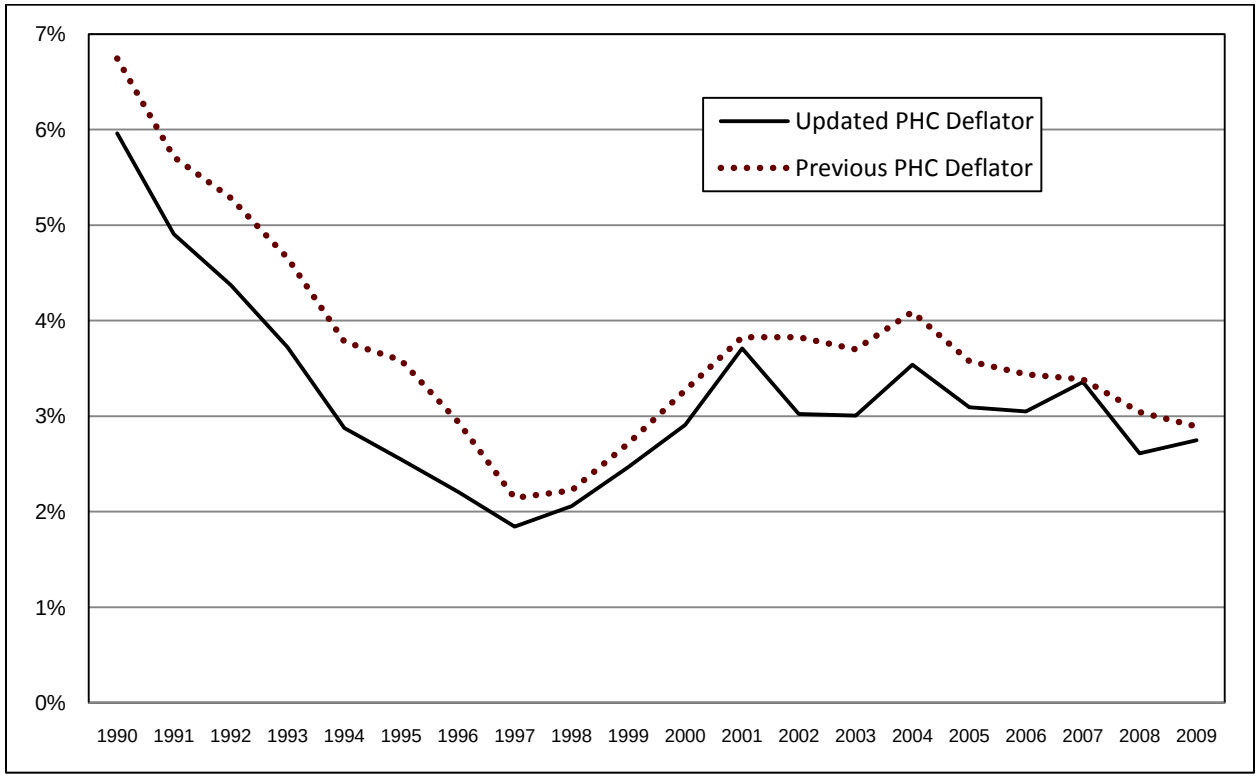
The updated PHC deflator increases 3.2 percent per year, on average, from 1990-2009 compared to 3.7 percent per year for the previous PHC deflator. This compares to a 2.3 percent average annual increase in the GDP deflator and a 2.8 percent average annual increase in the CPI for all items over the same period.

Current PHC Deflator as Compared to GDP Deflator & CPI-U All Items, Annual Growth Rates, 1990-2009



This change to the PHC deflator increases real personal health care spending by roughly 1 percent by 2009. The major reasons for the slower growth in the updated deflator are the switch in price deflator for physician services, home health, and other health, residential, and personal health care services. For each of these services the updated deflator grows slower than what was previously used to deflate spending. We believe the switch to these price deflators is an improvement because they more accurately reflect the increases associated with the services they are used to deflate, and, in particular, reflect the price changes associated with Medicare and Medicaid services where as the CPI only reflected price changes associated with private payers and Medicare Part B payments.

Current PHC Deflator as Compared to Previous PHC Deflator, Annual Growth Rates, 1990-2009



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