

# **Household health care spending: comparing the Consumer Expenditure Survey and the National Health Expenditure Accounts**

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Health care spending data produced by the Federal Government include the Bureau of Labor Statistics Consumer Expenditure Survey (CE) and the National Health Expenditure Accounts (NHEA) of the Department of Health and Human Services Center for Medicare and Medicaid Services.<sup>1</sup>

This article compares annual aggregate CE and NHEA household health care expenditures from 2007 to 2010 to determine the consistency of the estimates. For each year examined, estimates were obtained for all relevant categories and then CE-NHEA spending ratios were calculated.

## **Data sources and methodology**

Conducted continuously since 1980, the CE has two components, a quarterly Interview Survey and a weekly Diary Survey. Each component queries an independent sample of consumer units. The CE collects information on all spending components such as food, clothing, housing, and transportation, as well as health care.<sup>2</sup>

Published by the Centers for Medicare and Medicaid Services of the U.S. Department of Health and Human Services, the NHEA are the official estimates of total health care spending in the United States. Dating back to 1960, the NHEA measures annual aggregate U.S. spending for health care goods and services, public health activities, program administration, the net cost of private insurance, and research and other investment related to health care.<sup>3</sup>

The CE and the NHEA differ in the populations they cover. The CE is designed to represent the U.S. civilian noninstitutional population and excludes those living in an institution, such as a nursing home or prison, and active-duty members of the U.S. Armed Forces living on a military base. The NHEA covers the larger resident population, which includes all persons, both military and civilian, living in the U.S.<sup>4</sup>

CE health care data are payments (after reimbursement) made directly to the providers of care, such as hospitals, and payments to third parties, such as insurance companies, for private group and individual health insurance coverage. Payments to the Federal Government for Medicare Part B and Part D coverage are also included. Like the CE, NHEA household health care spending includes direct payments to providers and amounts paid to third party insurers.<sup>5</sup>

The CE obtains information from individual consumer units while the NHEA uses secondary data sources, such as the Services Annual Survey and the Economic Census, both produced by the U.S. Census Bureau.<sup>6</sup> The CE and NHEA also differ in how spending is categorized. In the CE, spending is categorized by the type of service provided, while in the NHEA, the type of establishment providing the service generally determines what is included in a spending category. For example, the CE has separate categories for inpatient hospitalization and other

medical services (outpatient hospital care, emergency room services, etc.), but the NHEA places these services in its hospital care category.<sup>7</sup>

Before estimating aggregate expenditures, some adjustments were made to spending categories so that CE and NHEA components would be as comparable as possible. For example, the CE eye care services category was combined with the other professional services category to better align the data with the NHEA other professional services category.<sup>8</sup>

The NHEA estimates were adjusted so that they refer to the same population concept as the CE. A multiplier was computed for each year covered by the research. Each multiplier was derived by finding the ratio of the population covered by the CE to the population covered by the NHEA.<sup>9</sup> While this method accounts for differences in population size, it does not account for spending differences in the populations covered by the two data sources. CE-NHEA spending ratios were then computed.

## Findings

Table 1 shows CE estimates of aggregate expenditures for health care and CE-NHEA health care spending ratios. In 2010, CE aggregate medical care expenditures were \$381.4 billion or 69 percent of the NHEA estimate of \$550.1 billion.<sup>10</sup>

The lowest CE-NHEA ratios were for physicians' services with a range of 0.44 to 0.47. A major factor is the difference in the items in the CE and NHEA categories. For example, separately billed laboratory charges are part of the NHEA physicians' services category, but in the CE they are included in the hospital care category. The NHEA category also includes services by physicians' offices and freestanding outpatient care centers such as HMOs (health maintenance organizations). Because the NHEA categorizes spending by establishment, some items, such as prescription drugs purchased at an HMO pharmacy, would be included in this category instead of in prescription drugs as in the CE.

The CE-NHEA ratios for premium payments to the Medicare SMI (Supplementary Medical Insurance) Trust Fund were quite similar, with a range of 1.01 to 1.10. This could be the result of the way that the CE Interview Survey accounts for Medicare Part B (Medical Insurance) premium payments. Respondents are asked about the number of household members enrolled in Medicare. Each person with Medicare coverage is assumed to have Medicare Part A (Hospital Insurance)<sup>11</sup> and is then assigned the standard Medicare Part B monthly premium (\$110.50 in 2010). The CE does not take into account low-income beneficiaries with state buy-in status whose Part B premiums are paid by Medicaid. The NHEA subtracts these amounts from premiums paid to the Medicare SMI. As of July 1, 2010, about 17 percent of Medicare enrollees had state buy-in status. Accounting for these subsidies in the CE would reduce CE-NHEA ratios for SMI premiums.<sup>12</sup>

In contrast, the CE does not take into account those Medicare beneficiaries with relatively high incomes who have been required to pay a greater share of Part B costs since 2007. Because the proportion of Medicare enrollees subject to this income-related premium is low, CE-NHEA

ratios would probably not increase much if the additional premiums paid were taken into account.<sup>13</sup>

Under Part D, individuals eligible for both Medicare and Medicaid receive a low-income subsidy for the Medicare drug plan premium. This would not affect CE-NHEA ratios for Medicare SMI premiums because CE respondents with Part D stand-alone coverage provide information about the amount of the monthly premium paid after any reimbursement is taken into account.

CE-NHEA hospital care ratios ranged from 0.86 to 0.91. These ratios reflect that the CE hospital care category includes ambulance charges, payments to establishments providing inpatient treatment of mental health and substance abuse illnesses, and separately billed laboratory charges that are not part of the NHEA hospital care category.<sup>14</sup>

CE and NHEA aggregate expenditures for prescription drugs were also fairly close, with ratios ranging from 0.82 to 0.89. One reason is that the NHEA prescription drugs category includes spending on items from retail outlets and mail-order pharmacies only, while the CE also includes items obtained from other sources, such as health maintenance organizations.

## **Conclusions**

CE-NHEA ratios for total health care spending and its components varied little between 2007 and 2010. The highest CE-NHEA ratios were for premiums paid to the Medicare SMI (Supplementary Medical Insurance) Trust Fund and the lowest ratios were for physicians' services. (See chart.) Although some alignment of the two data sets was possible, differences in definitions, sources, and methods appear to be responsible for differences in the estimates.

12/10/12

*Acknowledgment:* The author wishes to thank Cathy A. Cowan of the Office of the Actuary, Centers for Medicare and Medicaid Services, for her helpful comments and suggestions.

Table 1. Comparison of aggregate household health care expenditures in the Consumer Expenditure Survey and National Health Expenditure Accounts, 2007–2010

Expenditure Category	Consumer Expenditure Survey <sup>1</sup>				Ratio of Consumer Expenditure Survey to National Health Expenditure Accounts			
	(in Billions of dollars)				2007	2008	2009	2010
	2007	2008	2009	2010				
Health care, total	\$340.9	\$357.2	\$375.8	\$381.4	0.67	0.66	0.70	0.69
Health insurance, total	185.6	199.7	215.7	221.7	0.68	0.68	0.72	0.72
Private insurance	141.0	144.6	158.4	163.0	0.61	0.58	0.63	0.63
Medicare SMI <sup>3</sup>	44.7	47.8	49.7	50.2	1.10	1.08	1.08	1.01
Medical commodities, total	72.0	72.5	73.4	73.2	0.65	0.67	0.67	0.67
Prescription drugs.....	43.2	43.0	43.7	42.4	0.82	0.85	0.87	0.89
Medical supplies and nonprescription drugs.....	18.4	19.0	18.9	20.7	0.48	0.48	0.47	0.51
Medical equipment.....	10.4	10.5	10.8	10.1	0.55	0.57	0.58	0.50
Medical services, total.....	83.3	85.0	86.7	86.6	0.65	0.64	0.66	0.65
Professional services.....	63.2	63.9	65.6	64.7	0.60	0.58	0.62	0.60
Physicians' services.....	20.6	22.0	22.4	22.2	0.44	0.46	0.47	0.46
Dental services.....	29.4	30.7	32.4	31.8	0.69	0.68	0.76	0.75
Other professional services	13.3	11.2	10.8	10.7	0.83	0.66	0.64	0.62
Hospital care.....	20.0	21.1	21.1	21.8	0.90	0.91	0.86	0.86

<sup>1</sup> Consumer Expenditure Survey data exclude nursing home care spending.

<sup>2</sup> National Health Expenditure Accounts data exclude home health care; nursing home care; employee and self-employment contributions and voluntary premiums paid for Medicare Part A; and other health, residential, and personal care expenditures.

<sup>3</sup> Premiums paid to the Medicare Supplementary Insurance Trust Fund for Part B and Part D coverage.

Note: Sums may not equal totals because of rounding. Expenditure categories have been adjusted to make the two data sources as comparable as possible.

Source: U.S. Bureau of Labor Statistics, Consumer Expenditure Survey, and U.S. Department of Health and Human Services, Centers for Medicare and Medicaid Services, National Health Expenditure Accounts. For more information, see "National Health Expenditures by Source of Funds and Type of Expenditure: Calendar Years 2004-2010,"

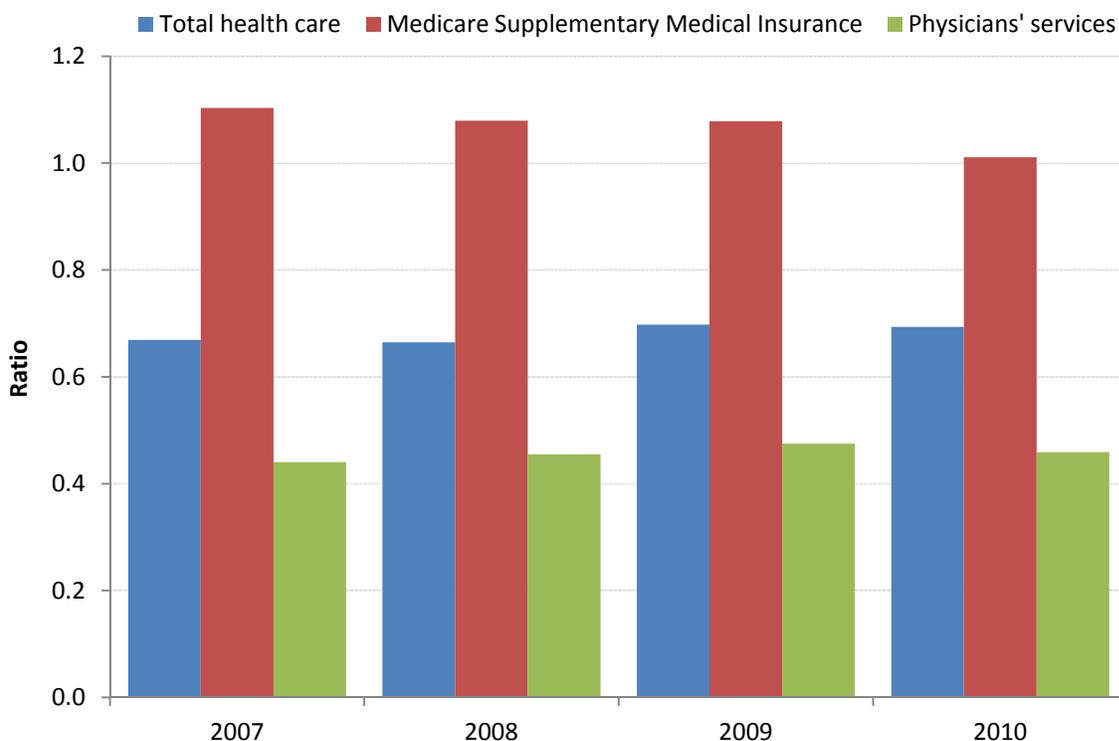
<http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/tables.pdf>

and "National Health Expenditures 2010: Sponsor Highlights,"

<http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/sponsors.pdf>

Because retrospective adjustments to NHEA data are made when new data are issued, CE-NHEA ratios may differ from those published in previous years.

**Spending amounts for selected health care categories measured by the Consumer Expenditure Survey as a ratio of the amounts measured by the National Health Expenditure Accounts, 2007–2010**



Source: U.S. Bureau of Labor Statistics, Consumer Expenditure Survey, and U.S. Department of Health and Human Services, National Health Expenditure Accounts.

**Notes**

<sup>1</sup>Other Federal Government sources of health care spending data include the household component of the Medical Expenditure Panel Survey (MEPS) of the Department of Health and Human Services Agency for Healthcare Research and Quality and the Personal Consumption Expenditures (PCE) of the Bureau of Economic Analysis. For more information about these data sources, see Medical Expenditure Panel Survey, “Household Component,” Agency for Healthcare Research and Quality, Revised October 25, 2010, [http://meps.ahrq.gov/mepsweb/survey\\_comp/household.jsp](http://meps.ahrq.gov/mepsweb/survey_comp/household.jsp) and *Concepts and Methods of the U.S. National Income and Product Accounts*, Chapter 5, “Personal Consumption Expenditures,” U.S. Bureau of Economic Analysis, November 2011, <http://www.bea.gov/national/pdf/NIPAchapters1-9.pdf>.

<sup>2</sup> For more information, see *BLS Handbook of Methods*, Chapter 16, “Consumer Expenditures and Income,” <http://www.bls.gov/opub/hom/pdf/homch16.pdf>.

<sup>3</sup> See “National Health Expenditure Accounts: Methodology Paper, 2010: Definitions, Sources, and Methods,” Centers for Medicare and Medicaid Services, <http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/dsm-10.pdf>.

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<sup>4</sup> For more information, see “Population Estimates Terms and Definitions,” U.S. Census Bureau, <http://www.census.gov/popest/about/terms.html>.

<sup>5</sup> For more information, see “National Health Expenditures 2010: Sponsor Highlights,” Centers for Medicare and Medicaid Services, <http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/sponsors.pdf>. In the CE, out-of-pocket health care expenses are any unreimbursed expenses paid directly to the provider of care or to a third party insurer. The CE classification is similar to the NHEA sponsor concept where household spending includes premiums paid to a third party for private insurance and Medicare as well as amounts paid directly to the providers of care, such as hospitals and pharmacies.

<sup>6</sup> Every 5 years the NHEA undergoes a comprehensive revision that includes the incorporation of newly available source data, methodological and definitional changes, and benchmark estimates from the U.S. Census Bureau’s Economic Census which is available for years ending in 2 and 7. For more information about changes made after the 2007 Economic Census, see “Summary of National Health Expenditure Account 2009 Comprehensive Revisions,” <http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/benchmark2009.pdf>.

Earlier CE-NHEA comparisons were based on the 2002 Economic Census and are not comparable with the estimates in this research. Two of these comparisons are “Consumer Expenditure Survey compared with National Health Expenditure Accounts,” *Consumer Expenditure Survey, 2006-2007*, Report 1021, <http://www.bls.gov/cex/twoyear/200607/csxnhe.pdf> and Ann C. Foster, “Out-of-pocket health care expenditures: a comparison,” *Monthly Labor Review*, February 2010, pp. 3-19, <http://www.bls.gov/opub/mlr/2010/02/art1full.pdf>.

<sup>7</sup> See Ann C. Foster, “Out-of-pocket health care expenditures: a comparison,” for a more detailed discussion.

<sup>8</sup> The CE data used in this research are unpublished integrated data showing the most detailed (least aggregated) breakdowns available. The NHEA data were obtained from Table 4, “National Health Expenditures, by Source of Funds and Type of Expenditure: Calendar Years 2004-2010,” Centers for Medicare and Medicaid Services, <http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/tables.pdf> and “National Health Expenditures 2010: Sponsor Highlights.” When the Centers for Medicare and Medicaid Services publish NHEA data for subsequent years, data from previous years are often revised. The NHEA data cited in this research are those released with the 2010 estimates on January 11, 2012. Because of these revisions, data for 2007-2009 that were released with the 2009 estimates on January 6, 2011, may not be the same as comparable estimates released in 2012.

<sup>9</sup> This method has been used in previous CE data comparison research. For more information, see Ann C. Foster, “Out-of-pocket health care expenditures: a comparison,” and Thesia I. Garner, George Janini, William Passero, Laura Paszkiewicz, and Mark Vendemia, “The CE and the PCE: a comparison,” *Monthly Labor Review*, September 2006, pp. 20-46, <http://www.bls.gov/opub/mlr/2006/09/art3full.pdf>.

<sup>10</sup> CE estimates exclude nursing home care spending. NHEA estimates exclude home health care; nursing home care; employee and self-employed contributions to Medicare Part A (Hospital Insurance); and other health, residential, and personal care expenditures.

<sup>11</sup> The Social Security Act allows some people not otherwise eligible for Medicare Part A (Hospital Insurance) to obtain coverage by paying a monthly premium. In 2010, premiums collected from such voluntary participants (or paid on their behalf by Medicaid) amounted to about \$3.3 billion. For more information, see “2012 Annual Report of the Boards of Trustees of the Federal Hospital Insurance and the Federal Supplementary Medical Insurance Trust Funds,” April 23, 2012, Centers for Medicare and Medicaid Services, <http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/ReportsTrustFunds/Downloads/TR2012.pdf>.

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<sup>12</sup> As of July 1, 2010, 46.6 million persons in the United States were enrolled Medicare Hospital Insurance and/or Supplementary Medical Insurance. Of these enrollees, 8 million had state buy-in status, with Medicaid providing assistance with Medicare premium payments. For more information, see *Medicare & Medicaid Research Review*, 2011 Statistical Supplement, <http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/MedicareMedicaidStatSupp/2011.htm>. Medicaid will pay the voluntary premium for Medicare beneficiaries with state buy-in status who do not qualify for Medicare Hospital Insurance (Part A). The CE does not collect information on voluntary contributions for Part A premiums.

<sup>13</sup> The proportion of Part B enrollees paying the income-related premium was 4.2 percent in 2007, 4.8 percent in 2008, 5.2 percent in 2009, and 4.4 percent in 2010. For more information, see “Income-Relating Medicare Part B and Part D Premiums under Current Law and Recent Proposals: What are the Implications for Beneficiaries?” (Issue Brief) Washington, DC: Kaiser Family Foundation, <http://www.kff.org/medicare/8126.cfm>.

<sup>14</sup> In the NHEA, separately billed laboratory charges are part of the NHEA physician and clinical services category, while ambulance charges, payments to establishments providing inpatient treatment of mental health and substance abuse illnesses are part of the NHEA other health, residential, and personal care category. This category was subtracted from the NHEA total because the majority of these expenses are for residential care facilities that mainly provide assistance with daily living or returning an individual back into the community. For more information, see “National Health Expenditure Accounts: Methodology Paper, 2010: Definitions, Sources, and Methods.”