

Comparing medical care expenditures of two diverse U.S. data sources

BLS Consumer Expenditure Survey and administrative data from the Health Care Financing Administration show similar expenditures for medical commodities and services

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Most families in the United States spend some of their disposable income for medical care. The amount depends on the medical commodities and services obtained and also on the financing of these expenses. This article looks at the cost of health care to consumers, exclusive of financing by other parties—referred to here as direct payments for personal health care or out-of-pocket expenditures for medical care.

The share of family expenditures spent on medical care actually declined over the 1960–61 to 1982–83 period, despite rising prices and greater utilization of physicians and ambulatory services. However, during the period, there was an expansion in the availability of health insurance and an equal or greater increase in employer-provided health benefits. Also, Federal programs for health care provision and financing were introduced which affected medical care costs to households. The introduction of medicare and medicaid payments in 1966 and their expansion in 1972 and 1978 are examples of this kind of legislative initiative.¹ Such changes in the structure of health insurance coverage have affected the proportion of health care costs paid by consumers.

Consumer spending for medical care rose rapidly between the 1960's and the 1980's. However, the consumer share of total personal health care costs, which include payments by third parties, declined. In 1960, these consumer costs accounted for 55 percent of total personal health care costs; in

1984, they accounted for only 28 percent.² Third parties are private health insurers, Federal, State, and local governments, and philanthropic organizations. The items covered by the costs include all health commodities and professional services.

Data from the BLS Consumer Expenditure Survey show the effect of the structural changes in health care financing on the family budget. Medical care expenditures have been rising, but medical care has been accounting for a declining share of the total family budget. From 1960–61 to 1982–83, consumers' annual average expenditures for medical care rose almost 200 percent, but the rise in other living expenses was somewhat greater. As a proportion of total family expenditures, medical care expenditures declined from 6.1 percent to 4.6 percent. (See table 1.)

Data sources

As part of the evaluation process, the BLS compares Consumer Expenditure Survey results with other relevant data. This article compares health care expenditures data from the Consumer Expenditure Survey (CE) with those from the National Health Accounts (NHA).

The CE and the NHA are constructed for different purposes and, hence, use different estimation methods. The CE focuses on family spending and is the major source for out-of-pocket data by demographic groups. The NHA focuses on national aggregate expenditures for all health care by categories and sources of financing. The estimates from both

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Table 1. Average expenditures of all U.S. consumer units for medical care and percent change and distribution, Consumer Expenditure Survey, 1960-61 and 1982-83

Expenditure category	Average expenditures		Percent change	Percent distribution	
	1960-61	1982-83		1960-61	1982-83
Total expenditures	\$5,626	\$18,944	236.7	100.0	100.0
Medical care, total	340	874	157.1	6.1	4.6
Medical care less insurance	251	641	155.4	4.5	3.4
Medical insurance payments	89	233	161.8	1.6	1.2
All other expenditures	5,286	18,070	241.9	93.9	95.4

sources are subject to sampling and estimation errors.³ Because of the differences in methodology between CE and NHA, we expect some differences in the resulting aggregates. The purpose of this analysis is to look at the extent and direction of the differences.

The BLS Consumer Expenditure Survey has been conducted annually since 1980 and at approximately 10-year intervals before then. It provides data that allow analysis of the changes in out-of-pocket costs over time. The principal objective of the survey is to collect data which provide a continuous flow of information on the buying habits of different types of consumer units.⁴ The data are used in a wide variety of research by government, business, labor, and academic analysts, including the periodic revisions of the Consumer Price Index.

The CE is conducted by the Bureau of the Census for the BLS. It consists of two components: a quarterly Interview survey in which the expenditures of consumer units are obtained in five interviews conducted every 3 months; and a Diary, or recordkeeping, survey, completed by participating consumer units for two consecutive 1-week periods. Both components query an independent sample of 5,000 consumer units per reference period in areas which are representative of the total U.S. civilian population.⁵ The Interview survey is a rotating panel survey designed to obtain data on the types of expenditures which respondents can recall for a period of 3 months or longer, including expenditures made on overnight trips. In general, these include relatively large expenditures, such as those for real property, automobiles, and major appliances, or expenditures which occur on a fairly regular basis, such as for rent, utilities, or medical care. The Diary survey is designed to obtain expenditures on small, frequently purchased items which are normally difficult for respondents to remember. It excludes expenditures incurred by members of the consumer unit while away from home overnight or longer.

Medical care expenditures and reimbursed amounts⁶ are collected in the Interview survey. Out-of-pocket expenditures are computed by subtracting reimbursements by third parties from the total payments for an expenditure by the household.⁷ Purchases of over-the-counter drugs, medical supplies, and miscellaneous items are collected in the Diary survey.

The National Health Accounts measure total aggregate health costs of the Nation. The NHA covers the Social Security population which includes inhabitants of U.S. territories, military personnel, and U.S. citizens outside the United States—populations not covered in the CE. They are developed by the Health Care Financing Administration, U.S. Department of Health and Human Services, to be consistent in concept with the gross national product (GNP). Total personal health care costs are measured primarily from administrative data. The sources of data include Personal Consumption Expenditures (PCE) from the National Income and Product Accounts of the Bureau of Economic Analysis, U.S. Department of Commerce, a sample of business receipts from the *Statistics of Income* published by the Internal Revenue Service, and data from the Annual Survey of Hospitals and the monthly National Hospital Panel Survey, both from the American Hospital Association. Patient payments are calculated as the residual of total health care costs less estimated total third-party payments, and conform, in concept, to the CE out-of-pocket costs.

Comparing the data

Expenditures for selected medical care categories⁸ from the two series are compared for the 1980-84 period. Because of lower population coverage in the CE, we expect its reported expenditures to be somewhat less than those of the NHA. However, we expect similarity in the direction of annual changes and in the proportion of money spent on health categories. CE medical care expenditure levels are generally below those of NHA, but the aggregate CE/NHA ratios for the selected items are fairly constant. Also, there is a similarity in the proportion of amounts spent for commodities and services.

Over the 5-year period, the CE/NHA relationship has been relatively constant for aggregate selected medical expenditures, improving for medical commodities, but declining for medical services. (See table 2.) However, a decline is noted for commodities in 1984 and this, along with the decline in services, results in some overall decline in the relationship between the sources in that year. However, it is difficult to judge the significance of such changes. Any conclusions as to trends will have to be based on data for longer periods.

Annual percent changes reflect differences in the levels of aggregate expenditures from the two sources. (See table 3.) However, while the changes differ more for component estimates, the difference in annual movement is similar over most of the period for the selected medical care total.

Between 1983 and 1984, expenditures for health rose 5 percent in the CE, and 10 percent in the NHA. Although the 1984 CE results are preliminary, a slowing of the increases is consistent with the drop in inpatient hospital care. It is also consistent with the rapid growth in the use of less costly medical service alternatives such as health maintenance organizations (HMO's) and ambulatory services.⁹ Because of the volatility in the economics of the health industry, there

Table 2. Aggregate and per capita expenditures of all U.S. consumer units for medical care from Consumer Expenditure Survey and National Health Accounts and CE/NHA ratios, 1980-84

Expenditure category	Consumer Expenditure Survey					National Health Accounts ¹					CE/NHA ratios ²				
	1980	1981	1982	1983	1984	1980	1981	1982	1983	1984	1980	1981	1982	1983	1984
Aggregate expenditures (billions)															
Selected medical care, total ³	\$44.5	\$48.1	\$51.9	\$56.9	\$59.9	\$52.2	\$58.0	\$62.2	\$68.0	\$75.1	.85	.83	.83	.84	.80
Medical commodities	12.9	15.2	16.2	18.2	19.3	19.0	20.7	21.1	23.0	25.2	.68	.73	.77	.79	.77
Drugs and medical supplies	10.6	12.7	13.7	15.2	16.1	14.8	16.2	16.9	18.2	19.7	.71	.78	.81	.84	.82
Medical equipment and supplies	2.3	2.5	2.6	3.0	3.2	4.2	4.5	4.2	4.8	5.5	.56	.56	.61	.62	.59
Medical services	31.6	32.9	35.6	38.7	40.6	33.2	37.3	41.1	45.0	49.9	.95	.88	.87	.86	.81
Professional services	26.9	27.4	28.8	32.3	34.0	27.2	30.3	33.4	36.4	40.8	.99	.91	.86	.89	.83
Hospital care ⁴	4.7	5.5	6.8	6.4	6.6	6.0	7.0	7.7	8.6	9.1	.78	.79	.89	.74	.73
Per capita expenditures															
Selected medical care, total ³	\$199	\$215	\$226	\$242	\$253	\$221	\$243	\$258	\$280	\$305	.90	.88	.88	.87	.83
Medical commodities	58	67	70	77	82	81	87	87	95	102	.72	.78	.80	.82	.79
Drugs and medical supplies	48	56	59	64	68	63	68	70	75	80	.76	.83	.84	.86	.85
Medical equipment and supplies	10	11	11	13	14	18	19	17	20	22	.59	.59	.65	.65	.61
Medical services	141	148	156	165	171	140	156	171	185	203	1.00	.94	.92	.89	.84
Professional services	120	123	126	138	143	115	127	139	150	166	1.04	.96	.91	.92	.86
Hospital care ⁴	21	25	30	27	28	25	29	32	35	37	.82	.84	.93	.77	.75

¹ Data are from the Health Care Financing Administration, U.S. Department of Health and Human Services.

³ Excludes nursing home care, medical equipment repairs, and health insurance.

² Ratios are based on unrounded data.

⁴ Excludes nonpatient revenues of community hospitals. The 1980 estimates are derived from both 1980 and 1981 data.

are factors leading to higher costs which may be balanced by others tending to lower costs. It will take several years to evaluate the impact of these changes.

The proportion of expenditures for medical categories has been fairly constant since 1980. (See table 4.) CE data show slightly more being spent on medical services, compared with NHA data, and slightly less on commodities. The estimates for 1984 are typical of the proportions spent over the 5-year period. In 1984, CE reported \$60 billion in out-of-pocket medical expenditures. Of this amount, 32 percent was spent on medical commodities and 68 percent on services. NHA data show similar percentages spent for medical commodities and services, but the out-of-pocket medical expenditures were higher, \$75 billion in 1984.

Per capita spending. The population coverage of the CE and NHA differs and affects the level of the estimates. The effect is removed when the data are compared on a per capita basis. (See table 2.) Although the pattern of differences is essentially the same as when measured with aggregates, these ratios, adjusted for population coverage, show that the estimates from the two sources are fairly close for the selected items total. The CE medical services estimates were approximately the same as those from the NHA in 1980, and have declined somewhat since.

Data limitations

In addition to the basic difference in the sources (household survey versus a combination of survey data and administrative records), there are conceptual differences between CE and NHA that cannot be completely reconciled. However, adjustments can and have been made to make the comparison feasible.

Differences in the estimates are partly the result of differences in estimation methods. The CE is a household interview survey designed to provide comprehensive information about household expenditures and data for weighting the Consumer Price Index. Survey interviewers ask consumer units about expenditures for detailed medical care items. The responses are edited, tabulated, weighted by population estimates, and summed over consumer units, by item.¹⁰

In comparison, the NHA measures total health costs using administrative data adjusted for differences in concept, coverage, timing, and nonresponse. For example, its estimates for medical commodities are based on the PCE. To obtain patient payments for drugs and sundries, PCE estimates are adjusted by subtracting workers' compensation, medicare, and temporary disability program payments.¹¹ In addition, PCE estimates are subject to annual revision, and 5-year benchmark revisions are also made. Internal Revenue Service business income estimates, one of the sources on which

Table 3. Annual percent change in medical care expenditures in the Consumer Expenditure Survey and National Health Accounts, 1981-84

Expenditure category	Consumer Expenditure Survey				National Health Accounts ¹			
	1981	1982	1983	1984	1981	1982	1983	1984
Selected medical care, total ²	8.1	7.8	9.7	5.3	11.1	7.2	9.3	10.4
Medical commodities	17.5	6.9	12.2	6.0	9.0	1.9	9.0	9.6
Medical services	4.3	8.2	8.5	5.0	12.4	10.2	9.5	10.9

¹ Excludes nonpatient revenues of community hospitals. Data are from the Health Care Financing Administration, U.S. Department of Health and Human Services.

² Excludes nursing home care, medical equipment repairs, and health insurance.

NOTE: Percent changes are derived from unrounded data.

Table 4. Percent distribution of annual aggregate expenditures for medical care from Consumer Expenditure Survey and National Health Accounts, 1980-84

Expenditure category	Consumer Expenditure Survey					National Health Accounts ¹				
	1980	1981	1982	1983	1984	1980	1981	1982	1983	1984
Selected medical care, total ²	100	100	100	100	100	100	100	100	100	100
Medical commodities	29	31	31	32	32	36	36	34	34	33
Drugs and medical supplies	24	26	26	27	27	28	28	27	27	26
Medical equipment and supplies	5	5	5	5	5	8	8	7	7	7
Medical services	71	69	69	68	68	64	64	66	66	66
Professional services	61	57	56	57	57	52	52	54	53	54
Hospital care ³	10	12	13	11	11	12	12	12	13	12

¹ Data are from the Health Care Financing Administration, U.S. Department of Health and Human Services. ³ Excludes nonpatient revenues of community hospitals. The 1980 estimates are derived from both 1980 and 1981 data.

² Excludes nursing home care, medical equipment repairs, and health insurance.

NHA professional service estimates are based, are adjusted to include direct payments by consumers to health care deliverers which are not covered in the Internal Revenue Service data. Also, annual hospital survey data are adjusted by monthly survey data to estimate calendar-year amounts.¹²

Not only are the estimation methodologies of CE and NHA different, but as part of the procedures, the items are classified differently. In general, for this study, classification differences are reconciled (although not completely) by

grouping subcategories in CE to match more aggregated categories in NHA.

THIS REVIEW SHOWS general consistency and similarity between the CE and NHA data, giving us confidence in the CE estimates. As data from the continuing Consumer Expenditure Survey becomes available, we will evaluate the results; however, emphasis will be on analyzing expenditures by characteristics. □

—FOOTNOTES—

¹ Medicare and medicaid are Federal health insurance programs. Medicare, initially established in 1966 for the aged, was expanded in 1973 to include disabled beneficiaries under the Social Security and railroad retirement programs. It was again expanded in 1978 to include persons under 65 years of age who require dialysis or a kidney transplant for end-stage renal disease. Medicaid was established in 1966 to provide health insurance for certain low-income families.

² Katherine R. Levit, Helen Lazenby, Daniel R. Waldo, and Lawrence M. Davidoff, "National Health Expenditures, 1984," *Health Care Financing Review*, Fall 1985, p. 16.

³ The Consumer Expenditure Survey, a sample survey, is subject to two types of errors. Sampling errors occur because the data are collected from a sample rather than the entire population. Nonsampling errors result from an inability or unwillingness of the respondents to provide correct information, differences in interviewer ability, mistakes in recording or coding, or other processing errors. Standard error tables are available from the Bureau of Labor Statistics. NHA estimates are subject to estimation, and sampling errors. While there are no statistical measures of error for the residual estimates, there is estimation error, and a residual is subject to error from both component estimates from which it is derived. For further discussion of NHA concepts and estimation, see Levit and others, "National Health," pp. 27-30. The NHA estimates are also subject to revision as new estimates become available from the source data and new methodologies are employed.

⁴ A consumer unit consists of all members of a particular housing unit or other type of living quarters who are related by blood, marriage, or adoption, or some other legal arrangement, such as foster children. Consumer unit determination for unrelated persons is based on financial independence.

⁵ The Consumer Expenditure Survey population includes the civilian noninstitutional population of the United States, as well as that portion of the institutional population living in the following group quarters: boarding house facilities for students and workers; staff units in hospitals and homes for the aged, infirmed, or needy; permanent living quarters in hotels and motels; and mobile home parks. Armed Forces personnel living outside military installations were included in the coverage while Armed Forces personnel living on post were excluded. Rural data are not available in the CE survey from 1981 through 1983 because the rural sample was discontinued during that period.

⁶ Reimbursements are credited when received and do not necessarily refer to the period of the expenditure. However, on an annual basis, this time discrepancy is not considered to have much effect.

⁷ Annual aggregate expenditures for CE medical care were derived for the total population. For years in which rural data were not collected, urban expenditures were adjusted by ratios of total U.S. and urban U.S. aggregates from the most recent period available.

⁸ Health insurance is excluded from the comparisons because the out-of-pocket payments are not available from the National Health Accounts. Nursing home care is also excluded from the comparisons because the coverage in the two sources is not comparable.

⁹ For further details, see Levit and others, "National Health," p. 4.

¹⁰ "Consumer Expenditures and Income," *BLS Handbook of Methods*, Bulletin 2134-1 (Bureau of Labor Statistics, 1982).

¹¹ Levit and others, "National Health," p. 30.

¹² Levit and others, "National Health," p. 27.