



PRICES AND SPENDING



How have healthcare expenditures changed? Evidence from the Consumer Expenditure Surveys

By Lekhnath Chalise

In 2018, U.S. households allocated an average of 8.1 percent of spending to healthcare—a noticeable proportion of their total spending. The share spent on healthcare has increased over time, rising from 5.9 percent in 2004. Dollars spent on healthcare have also increased from \$2,574 in 2004 to \$4,968 in 2018 (93 percent), or about 4.7 percent annually on average during this period.¹ From 2017 to 2018, dollars spent on healthcare grew 0.8 percent, and 6.9 percent from 2016 to 2017.

In addition, healthcare spending varies by income and by several demographic characteristics. This increase in U.S. healthcare spending had several contributing factors such as population growth (particularly among older consumers); more service utilization; and higher service price and intensity.² Innovation in drugs, technologies, and procedures were also expensive to develop, which can increase healthcare prices that contribute to rising expenditures. In most years, healthcare prices increased faster than the rate of inflation and gross domestic product.³

This **Beyond the Numbers** article analyzes the consumer spending patterns on major healthcare components across income quintiles, age, race and ethnicity, and homeownership status of consumer units (CUs) from 2004 to 2018.⁴ Using data from the Consumer Expenditure Surveys (CE), this article also describes the effects of prices on healthcare expenditures.

Note that the results cited in this article are based on tabular data. Therefore, no statistical significance testing is performed, as such tests require use of <u>microdata</u>. Results should be interpreted accordingly.

Data description

The analysis for this article is based on CE data from 2004 to 2018. The CE data are collected by the Census Bureau for BLS in two surveys: the Interview Survey for major and/or recurring items, and the Diary Survey for more minor or frequently purchased items. (See the *Handbook of Methods* for the CE program for its methods.) Medicare part D expenditures were included from their inception in 2006. (Also see the BTN article by Ann Foster and Craig Kreisler, 2011 on Medicare part D).⁵ Because of the 2014 improvements to the Interview Survey questionnaire for health insurance—estimates beginning in 2014 are not strictly comparable to prior years.⁶ Part of this article also uses data from the Consumer Price Index (CPI). (See the *Handbook of Methods* for the CPI program for its methods.) This article is a continuation of many BLS articles explaining healthcare spending using CE data.

Dollars and shares of healthcare spending

Healthcare expenditures have risen faster than overall spending, increasing 93 percent from 2004 to 2018, compared with a 41-percent rise for total expenditures. The share of healthcare spending was 5.9 percent in 2004, which had increased to 8.1 percent in 2018. Average healthcare expenditures rose steadily, even during the Great Recession of 2008–09 and despite the decline in total consumer expenditures during that time.⁷ However, the spike in spending from 2013 to 2014 was due to a change in the CE questionnaire wording. The health insurance questions were revised from 3-month recall questions to questions about the amount of last payment and the payment period. As a result, more consumer units reported health insurance expenditures in 2014 compared with 2013, and mean expenditure reported increased. (See the 2015 CE annual news release.)⁸ These new estimates also reduced respondent's burden to calculate the quarterly expenditures, as BLS calculates the quarterly estimates based on the amount of last payment. The change in collection method expanded the scope of healthcare spending, and shares remained mostly flat after 2014 with a marginal increase in dollar value year after year. (See chart 1.)



Spending patterns on healthcare components

Health insurance, medical services, drugs, and medical supplies are the four major components of the healthcare expenditures as defined in the CE. Health insurance provides access to healthcare in order to minimize the risk of catastrophic financial losses due to medical expenses by more evenly distributing healthcare spending overtimes. Therefore, health insurance affects other healthcare expenditures. It is not surprising that health insurance is the biggest portion of healthcare expenditures in each year identified and accounted for 68.5 percent of total healthcare spending in 2018. (See chart 2.) In 2018, households spent 18.3 percent of their healthcare spending on medical services, 9.7 percent on drugs, and 3.5 percent on medical supplies.



The healthcare share of total household expenditures ranged from 7.8 percent to 8.2 percent in the last 5 years. (See table 1.) The healthcare spending share was nearly unchanged—falling only 0.1 percentage point in 2018 from 8.2 percent in 2017. The spending declines in health insurance and drugs more than offset spending increases in medical services and medical supplies. The share of health insurance premiums paid to total healthcare spending declined by 0.8 percentage point to 68.5 percent in 2018 from 2017. The share of spending on drugs is gradually decreasing, with a 1.6-percentage point decline from 2014 to 2018.

Table 1. Average annual e	xpenditures on healthcare	and components of al	I consumer units, 2014–18
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Item	2014	2015	2016	2017	2018
Healthcare expenditures	\$4,290	\$4,342	\$4,612	\$4,928	\$4,968
Share of healthcare (in percent)	8.0	7.8	8.0	8.2	8.1
Components of healthcare expenditures					
Health insurance	2,868.0	2,977.0	3,160.0	3,414.0	3,405.0
Share (in percent)	66.9	68.6	68.5	69.3	68.5
Medical services	790.0	791.0	838.0	872.0	909.0
Share (in percent)	18.4	18.2	18.2	17.7	18.3
Drugs	486.0	425.0	463.0	486.0	483.0
Share (in percent)	11.3	9.8	10.0	9.9	9.7
Medical supplies	146.0	149.0	151.0	156.0	172.0
Share (in percent)	3.4	3.4	3.3	3.2	3.5

See footnotes at end of table.

Source: U.S. Bureau of Labor Statistics, Consumer Expenditure Surveys.

Healthcare spending varies with demographics

Results from CE data show that healthcare spending varied across income, age, homeownership status, and ethnicity of origin. Higher incomes allow households to spend more, compared with lower income households. Older age individuals have different healthcare needs than middle-age and younger people. The ethnic origin of household members may also have an impact on healthcare spending as people from diverse origins may perceive healthcare differently. For example, people from some cultures may visit healthcare providers only in an emergency or during periods of illness, but not for routine preventive care.⁹

Healthcare spending by income quintiles

One way of categorizing households is based on income quintiles: that is in 20-percent intervals from the lowest to the highest 20 percentile ranges. The 2018 CE data show that, as expected, those in the lowest income quintile spent fewer dollars on healthcare, while those in the highest income quintile spent more on healthcare. (See table 2.) However, the share of healthcare spending by each income quintile did not follow any pattern, the second income quintile spent the largest share on healthcare.

The second income quintile also paid the highest share of their health insurance premiums for commercial Medicare supplement insurance—Medicare part B and Medicare part D. The average age of reference persons in the second income quintile is older than in any other income quintile, which may indicate the inclusion of more Medicare eligible households.¹⁰ The spending share on medical services increased from the lowest to the highest income quintiles, with the highest income quintile accounting for 21.9 percent of their healthcare spending on medical services.

Item	All consumer units	Lowest 20 percent	Second 20 percent	Third 20 percent	Fourth 20 percent	Highest 20 percent
Average age of reference person	51.10	53.70	55.10	49.90	47.90	48.90
Average annual expenditures	\$61,224.13	\$26,398.71	\$39,967.97	\$51,728.65	\$69,130.70	\$118,780.66
Share of expenditures	100.00	100.00	100.00	100.00	100.00	100.00
Healthcare expenditures						
Mean	4,968.4	2,474.7	3,997.1	4,636.7	5,865.8	7,864.8
Share of annual expenditures	8.1	9.4	10.0	9.0	8.5	6.6
Health insurance						
Mean	3,404.7	1,744.7	2,776.4	3,167.2	4,102.0	5,231.5
Share of healthcare expenditures	68.5	70.5	69.5	68.3	69.9	66.5
Commercial Medicare supplement premium						
Mean	298.3	287.0	485.6	353.7	213.3	152.2
Share of health insurance premium	8.8	16.4	17.5	11.2	5.2	2.9
Medicare part B premiums						

Table 2. Healthcare spending by income quintiles, 2018

See footnotes at end of table.

Table 2. Healthcare	e spending by	income	quintiles,	2018
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Item	All consumer units	Lowest 20 percent	Second 20 percent	Third 20 percent	Fourth 20 percent	Highest 20 percent
Mean	665.2	799.1	1,043.9	717.0	462.3	304.0
Share of health insurance premium	19.5	45.8	37.6	22.6	11.3	5.8
Medicare part D premiums						
Mean	96.7	99.5	164.6	108.1	64.0	47.3
Share of health insurance premium	2.8	5.7	5.9	3.4	1.6	0.9
Medical services						
Mean	908.6	348.2	627.7	800.6	1,045.5	1,719.6
Share of healthcare expenditures	18.3	14.1	15.7	17.3	17.8	21.9
Drugs						
Mean	483.5	304.7	459.6	505.2	514.6	633.0
Share of healthcare expenditures	9.7	12.3	11.5	10.9	8.8	8.0
Prescription drugs						
Mean	284.7	184.5	292.5	288.8	309.0	348.7
Share of drugs	58.9	60.5	63.6	57.2	60.0	55.1
Non prescription drugs and vitamins						
Mean	198.8	120.2	167.1	216.4	205.6	284.3
Share of drugs	41.1	39.5	36.4	42.8	40.0	44.9
Medical supplies						
Mean	171.7	77.1	133.4	163.7	203.7	280.6
Share of healthcare expenditures	3.5	3.1	3.3	3.5	3.5	3.6

Note: This table uses unpublished data, which may differ from the published data due to rounding in expenditures. That is, published data are rounded to the nearest dollar.

Source: U.S. Bureau of Labor Statistics, Consumer Expenditure Surveys.

Healthcare spending by the age of reference person

In 2018, healthcare spending increased with the age of the reference person of a household from \$1,206 for those under 25 years to \$6,930 for those in the 75-years-and-older group. (See table 3.) Of the four healthcare components, spending was higher for the older age groups for two components: health insurance premiums, and drugs. The 65-years-and-older group spent less on medical services, compared with the 55- to 64- age group. The share of healthcare spending was also higher for the older age ranges—16.0 percent of annual expenditures for reference persons age 75-years-and-older, compared with 3.8 percent for reference persons under age 25. For the older group, annual spending was mostly driven by health insurance premiums paid and spent on drugs. Life cycle effects also explain part of the differences in spending. Commercial Medicare supplemental premiums were remarkably higher for reference persons age 65 years and older, with a 21.8-percent share of all health insurance premiums reflecting the eligibility of Medicare enrollment age. The proportionate spending on prescription drugs was higher for older age ranges, while the spending on nonprescription drugs was higher for younger ages.

Table 3. Age of reference person: Average annual expenditures and healthcare spending 2018

Item	All consumer units	Under 25 years	25–34 years	35–44 years	45–54 years	55–64 years	65 years and older	65–74 years	75 years and older
Number of consumer units (in thousands)	131,439	7,588	21,298	22,000	23,050	24,480	33,023	19,315	13,707
Consumer unit characteristics									
Income before taxes	\$78,635	\$32,268	\$74,082	\$96,581	\$109,366	\$88,342	\$51,624	\$60,735	\$38,786
Average annual expenditures	61,224	32,039	56,457	71,198	75,387	66,212	50,860	56,268	43,181
Healthcare expenditures									
Mean	4,968.4	1,205.5	3,071.8	4,316.9	5,138.1	5,742.9	6,802.2	6,711.2	6,930.3
Share of healthcare spending	8.1	3.8	5.4	6.1	6.8	8.7	13.4	11.9	16.0
Health insurance			1					1	
Mean	3,404.7	699.8	2,181.7	2,887.8	3,483.3	3,848.3	4,775.5	4,761.2	4,795.8
Share of healthcare spending	68.5	58.1	71.0	66.9	67.8	67.0	70.2	70.9	69.2
Commercial Medicare Supplement									
Mean	298.3	9.9	6.1	18.7	42.2	131.1	1,042.1	933.8	1,194.7
Share of health insurance premium	8.8	1.4	0.3	0.6	1.2	3.4	21.8	19.6	24.9
Medicare Part B premium									
Mean	665.2	36.3	42.1	86.2	179.4	382.6	2,145.9	2,117.3	2,186.1
Share of health insurance premium	19.5	5.2	1.9	3.0	5.1	9.9	44.9	44.5	45.6
Medicare Part D Premium									
Mean	96.7	1.2	3.6	9.4	20.4	41.1	331.3	302.0	372.6
Share of health insurance premium	2.8	0.2	0.2	0.3	0.6	1.1	6.9	6.3	7.8
Medical services									
Mean	908.6	313.6	588.4	946.0	986.6	1,143.7	998.2	935.4	1,086.8
Share of healthcare spending	18.3	26.0	19.2	21.9	19.2	19.9	14.7	13.9	15.7
Drugs									
Mean	483.5	131.3	213.1	349.5	490.7	562.1	768.3	751.5	791.9
Share of healthcare spending	9.7	10.9	6.9	8.1	9.6	9.8	11.3	11.2	11.4
Nonprescription drugs and vitamins									
Mean	198.8	79.2	128.4	161.0	212.7	200.1	289.8	290.6	288.7

See footnotes at end of table.

Item	All consumer units	Under 25 years	25–34 years	35–44 years	45–54 years	55–64 years	65 years and older	65–74 years	75 years and older
Share of drugs	41.1	60.3	60.2	46.0	43.3	35.6	37.7	38.7	36.5
Prescription drugs									
Mean	284.7	52.1	84.7	188.6	278.0	362.0	478.5	460.9	503.2
Share of drugs	58.9	39.7	39.8	54.0	56.7	64.4	62.3	61.3	63.5
Medical supplies									
Mean	171.7	60.8	88.7	133.6	177.5	188.8	260.1	263.2	255.8
Share of healthcare spending	3.5	5.0	2.9	3.1	3.5	3.3	3.8	3.9	3.7

Table 3. Age of reference person: Average annual expenditures and healthcare spending 2018

Note: This table uses the unpublished data, which may differ from the published data due to rounding in expenditures. That is, published data are rounded to the nearest dollar.

Source: U.S. Bureau of Labor Statistics, Consumer Expenditure Surveys.

However, a closer look into healthcare spending by age group in specific years reveals some exceptions. The years 2004, 2005, 2015, and 2018 are atypical in the following way: In most years over the 2004–18 period, healthcare expenditures rose with age for all groups up to ages 65–74, then declined for the 75-years-and-older group. One reason for lower spending by the oldest age of reference person category than the 65- to 74-years category, may be their household size, which consists of fewer individuals, compared with the household size of those in the 65- to 74-year-old category. But in 2004, 2005, 2015, and 2018, healthcare expenditures also increased for the oldest group (75 years and older), compared with the age 65- to 74-group. The impact of household size might be offset by the aging factors in those exceptional years. However, what these factors are specifically, and why they offset the family size effect only in these years, is unclear. Regardless, these differences must be interpreted with caution; as noted earlier, they are derived from tabular data, and therefore are not tested for statistical significance.



Note that in all but one of the years pictured, healthcare expenditures rise with age. However, for 2017, expenditures decline for the 75-years-and-older group. (This latter pattern is common to all the other years not displayed in chart 3.)

Healthcare spending by homeowners and renters

Homeowners and renters spent differently on healthcare. The spending on healthcare increased steadily for both groups over time, however, the rate increased faster for homeowners than for renters since 2004. (See chart 4.) In 2018, healthcare spending increased by 1.3 percent from year-earlier levels for homeowners, but declined by 3.1 percent for renters. Although the differences in spending by homeowners and renters are notable, they may not be due to differences in home ownership or rental statuses. Instead, housing tenure may proxy for an age-and-income interaction, as homeowners tend both to be older and have a higher income than renters.



Healthcare spending by race and ethnic origin

Historically, households with Hispanic or Latino and Black or African American reference persons spent less on healthcare than the White and all other category. All groups increased their spending on healthcare gradually over the 2004–18 period, however spending by White and all other has increased more rapidly since 2014. (See chart 5.) Caution should be taken in interpreting these figures, as income is also correlated to ethnicity and race, and because consumer units with White, non-Hispanic reference persons have higher income on average, the income effect undoubtedly plays an important role.



Health insurance is a resource that provides access to healthcare for most of the households and accounts for more than two-thirds of healthcare costs per household. The spending on health insurance premiums by race and ethnicity also corresponds with the total healthcare spending, whereas Hispanic or Latino, or Black or African Americans spent less on health insurance, compared with the White and all other group. (See chart 6.)



Effect of prices on healthcare spending

Rising prices for healthcare services are likely to increase the total healthcare spending of households. The Consumer Price Index for Urban Consumers (CPI-U) measures the change in price over time.¹¹ The CPI-U for healthcare services (called "medical services" in the CPI-U) was slightly lower than the CPI-U for all items until 1983 (since the series began), however, both were gradually increasing. (See chart 7.) After 1983, the CPI-U for healthcare increased faster than the CPI-U for all items. Faster increases in healthcare inflation increased the expenditures reported in the CE. New technological innovations, more availability of healthcare services, and increased quality in services were likely contributors for higher prices. The CPI-U for all items less medical care is only slightly below the CPI-U for all items. This indicates that, while the much larger increase in annual healthcare prices observed from 1985 onward influence the total CPI-U, the weight of healthcare prices in that index is relatively small.



Conclusion

Healthcare spending shares are a notable portion of total household expenditures. Health insurance premiums accounted for over two-thirds of total healthcare spending among the four major components of healthcare spending (health insurance premiums, medical services, drugs, and medical supplies). Over time, the consumer spending components of healthcare have changed. As CE data indicate, spending on drugs has decreased while spending on the other three components has increased.

Household spending on healthcare varied by income and other demographic characteristics, such as age, race and ethnicity, and home ownership status. Healthcare spending has increased over time for all income quintiles, with the largest share of total spending by the second income quintile in 2018. Healthcare spending increased with age, up to the 65- to 74-age group in every year studied. It decreased for the 75-years-and-older group for most of the years except 2004, 2005, 2015, and 2018. In terms of spending on drugs, younger age reference person households spent less on prescription drugs while older age groups spent more on prescription drugs. Homeowners spent more on healthcare than renters in each year studied, which may be an age-and-income interaction, not housing tenure itself. Consumer units whose reference person is Black or African American, as well as those whose reference person is Hispanic or Latino, spent less on healthcare than those whose reference person is both non-Black and non-Hispanic. Growth in healthcare expenditures exceeded the total household spending growth over the 2004–18 period, which is explained partly by the faster growth in inflation for healthcare measured by the CPI in the same period.

The results in this article are based on tabular data, and therefore are not tested for statistical significance, which requires the use of <u>microdata</u>. Differences described over time or among demographic groups should be interpreted accordingly.

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NOTES

¹ Based on the assumption that prices grew at a continuous rate over the period. The result, 4.8 percent, is derived from the formula for continuously compounding interest, or $A_t = A_0e^{rt}$, where A_t is average annual healthcare expenditures in 2018 (or \$4,968); A_0 is average annual healthcare expenditures in 2004 (\$2,574); *e* is the transcendental number (approximately equal to 2.718); *r* is the average rate of growth (computed to be 4.7 percent annually); and *t* is the number of years (14 in this case, because the change from 2004 to 2005 is the first annual change, so that there are 14 changes in total).

² Joseph L. Dieleman, Ellen Squires, Anthony L. Bui, et al. "Factors associated with increases in U.S. healthcare spending, 1996– 2013." *Journal of the American Medical Association* (November 2017), <u>https://jamanetwork.com/journals/jama/fullarticle/2661579</u>.

³ Rabah Kamal, Daniel McDermott, and Cynthia Cox, "How has U.S. spending on healthcare changed over time?" *Health Spending*, December 20, 2019, <u>https://www.healthsystemtracker.org/chart-collection/u-s-spending-healthcare-changed-time/</u>.

 $\frac{4}{1}$ A consumer unit (CU) consists of either: (1) all members of a particular household who are related by blood, marriage, adoption, or other legal arrangements; (2) a person living alone or sharing a household with others or living as a roomer in a private home or lodging house or in permanent living quarters in a hotel or motel, but who is financially independent; or (3) two or more persons living together who use their income to make joint expenditure decisions.

⁵ Ann C. Foster and Craig J. Kreisler, "Part D prescription drug coverage and healthcare spending by seniors on Medicare," *Beyond the Numbers: Prices & Spending*, vol. 2, no. 8 (U.S. Bureau of Labor Statistics, August 2011), <u>https://www.bls.gov/opub/btn/archive/part-d-prescription-drug-coverage-and-health-care-spending-by-seniors-on-medicare.pdf</u>.

⁶ Consumer Expenditures (Annual) News Release, USDL-15-1696 (U.S. Department of Labor, September 2015), <u>https://</u>www.bls.gov/news.release/archives/cesan_09032015.htm.

^{*I*} According to the National Bureau of Economic Research, the U.S. economy entered a recession in December 2007 and exited recession in June 2009. For more information, see "U.S. business cycle expansions and contractions," National Bureau of Economic Research, <u>http://www.nber.org/cycles.html</u>.

⁸ Consumer Expenditures (Annual) News Release, September 3, 2015. Available at <u>https://www.bls.gov/news.release/archives/</u> <u>cesan_09032015.htm</u>.

⁹ Rani R. Pallegadda, Elsie J. Wang, Latha P. Palaniappan, Puja K. Gupta, and Christopher J. Koenig. "How does culture influence preventive service utilisation among Asian Indians living in the USA? A qualitative study." *International Journal of Qualitative Research in Services*, no. 3, June 2014, pp. 232–47, <u>https://www.researchgate.net/publication/</u> 232084869 How does culture influence preventive service utilisation among Asian Indians living in the USA A qualitative study.

¹⁰ The reference person is the first member mentioned by the respondent in the CE Surveys when asked to "start with the name of the person or one of the persons who owns or rents the home." It is with respect to this person that the relationship of other consumer unit members is determined.

¹¹ The CPI comprises two indexes: CPI-U and CPI-W. The CPI-U is a more general index and seeks to track retail prices for all urban consumers, in contrast, the CPI-W is more specialized index and seeks to track retail prices for urban wage earners and clerical workers. For most measures, CPI-U is used. For more information on these indexes, see https://www.bls.gov/cpi/overview.htm.

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