Chapter 1: Rise of a Massive Health Sector

By:

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Medical Industry Leadership Institute Open Education Hub

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Chapter 1

1.1 Growth in Health Spending, 1929 to Present[1]

Spending on health care in the United States has increased more than 60-fold since 1929.[2] This remarkable growth is measured in constant dollars that equalize general purchasing power across decades.[3] In contrast, the U.S. economy grew only 12-fold over the same period (figure 1.1a).

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[1]This content is available online at <https://hub.mili.csom.umn.edu/content/m10001/1.8/>.

[2]U.S. health expenditures are tracked by the Centers for Medicare and Medicaid Services (CMS). Historical data from 1960-2011 are on-line (CMS 2012). Data for 1929-1960 are reported in Cooper, Worthington and McGee, 1973. These historical figures were adjusted by author assuming that the difference between CMS and SSA-reported figures in 1960 persisted back to 1929.

[3]Both GDP and health spending have been adjusted using the GDP price deflator reported by the Bureau of Economic Analysis.

1.1a In constant dollars, national health spending increased more than 60-fold over the past eight decades; real GDP grew far less in this period

Index of real spending using GDP price deflator: 1929=100
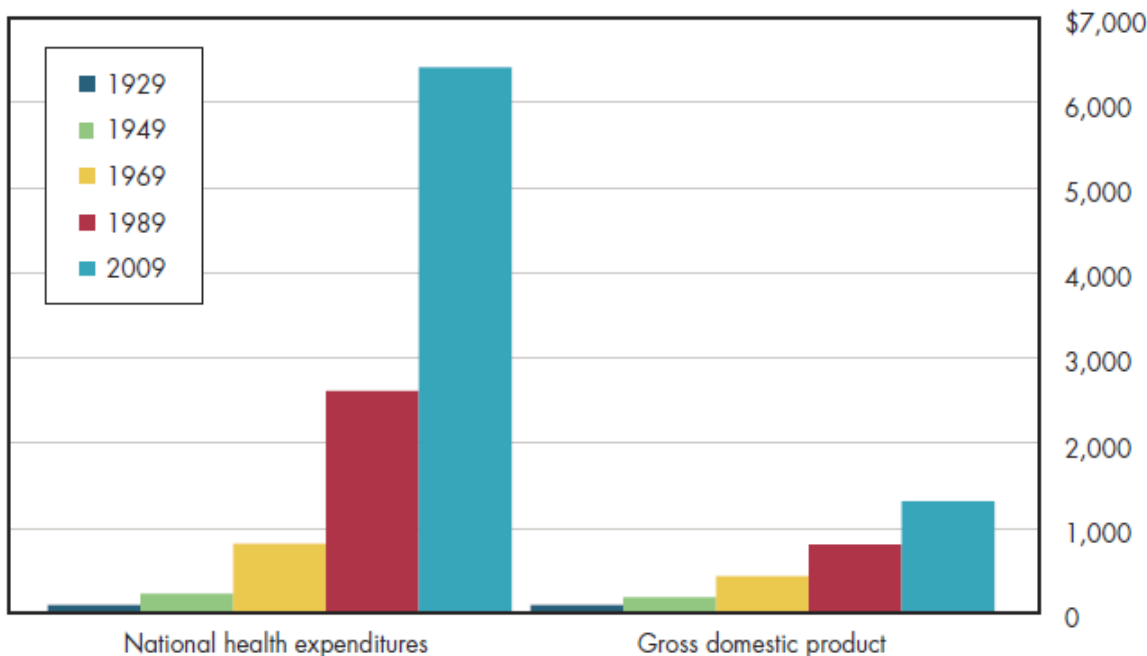
National health expenditures (NHE) and NHE per capita are the best available single measures of the size of the health sector.[4] NHE reflects the total amount of spending on health care, including goods and services having to do with personal health care, public health activities, public and private health insurance, related investments in research, and capital investment.[5] Both gross domestic product (GDP) and NHE measure output only within the borders of the United States.[6]

The U.S. population is approximately 2.5 times as large as it was in 1929. Even when considering spending growth in per capita terms, inflation-adjusted health spending was 25 times as large at the end of these 80 years as at the start. GDP per capita quintupled (figure 1.1b). Does this mean that today's average Americans receive 25 times as much medical care as their counterparts did in 1929? It does not. Figures 1.1a and 1.1b show how the total dollars spent on health care changed over time, but the estimates shown are adjusted only for changes in general purchasing power rather than purchasing power within the health sector. Devoting 25 times as much real economic output to purchasing medical care is not equivalent to saying that U.S. residents receive 25 times as much medical services (for example, physician visits, hospital days) as they did in 1929.

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[4]The health sector is currently the largest single share of the economy (CMS 2011a). The National Health Expenditure Accounts (NHEA) are compatible with the National Income and Product Accounts (NIPA), but provide a more complete picture of the health care sector of the nation's economy in a single set of statistics. NHEA are comprehensive (including all main components of the health care system), multi-dimensional (tracking both expenditures and sources of funds), and consistent (using a common set of definitions that permits comparisons among categories and over time). A detailed explanation of the difference between the slightly higher NHE figure calculated by CMS and the one calculated by BEA for the NIPA is provided by Hartman, Kornfeld and Catlin (2010).

[5]Quick Definitions are at CMS (2011b). A complete description of definitions, sources and methods is at CMS (2011a).

[6]"The cost of medical care administered outside the U.S. is not included in the NHEA" (CMS 2011a:6). Thus, NHE currently does not capture medical tourism by U.S. residents, but it does capture medical tourism of people who come to the U.S. for medical care.

1.1b Even in per capita terms, real health spending increased approximately 25-fold in just 80 years while GDP per capita quintupled

Index of real spending using GDP price deflator: 1929=100
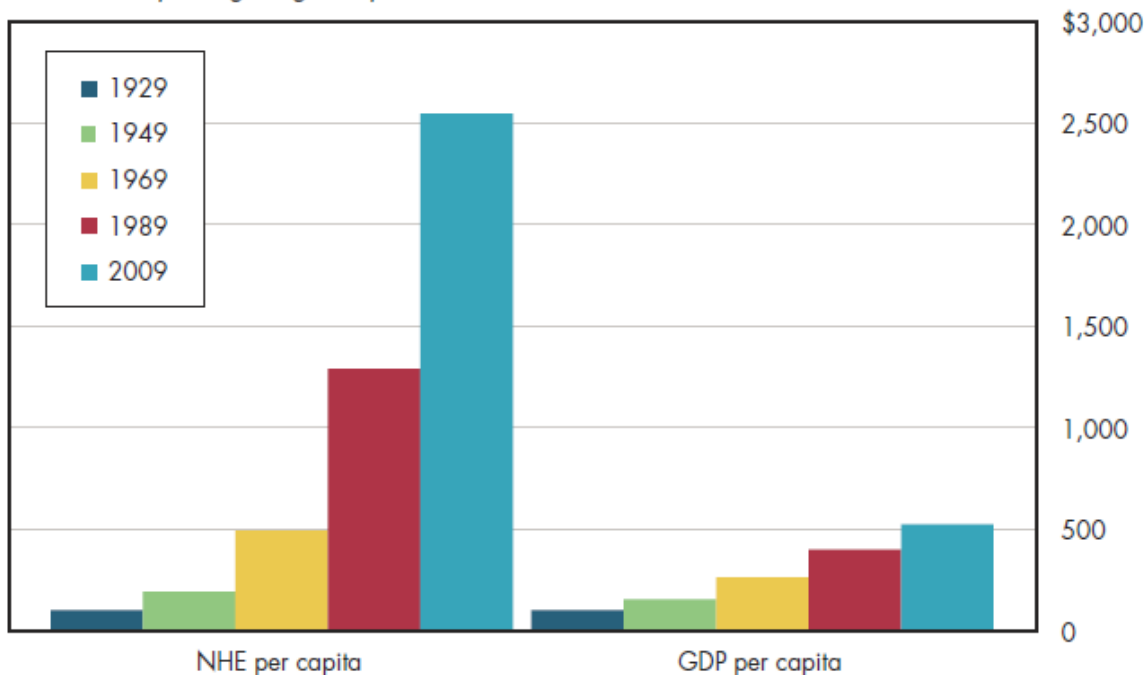
The GDP implicit price deflator is the most comprehensive measure of pure price inflation for the economy as a whole. The Consumer Price Index (CPI) is better known but covers only approximately 60 percent of the economy, omitting rural areas, government purchases, and investment goods. Because half of health spending currently is publicly funded, it is more accurate to use a price index, such as the GDP deflator, that broadly reflects the entire economy. Adjusting NHE by the GDP deflator reflects the opportunity cost of health care, which measures how the total value of other goods and services that society could have purchased instead of health care has changed over time, while excluding a cause of growth—economy-wide inflation— largely beyond the control of the health sector.

1.1 Downloads

Download Excel tables used to create both figures: Figures 1.1a/1.1b Tables[7] . Figures 1.1a and 1.1b both were created from the following table (the workbook includes all supporting tables used to create this table):

- Table 1.1. U.S. Total Real National Health Expenditures Using Alternative Price Deflators: 1929 to 2021

Download PowerPoint versions of both figures.

- Figure 1.1a Image Slide (as it appears above)[8]
- Figure 1.1a Editable Slide (can be formatted as desired)[9]
- Figure 1.1b Image Slide (as it appears above)[10]

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[7]https://hub.mili.csom.umn.edu/content/m10001/latest/1.1TAB.xls
[8]https://hub.mili.csom.umn.edu/content/m10001/latest/1.1aIMG.ppt
[9]https://hub.mili.csom.umn.edu/content/m10001/latest/1.1aDATA.ppt
[10]https://hub.mili.csom.umn.edu/content/m10001/latest/1.1bIMG.ppt

- Figure 1.1b Editable Slide (can be formatted as desired)[11]

1.2 References

Note that the downloadable Excel tables contain a detailed description of methods and sources; the extensive references are not replicated here. Below are references cited in footnotes for this module.

A. Centers for Medicare and Medicaid Services (CMS). 2011a. National Health Expenditures Accounts: Methodology Paper, 2011. Definitions, Sources, and Methods. Available at: http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/dsm-11.pdf (accessed January 10, 2013).
B. Centers for Medicare and Medicaid Services (CMS). 2011b. Quick Definitions for National Health Expenditure Accounts (NHEA) Categories. Available at: http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/quickref.pdf (accessed January 10, 2013).
C. Centers for Medicare and Medicaid Services (CMS), Office of the Actuary. 2012. National Health Expenditures by type of service and source of funds: CY 1960-2011. Last updated December 27, 2012. Available at: https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/NHE2011.zip (accessed January 10, 2013).
D. Cooper BS, NL Worthington and MF McGee. 1973. Compendium of National Health Expenditures Data. DHEW Pub No (SSA) 73-11903. Office of Research and Statistics.
E. Hartman MB, RJ Kornfeld, and AC Catlin. 2010. A Reconciliation of Health Care Expenditures in the National Health Expenditures Accounts and in Gross Domestic Product . Survey of Current Business, September 2010: 42-52. Available at: http://www.bea.gov/scb/pdf/2010/09%20September/0910_healthcare.pdf (accessed March 21, 2013).

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[11]https://hub.mili.csom.umn.edu/content/m10001/latest/1.1bDATA.ppt

Chapter 2

1.2 Growth in Inflation-Adjusted Health Output per Capita over 80 Years[1]

Adjusting medical care prices in several ways, inflation-adjusted health care output rose at least 20-fold over the past 80 years. Estimates of NHE output cannot be precise; thus, estimates of changes over decades are unavoidable approximations.[2] NHE includes many different goods and services. No adequate way exists to convert them to a common unit of output to measure a combined total. Therefore, adding all health care goods and services in proportion to their relative prices is customary.[3]

For decades, medical price inflation usually has outpaced general inflation. To gauge how much the quantity of NHE has grown exclusive of medical price changes, NHE must be deflated by a measure of price inflation specific to medical care. Because relative prices change over time (for example, the hourly rate of physician pay versus that of licensed practical nurses [LPNs]), the measured size of the health sector depends on the year of the prices used.[4]

Both the health care deflator for personal consumption expenditures (PCE) and the CPI for medical care have limitations.[5] The PCE health care deflator counts all household medical care use regardless of how it is financed.[6] Therefore, it is a more complete measure of price changes across the entire medical market. The

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[1]This content is available online at <https://hub.mili.csom.umn.edu/content/m10003/1.5/>.

[2]The same is true of measuring economic output in general, i.e., gross domestic product.

[3]This is identical to the approach used to estimate gross domestic product.

[4]For example, assume physicians are paid 3 times as much as LPNs in Year 1 and 4 times as much in Year 10. Assume that health output consisted of 1 million hours of physician time and the equivalent number of hours of LPN time in both years. Even though output is unchanged in this example, the measured size of the health sector would be 25% larger in Year 10 [1m. x (1 LPN wage unit) + 1m. x (3 LPN wage units) =4m. LPN wage units, whereas the same calculation substituting 4 LPN wage units to value each hour of physician time yields 5m. LPN wage units.

[5]Another important difference is that the PCE implicit price deflator is essentially equivalent to a chain-type price index. The BEA observes "chain-type estimates provide the best available method for comparing the level of a given series at two points in time" (BEA 2013a). The chief limitation of a fixed-weight price index such as the medical CPI is that it used fixed price weights in a base year and measures pure changes in prices. In the preceding example, where the weights (relative output of physicians vs. LPNs) did not change, such a price index is perfectly adequate since so long as we use either Year 1 or Year 10 prices, we will deduce there has been no change in output between the two years. But in reality, if physician prices go up faster than LPN wages, there may be some substitution of nurses for doctors (to the degree that's possible), so the weights would likely change. Total weighted output conceivably could decline in this instance. Thus, a fixed-price index would erroneously conclude that the "medical cost of living" had risen by 25% when in reality–once both substitution of lower-cost LPN services for higher-cost MD services was taken into account–the actual increase in the cost of living would be more modest. In contrast, a chain-type price index allows for weights to continuously change (e.g., annually) (technically, an implicit price deflator is calculated as the ratio of current-dollar value to the corresponding chained-dollar value multiplied by 100; according to the BEA, "the values of the IPD and of the corresponding "chain-type" price index are very close." (BEA 2013a). This is why Congress is debating whether to use the chained CPI rather than regular (fixed-weight) CPI in calculating cost-of-living increases for government programs. It would be more accurate and would save the federal government a growing amount with each passing year.

[6]The BEA calculates implicit price deflators for a large number of components of GDP, not just health care (BEA 2013b).

medical CPI is intended to reflect household out-of-pocket prices.[7] Consequently, it places a smaller weight on expensive services disproportionately paid by insurance, such as hospital care.[8] Either index shows that real health output is at least 20 times as large as it was in 1929 (figure 1.2a).

1.2a No matter what price index is used to standardize health purchasing power, real health output increased approximately 20-fold since 1929

Quantity index of real health output: 1929=100
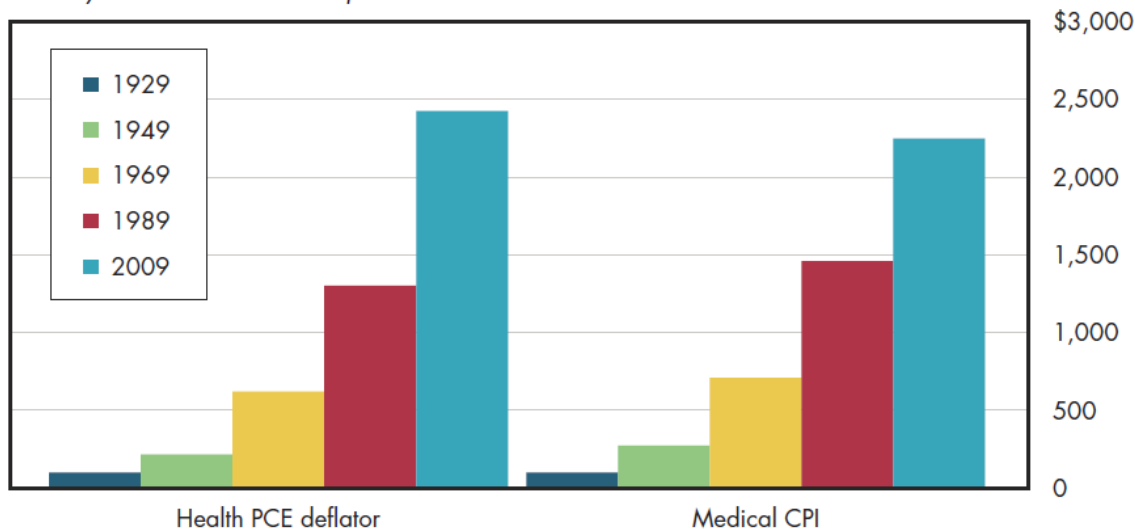
Note: Price index used to estimate real (inflation-adjusted) output of health care goods and services.

NHE generally includes only output that is bought or sold in markets (including hospital and doctor care, even if these are provided "free" to the patient). It understates total output by excluding informal care provided by family or friends despite its importance for long-term care patients.[9] Good data do not exist for every item included in the NHE.

Real health output per person rose at least eight-fold in this period (figure 1.2b)— an amount much more comparable to the quintupling of real economic output per resident shown in figure 1.1b. There is little question that this increase in health output per capita has contributed to better health and longevity. However, which of these health gains has been worth its cost is a matter of considerable debate.

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[7]The Bureau of Labor Statistics has been measuring prices of a broad range of items since 1913 (BLS 2013).

[8]AHRQ (2013) provides an extensive explanation of which medical price index is appropriate to use in different contexts.

[9]According to AARP, the economic value of family caregivers was $450 billion in 2009 (Feinberg et al. 2011). Inclusion of this cost would have added 18% to NHE that year.

1.2b Real health output per capita increased approximately eight-fold over 80 years, an increase well ahead of growth in total national output

Index: 1929=100
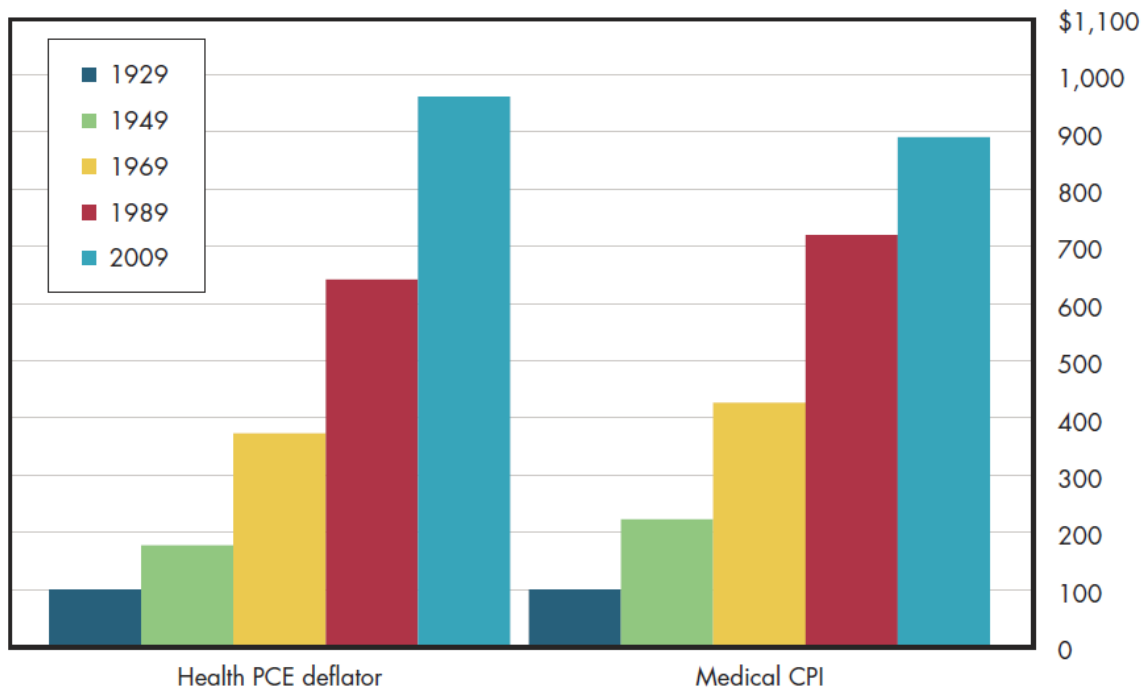
Note: Price index used to estimate real (inflation-adjusted) output of health goods and services.

2.1 Downloads

Download Excel tables used to create both figures: Figures 1.2a/1.2b Tables[10] . Figures 1.2a and 1.2b both were created from the following table (the workbook includes all supporting tables used to create this table):

- Table 1.1 | U.S. Total Real National Health Expenditures Using Alternative Price Deflators: 1929 to 2021

Download PowerPoint versions of both figures.

- Figure 1.2a Image Slide (as it appears above)[11]
- Figure 1.2a Editable Slide (can be formatted as desired)[12]
- Figure 1.2b Image Slide (as it appears above)[13]
- Figure 1.2b Editable Slide (can be formatted as desired)[14]

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[10]https://hub.mili.csom.umn.edu/content/m10003/latest/1.2TAB.xls
[11]https://hub.mili.csom.umn.edu/content/m10003/latest/1.2a.pptx
[12]https://hub.mili.csom.umn.edu/content/m10003/latest/1.2aDATA.pptx
[13]https://hub.mili.csom.umn.edu/content/m10003/latest/1.2b.pptx
[14]https://hub.mili.csom.umn.edu/content/m10003/latest/1.2bDATA.pptx

2.2 References

Note that the downloadable Excel tables contain a detailed description of methods and sources; the extensive references are not replicated here. Below are references cited in footnotes for this module.

A. Agency for Healthcare Research and Quality (AHRQ). 2013. Using Appropriate Price Indices for Analyses of Health Care Expenditures or Income Across Multiple Years. Last updated March 2013. Available at: http://meps.ahrq.gov/about_meps/Price_Index.shtml (accessed April 23, 2013).

B. Bureau of Economic Analysis (BEA). 2013a. NIPA Tables Help. Available at: http://www.bea.gov/national/nipaweb/NIPAHelp.htm (accessed September 3, 2013).

C. BEA. 2013b. Table 1.1.9. Implicit Price Deflators for Gross Domestic Product. Last revised July 31, 2013. Available at: http://www.bea.gov/iTable/iTable.cfm (accessed August 10, 2013).

D. Bureau of Labor Statistics (BLS). 2013. Consumer Price Index - All Urban Consumers (base period 1982-1984=100; not seasonally adjusted). Available at: http://www.bls.gov/data/#prices (accessed April 23, 2013).

E. Feinberg, Lynn, Susan C. Reinhard, Ari Houser, and Rita Choula. 2011. Valuing the Invaluable: 2011 Update. The Growing Contributions and Costs of Family Caregiving. Washington, D.C.: AARP Public Policy Institute. July 2011. Available at: http://assets.aarp.org/rgcenter/ppi/ltc/i51-caregiving.pdf (accessed September 3, 2013).

Chapter 3

1.3 Ever-Growing Health Share of Economy[1]

The percentage of GDP devoted to health care has more than quadrupled during the past 80 years to more than one-sixth of the entire economy. Indeed, health spending has grown faster than almost all other major components of the economy. Thus, an alternative way of assessing long-term trends in the size of the health sector is by examining how the health care share of national output and some of its largest basic parts have grown over time.

PCE accounts for approximately 70 percent of GDP. Thus, changes in the fraction of PCE devoted to health care (including spending for health insurance) mirror the general pattern observed for GDP. However, the health share of PCE is consistently larger than the fraction of GDP attributable to health care: It now exceeds 20 percent[2] (figure 1.3a).

1.3a Health spending absorbs an ever-growing fraction of the economy and personal consumption

Percentage of total expenditures
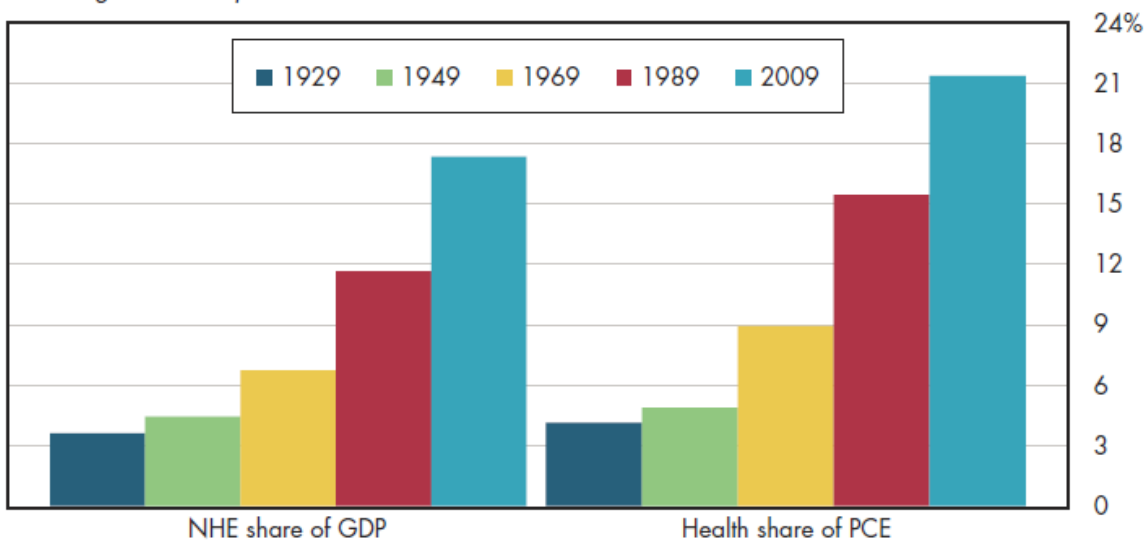
Moreover, a growing share of health care is financed by government at all levels. Consequently, the

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[1]This content is available online at <https://hub.mili.csom.umn.edu/content/m10004/1.3/>.

[2]The figure shown is based on personal consumption expenditures on health adjusted to include expenditures on net health insurance.

percentage of public sector spending having to do with health care has risen even faster than in the general economy or in total consumption (figure 1.3b). However, viewing aggregate health spending across all levels of government masks a sizable difference in trends at the federal government level compared with state and local governments—especially since the introduction of Medicare and Medicaid in 1966. Health spending now makes up 25 percent of all federal spending compared with only one-sixth of total spending by state and local governments. As of 1969, the health share of non-federal government spending still slightly exceeded the share of government spending at the federal level. These initial comparisons provide a broad view of the size and direction of expenditure trends (chapter 3 provides detailed public spending).

1.3b The share of government spending or revenues accounted for by health has increased even faster than the health share of GDP
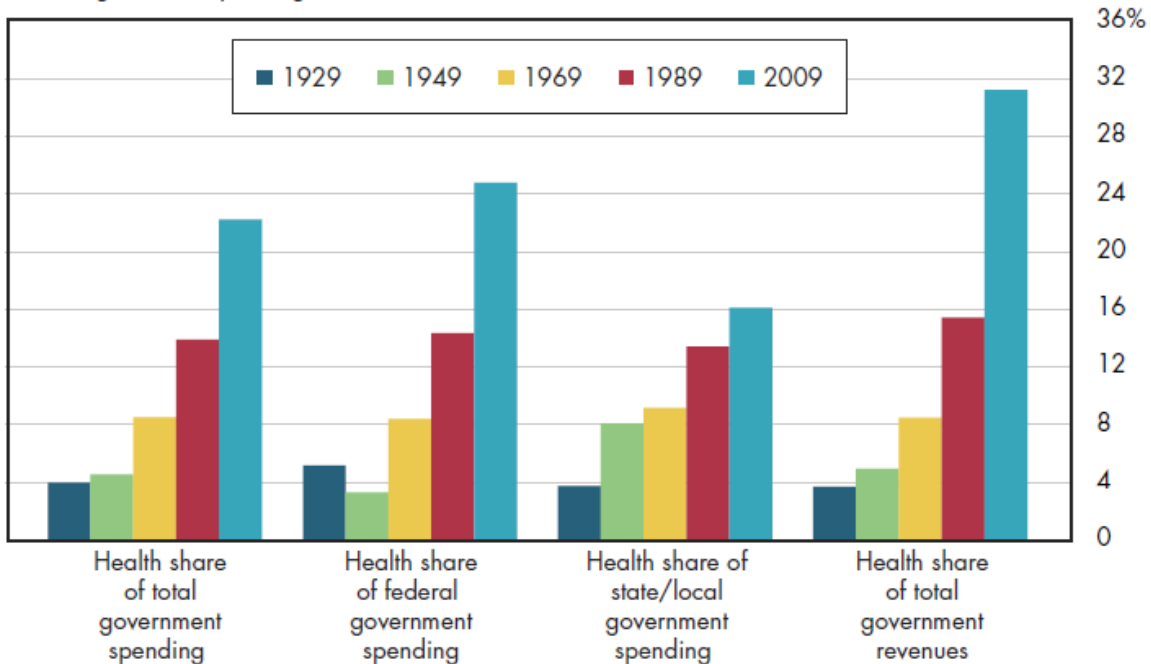
Note: In this NHE Accounts framework, federal government health spending includes all of Medicare (including components financed privately, such as Parts B and D premiums), the federal share of Medicaid spending, and other public health-related programs such as Department of Defense (DOD) and Veterans Administration (VA) health. State/local government health spending includes the non-federal share of Medicaid, workers' compensation, hospital subsidies, and the non-federal share of categorical or block grant programs such as maternal and child health.

Before 1969, there was not a big difference between health care's share of public spending or public revenue. However, because deficit financing has become an enduring feature of the federal budget in recent decades, measuring health spending against government revenues shows an even more dramatic rate of growth in the past 40 years. Health care now absorbs almost one in three tax dollars — a share that is more than eight times as large as it was in 1929. Considering only federal revenues, this share would be even more.

3.1 Downloads

Download Excel tables used to create both figures: Figures 1.3a/1.3b Tables[3] . Figures 1.3a and 1.3b both were created from the following table (the workbook includes all supporting tables used to create this table):

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[3]https://hub.mili.csom.umn.edu/content/m10004/latest/1.3TAB.xls

- Table 1.3. Health Expenditures as a Share of U.S. GDP, Federal Outlays, State and Local Government Outlays: 1929 to 2021

Download PowerPoint versions of both figures.

- Figure 1.3a Image Slide (as it appears above)[4]
- Figure 1.3a Editable Slide (can be formatted as desired)[5]
- Figure 1.3b Image Slide (as it appears above)[6]
- Figure 1.3b Editable Slide (can be formatted as desired)[7]

3.2 References

- A. Author's calculations.
- B. Department of Commerce. Bureau of Economic Analysis.
- C. Department of Health and Human Services. Centers for Medicare and Medicaid Services.
- D. Worthington NL. National Health Expenditures, Calendar Years 1929-73. Research and Statistics Note No 1. Office of Research and Statistics 1975.

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[4]https://hub.mili.csom.umn.edu/content/m10004/latest/1.3a.pptx
[5]https://hub.mili.csom.umn.edu/content/m10004/latest/1.3aDATA.pptx
[6]https://hub.mili.csom.umn.edu/content/m10004/latest/1.3b.pptx
[7]https://hub.mili.csom.umn.edu/content/m10004/latest/1.3bDATA.pptx

Chapter 4

1.4 US Spends the Most on Health among Countries[1]

A precise comparison across countries of total output (or consumption) having to do with health care is as difficult as a precise comparison of health care output across widely separated years in the same country. Even when accurately valuing the output of each country in its own currency, no precise, accurate way exists to convert these values into a common currency. In 2007, NHE per capita in Canada was $4,713 Canadian, whereas U.S. NHE per capita was $7,290. How many Canadian dollars equal a U.S. dollar in terms of the amount of health services they represent? Both the mixture of health services and relative health prices differ in the two countries; this fact negates any possibility of a certain answer.

The best, though imperfect, way to arrive at an answer involves three steps. The mathematics are too complicated to explain here. Conceptually, purchasing power parity (PPP) essentially represents how many Canadian dollars would match the U.S. dollar in terms of purchasing the identical "market basket" of goods.

This computing method provides a PPP exchange rate for the entire economy (termed GDP PPP here) or for a single sector such as health care. Using GDP PPPs to adjust health spending provides a measure of how the opportunity cost of health spending varies across countries. As shown in figure 1.4a, to purchase its health care, the United States foregoes 50 percent more output in absolute terms than second- place Norway. However, because U.S. health prices are 25 percent higher than in the Organisation for Economic Co-operation and Development (OECD) — although its economy-wide prices are 5 percent lower — the GDP PPP exchange rate overstates the amount of health output a U.S. dollar could buy. The health PPP exchange rate provides a more accurate comparison of actual health resource use across countries: U.S. output of health resources is only 18 percent higher than in Norway, rather than the 50 percent previously stated.

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[1]This content is available online at <https://hub.mili.csom.umn.edu/content/m10005/1.3/>.

1.4a The difference in per capita health spending between the United States and its OECD competitors is much less when adjusted for U.S. health prices

Per capita health spending as a percentage of U.S. per capita NHE (2007)
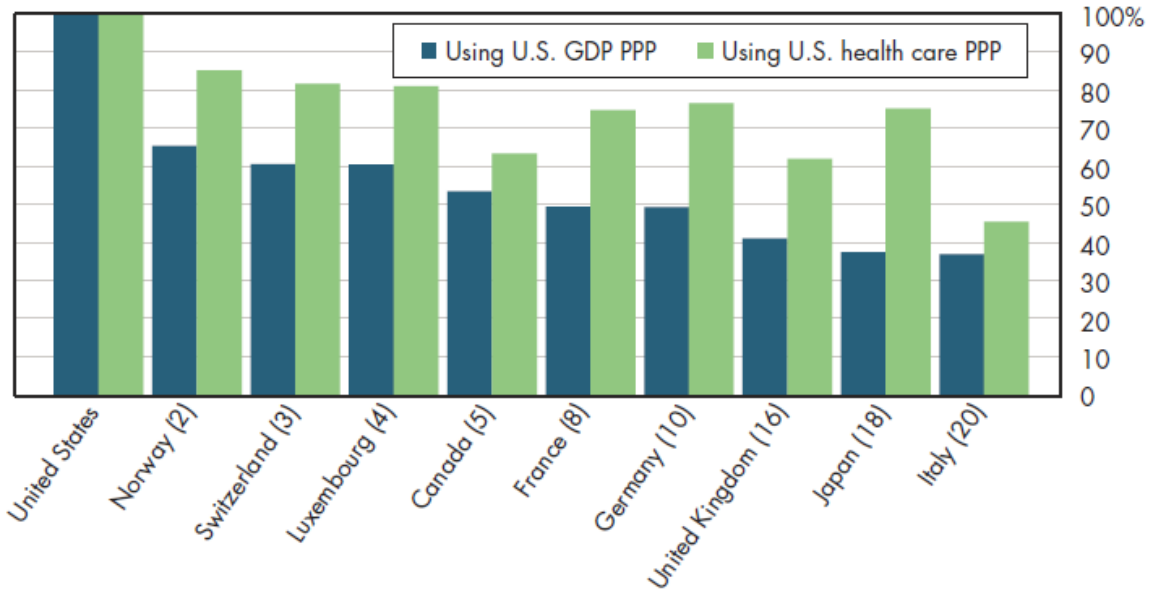

Note: Numbers in parentheses show OECD country ranking on health spending per capita using GDP PPP index. The GDP purchasing power index (PPP) standardizes health spending in terms of its general purchasing power in the U.S. economy. The health care PPP standardizes spending in terms of its power to purchase a standardized bundle of health care goods and services in the U.S.

Health PPP in U.S. dollars is lower than GDP PPP for all OECD members (figure 1.4b); thus, the widely reported cross-national health spending dollars (calculated using GDP PPP) greatly exaggerate the true differences in health resource use between the United States and other nations.

1.4b Failure to account for higher U.S. health prices greatly exaggerates per capita health cost differences between OECD nations and the United States

Ratio: health purchasing power parity/GDP PPP in 2007 (both PPPs indexed to U.S. prices)
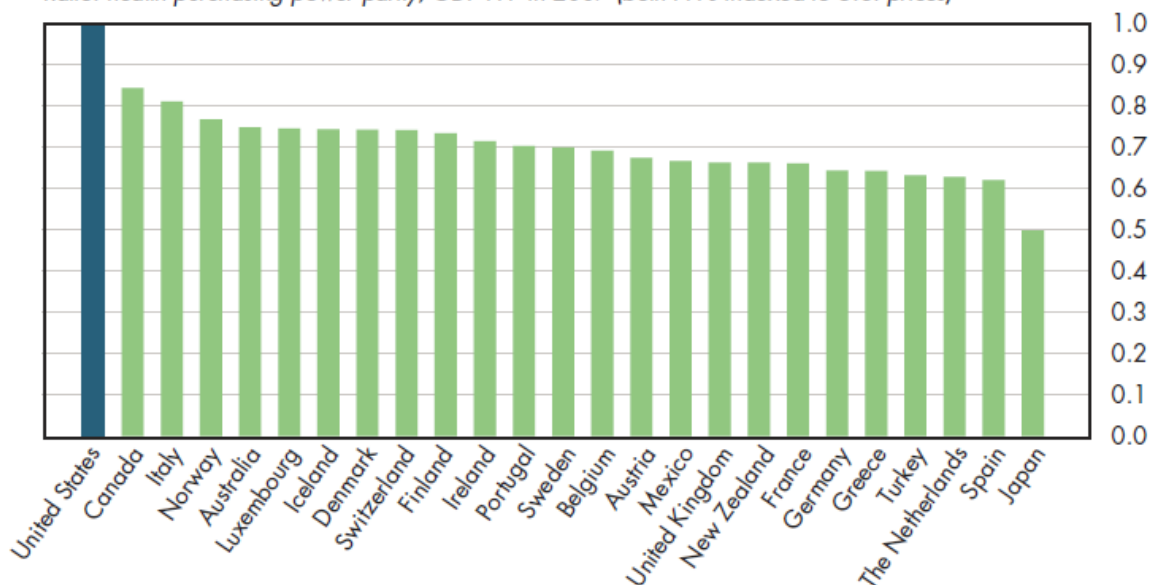
Note: The lower the ratio of health PPP to GDP PPP, the more the traditional measure of per capita spending (based on GDP PPP) exaggerates the actual difference in real health spending between a given country and the United States in terms of constant health purchasing power.

4.1 Downloads

Download Excel tables used to create both figures: Figures 1.4a/1.4b Tables[2] . Figures 1.4a and 1.4b both were created from the following table (the workbook includes all supporting tables used to create this table):

- Table 1.4. Measures of Country Size and National Health Expenditures Per Capita, OECD Member Countries: 2007

Download PowerPoint versions of both figures.

- Figure 1.4a Image Slide (as it appears above)[3]
- Figure 1.4a Editable Slide (can be formatted as desired)[4]
- Figure 1.4b Image Slide (as it appears above)[5]
- Figure 1.4b Editable Slide (can be formatted as desired)[6]

4.2 References

A. Author's calculations.
B. Organisation for Economic Co-operation and Development.

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[2]https://hub.mili.csom.umn.edu/content/m10005/latest/1.4TAB.xls
[3]https://hub.mili.csom.umn.edu/content/m10005/latest/1.4a.pptx
[4]https://hub.mili.csom.umn.edu/content/m10005/latest/1.4aDATA.pptx
[5]https://hub.mili.csom.umn.edu/content/m10005/latest/1.4b.pptx
[6]https://hub.mili.csom.umn.edu/content/m10005/latest/1.4bDATA.pptx

Chapter 5

1.5 Health Spending Outgrew Economy[1]

For 80 years, per capita health spending has grown persistently each year from one to six percentage points faster than the non-health portion of the economy. Since 1929, annual growth in per capita NHE (4.1 percent) was slightly more than double the rate experienced in the rest of the economy.

However, the size of the disparity has changed dramatically over this period (figure 1.5a). Health spending growth has outpaced general economic growth by the largest margins during periods of significant expansions of public health insurance coverage (the introduction of Medicare and Medicaid in the 1960s, Medicaid expansion in the 1980s), and years marked by poor economic performance (for example, stagflation during the 1970s).

1.5a After adjusting for inflation, increased health spending per person has outstripped the increase in non-health GDP per capita for many decades

Compound annual growth rate in inflation-adjusted spending over period shown
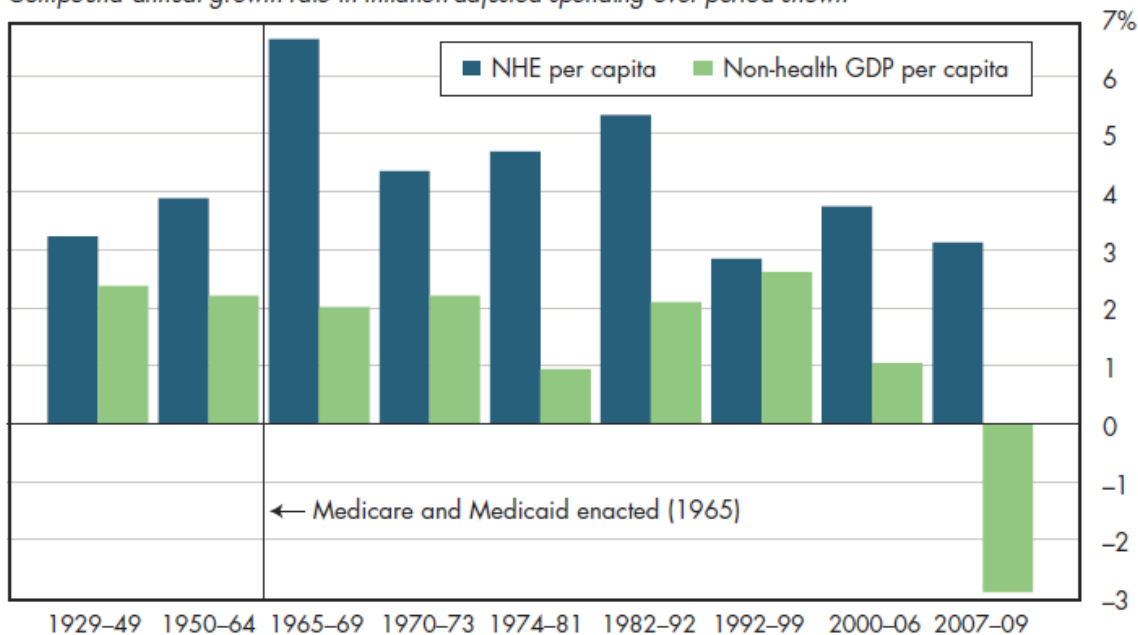

Note: Non-health GDP = GDP minus NHE. Growth rates calculated from real GDP per capita (chained 2005 dollars) and real NHE per capita (calculated in 2005 dollars from GDP price deflator).

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[1] This content is available online at <https://hub.mili.csom.umn.edu/content/m10006/1.3/>.

The more fine-grained data shown (figure 1.5b) are for a shorter time but demonstrate how infrequently annual growth in per capita non-health sector GDP has outpaced the rate of increase in NHE per capita since 1960. Rather than exhibiting a common pattern, the few cases in which this has occurred have unique explanations.

1.5b Since 1960, annual growth in inflation-adjusted health costs per U.S. resident fell below the rise in non-health costs per capita only seven times
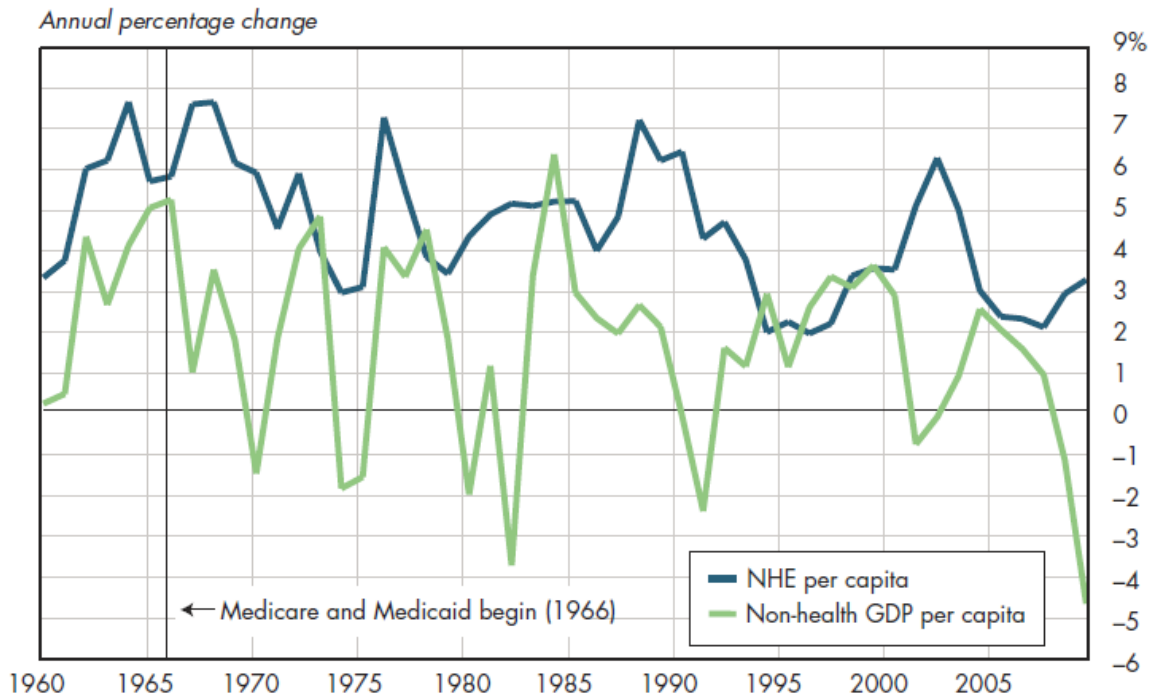
It is worth emphasizing from the previous discussion what these trends do (and do not) imply. Both sets of growth rates have been calculated from "real" (inflation- adjusted) per capita estimates of NHE and non-health sector GDP (that is, GDP minus NHE), using the GDP deflator to remove the effects of general economy-wide inflation. (Using chained dollars is a more precise way of measuring inflation than using the standard CPI.) Including the effects of health-specific inflation, the higher observed growth in real per capita NHE does not imply that growth in per capita health *output* has been double that of the rest of the economy. As well, components of both NHE and GDP reflect investments in capital or research and development (R&D) that might not pay off until future years. Thus, the growth rate differential is not a precise comparison of how Americans have consumed health care relative to everything else.

Our apparent willingness to increase expenditures on health care even during periods that the real economy is shrinking is suggestive of the relative priority of health care over everything else. Conversely, to date Americans have been able to enjoy a rising standard of living notwithstanding their high level of spending on health.

5.1 Downloads

Download Excel tables used to create both figures: Figures 1.5a/1.5b Tables[2] . Figures 1.5a and 1.5b both were created from the following table (the workbook includes all supporting tables used to create this table):

- Fig. 1.5a: Table 1.5. Compound Annual Growth in U.S. Per Capita Real National Health Expenditures, GDP and Non-health GDP (chained 2005 dollars): 1929 to 2021

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[2]https://hub.mili.csom.umn.edu/content/m10006/latest/1.5TAB.xls

- Fig. 1.5b: Table 1.5.1 Compound Annual Growth in U.S. Per Capita Real National Health Expenditures, GDP and Non-health GDP (chained 2009 dollars): 1929 to 2021

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- Figure 1.5a Image Slide (as it appears above)[3]
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5.2 References

A. Centers for Medicare and Medicaid Services (CMS). National Health Expenditures Accounts: Methodology Paper, 2011. Definitions, Sources, and Methods. 2011a. Available at: http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/dsm-11.pdf (accessed January 10, 2013).

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Chapter 6

# 1.6 Health Spending Rose in All Advanced Countries[1]

Without exception, in all so-called advanced countries, NHE accounts for a larger share of GDP today than it did 50 years ago. Each 1 percent increase in GDP has been associated with approximately a 1.3 percent increase in health spending. This proclivity to devote a bigger share of rising GDP to gains in health status might make the growing share of GDP allocated to health care appear "inexorable"; however, it is not inevitable. In some countries, the health share of GDP has declined or remained relatively flat for periods of years.

In the early 1960s, the health sector share of U.S. GDP was much more similar to that of its major competitors than it is today (figure 1.6a). Inferring from these changes that the United States spends "too much" or that other G7 nations spend "too little" on health care is inappropriate. In 1980, real GDP per capita (using 2005 dollars and purchasing power) was lower in every other G7 nation than in the United States—a difference ranging from 11 percent (Canada) to 25 percent (Italy). From 1980 to 2007, real GDP per capita grew faster in the United States than in all G7 countries except the United Kingdom. This combination—a higher base level of per capita GDP and faster growth—permitted the United States to afford a much higher increase in health spending.

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[1]This content is available online at <https://hub.mili.csom.umn.edu/content/m10007/1.3/>.

1.6a **The difference between the United States and other G7 nations in the health spending share of GDP has increased since 1980**

NHE as a percentage of GDP

Legend:
- United States (1)
- France (5)
- Germany (3)
- Canada (7)
- Italy (6)
- United Kingdom (4)
- Japan (2)
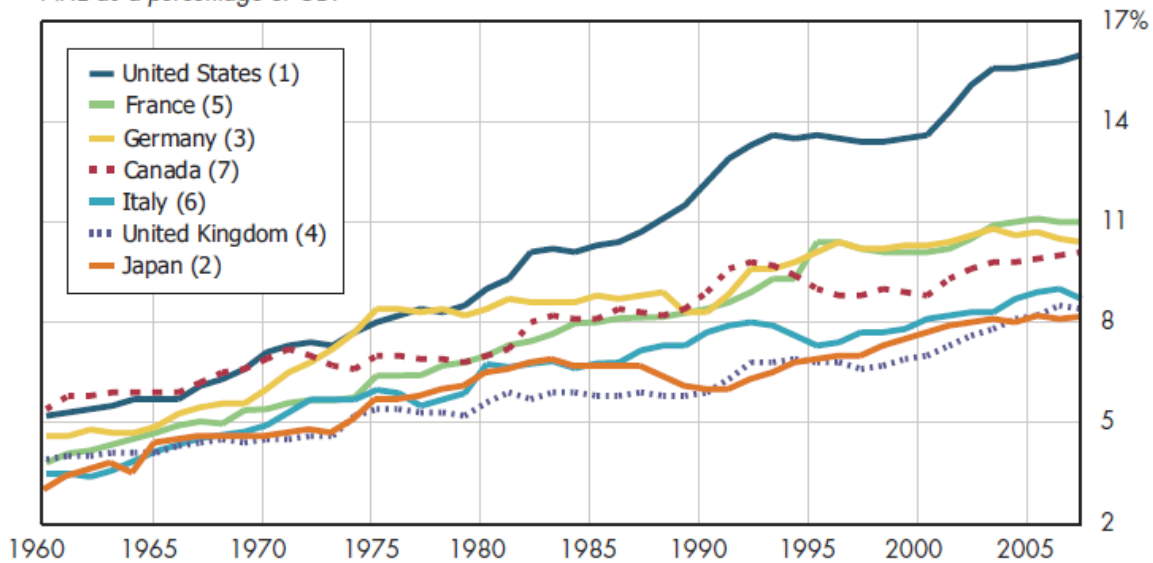
Note: Numbers in parentheses show country ranking within G7 based on size of GDP in 2007.

What does this mean? In 1980, real non-health GDP per capita in all other G7 countries was lower than in the United States Yet with the exception of the United Kingdom (where such spending grew from 71 percent of the U.S. average in 1980 to 82 percent by 2007), the U.S. margin of advantage in non-health spending had increased in 2007 relative to 1980.

Moreover, growth in real NHE per capita has not been persistently higher in the United States relative to its major economic competitors (figure 1.6b). That is, even though health spending growth outpaced GDP growth by a greater extent in the United States than in other G7 nations, it did not become relatively less affordable in terms of GDP purchasing power. This fact illustrates the importance of making apples-to-apples comparisons when assessing the relative performance of different health sectors. Chapter 19 explores how well the American health system performs in obtaining value for money in health care.

1.6b For 50 years, growth in real health spending per capita has not been noticeably higher in the United States relative to other G7 countries

Compound annual growth rate in inflation-adjusted health spending per capita
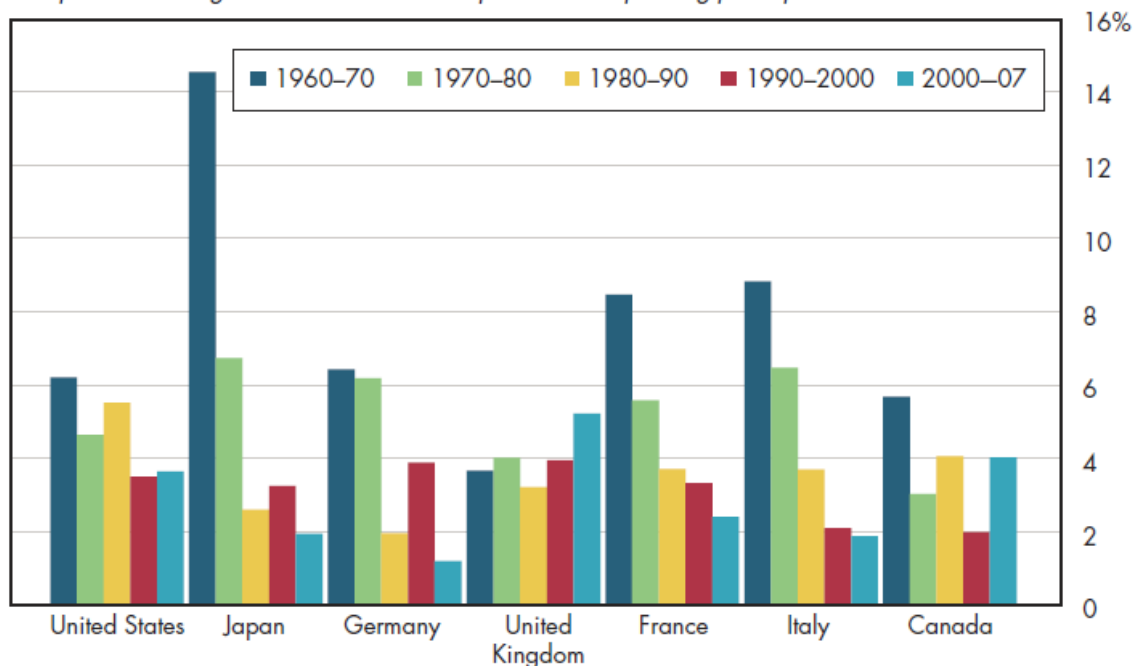
Note: Countries listed (left to right) in order of the size of their GDP in 2007. Growth rates estimated from real NHE per capita (calculated in chained 2005 U.S. dollars using a GDP price deflator).

6.1 Downloads

Download Excel workbooks used to create Figure 1.6a Tables[2] and Figure 1.6b Tables[3] . [Note that you'd have separate links for each set of tables] Figures 1.6a and 1.6b were created from the following tables (the workbook includes all supporting tables used to create this table):

- Figure 1.6a: Table 1.6. National Health Expenditures as a Percent of GDP, Selected Industrialized Countries: 1960 to 2008
- Figure 1.6b: Table 1.6.3. Real NHE Per Capita (chained 2005 U.S. dollars), Selected Industrialized Countries: 1960 to 2007

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6.2 References

A. Author's calculations.

B. Organisation for Economic Co-operation and Development.

Chapter 7

1.7 Big and Increasing Gap in Health Spending between US and Rest of the World[1]

Even from a world perspective, the American health system is massive, accounting for approximately 40 percent of an estimated $5.2 trillion in health expenditures across the globe (figure 1.7a). This share is far higher than the U.S. share of worldwide gross national income (GNI) — a sharp contrast to the rest of the G7, where the shares are almost equal. These calculations are based on estimates by the World Health Organization (WHO). In most countries, GNI is approximately equivalent to GDP so it is a reasonable approximation of national output. However, to equalize purchasing power, WHO estimates health spending using the rough equivalent of GDP PPP. As noted previously, this approach tends to overstate relative U.S. health spending. The difficulties noted about making international comparisons of output in general (or health sector output in particular) are even more severe when countries as different as the United States and Ethiopia are involved. Despite such measurement problems, there is no doubt that differences in per capita income and health spending are extremely large.

1.7a The U.S. share of world health expenditures is substantially larger than its share of either world population or GDP

Percentage of world total (2006)
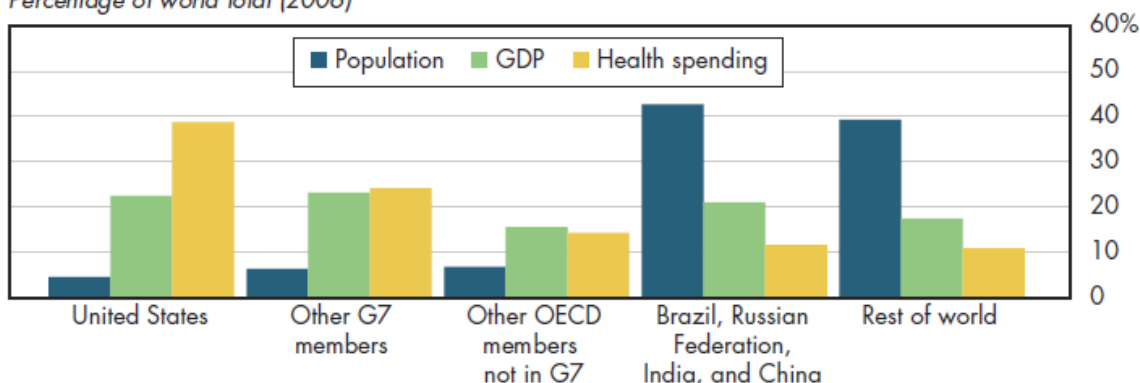
The concentration of world population in the group with fewer than 10 percent of U.S. per capita income and health spending is magnified by the inclusion of China and India, where almost 40 percent of the world's population reside (figure 1.7b). This group also includes four of the world's most populated countries

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[1]This content is available online at <https://hub.mili.csom.umn.edu/content/m10009/1.6/>.

(Indonesia, Bangladesh, Pakistan, and Nigeria).

**1.7b More than 70 percent of the world's population live in nations with
health spending per capita below 10 percent of U.S. levels**

Percentage of world population living at the level of per capita GNI or NHE (2006)

Percentage of U.S. per capita amount
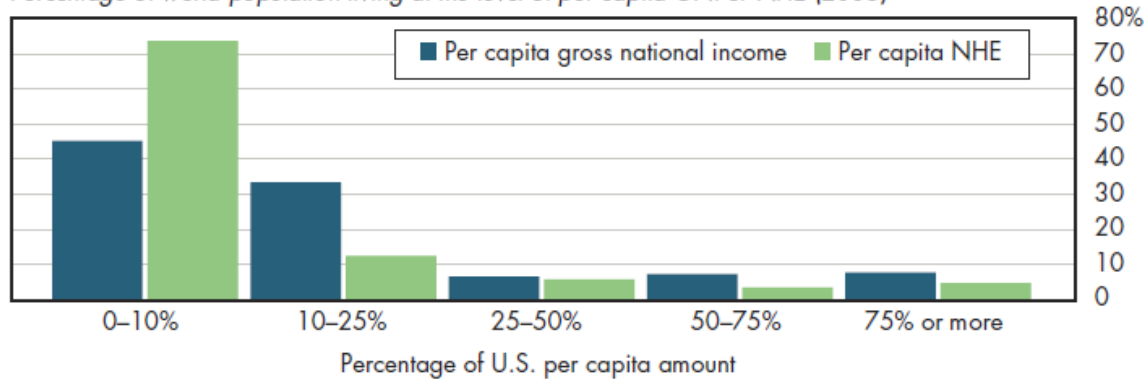
Among the world's 10 most populated countries, recent growth in per capita income has exceeded that in the United States, implying a shrinking income gap. In contrast, with the exception of Indonesia, China, and the Russian Federation, NHE per person has grown less rapidly in all of these nations compared with the United States (figure 1.7c). These three nations increased health spending relative to the United States while the others fell further behind. However, except for Indonesia, health spending growth has been slower than growth in income.

**1.7c In the 10 most populous countries, increased per capita income has outpaced
the increase in NHE per person, but not in the United States or Indonesia**

Compound annual growth rate from 2002–2006
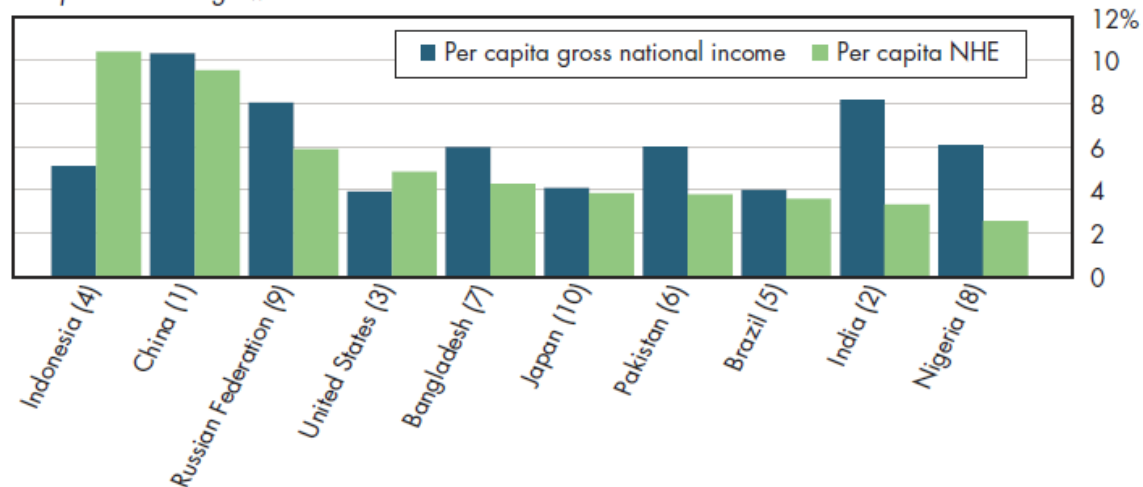
Note: Countries ranked by NHE per capita. Numbers in parentheses show ranking by size of population in 2007. Growth rates estimated from real NHE per capita (calculated in chained 2005 U.S. dollars using a GDP price deflator).

The OECD has compiled reasonably good data over decades; however, health spending data in some of these developing countries is much more uneven in quality and spans a much shorter timeframe. Reaching strong conclusions from growth differentials observed over only five years would be wrong.

7.1 Downloads

Download Excel tables used to create both figures: Figures 1.7a/1.7b Tables[2] . Figures 1.7a, 1.7b, and 1.7c were all created from the following table (the workbook includes all supporting tables used to create this table):

- Fig. 1.7a: Table 1.7. Population, GDP and National Health Expenditures (PPP international dollars), by Country: 1995-2009
- Fig. 1.7b: Table 1.7.2. Index of Per Capita Gross National Income and NHE (U.S. = 100), by Country: 2009
- Fig. 1.7c: Table 1.7.1. Per Capita GDP and National Health Expenditures (PPP international dollars), Index per Capita (U.S.=100) and Thirteen-Year Annual Growth Rate, by Country: 1995-2009

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- Figure 1.7c Image Slide (as it appears above)[7]
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7.2 References

- A. Author's calculations.
- B. World Health Organization.

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